Operational Environmental and Social Management Plan – Lots 1 & 3

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Project Title	**Guyana Utility Scale Solar Photovoltaic Program (GUYSOL)**
ICB No.:	**GUYSOL-ICB-001-2022**
Project Location	**Lot 1** - **Hampshire, East Coast Berbice** - **Prospect, East Coast Berbice (West Canje)** - **Trafalgar, West Coast Berbice** **Lot 3** - **Onderneeming, left bank of the Essequibo River** - **Charity, right bank of the Pomeroon River**
Contractor	**Joint Venture of SUMEC Complete Equipment & Engineering Co. Ltd and XJ Group Corporation, or JV of SUMEC-XJ Group**
Document title	**Operational Environmental and Social Management Plan for the Operation of five Solar Photovoltaic (PV) Farms under the GUYSOL Project**
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Acronyms and Abbreviations

BESS – Battery Energy Storage System
CESMP – Contractors' Environmental and Social Management Plan
DBIS – Demerara Berbice Interconnected Grid System
ESA – Environmental and Social Assessment
ESMP – Environmental and Social Management Plan
GNBS – Guyana National Bureau of Standards
GPL – Guyana Power and Light Inc.
GRM – Grievance Redress Mechanism
GUYSOL – Guyana Utility Scale Solar PV Program
IDB – Inter-American Development Bank
MoAA – Ministry of Amerindian Affairs
MWp – Megawatt-peak
OESMP - Operational Environmental and Social Management Plan
PDO - Principal Development Officer
PV - Photovoltaic

EXECUTIVE SUMMARY

The *Operational Environmental and Social Management Plan (OESMP)* was developed for the operation of five (5) utility-scale Solar Photovoltaic (PV) Farms under the *Guyana Utility Scale Solar Photovoltaic Program (GUYSOL)*, implemented by the Government of Guyana through the Guyana Power and Light Incorporated (GPL). The OESMP applies to Lots 1 and 3, which comprise the Trafalgar, Hampshire, and Prospect sites in Berbice and the Onderneeming and Charity sites in Essequibo. These sites collectively contribute 18 MWp of solar PV capacity and 12 MWh of Battery Energy Storage Systems (BESS) to the national grid.

The OESMP provides a comprehensive framework for the management of environmental and social aspects associated with the operational phase of the GUYSOL Project. It was prepared in compliance with the *Environmental Protection Act (1996)* and associated Regulations of Guyana, GPL's Environmental and Social Policies, and the Inter-American Development Bank (IDB)'s Environmental and Social Safeguards. The Plan ensures that all operational activities are undertaken in an environmentally responsible, socially equitable, and legally compliant manner.

Key objectives of the OESMP include:

- Ensuring compliance with applicable national legislation, environmental authorisations, and institutional requirements.
- Identifying, managing, and mitigating environmental and social impacts arising during the operational phase.
- Establishing standard operating procedures for pollution control, waste management, water conservation, and occupational health and safety.
- Providing a framework for environmental monitoring, evaluation, and continual improvement.
- Promoting stakeholder engagement, information disclosure, and grievance redress mechanisms.

The OESMP identifies potential operational impacts such as solid and hazardous waste generation, fuel and oil handling, drainage management, occupational health and safety risks, and minor disturbances from maintenance activities. It prescribes corresponding mitigation measures, performance indicators, and monitoring requirements. It also defines the roles and responsibilities of the Project Executing Unit (PEU), site supervisors, and GPL's Environmental, Health, Safety and Quality Management Department in ensuring effective implementation.

An *Environmental, Health, and Safety Monitoring Plan* was incorporated to track key performance parameters such as noise, water quality, waste management, and occupational safety. Additionally, the Plan establishes a *Training and Capacity-Building Framework* to enhance staff competence in environmental compliance, spill control, waste segregation, emergency response, and stakeholder communication.

The *Grievance Redress Mechanism (GRM)* ensure meaningful participation of affected and interested parties throughout project operations. It provides a clear, tiered process for the receipt, documentation, and resolution of grievances at both site and institutional levels, with escalation procedures through the Regional Democratic Councils, the Ministry of Amerindian Affairs (for Indigenous stakeholders), and the Environmental Protection Agency (EPA), where applicable.

Collectively, these provisions ensure that the GUYSOL Project operates in full alignment with the principles of sustainable development, environmental stewardship, and social responsibility. The OESMP thereby serves as a critical management instrument for safeguarding environmental quality, community well-being, and the long-term sustainability of Guyana's renewable energy infrastructure.

INTRODUCTION

Background

The Guyana Power and Light Incorporated (GPL)'s Electricity Demand Forecasting Framework 2022 estimated the electricity demand for Demerara and Berbice are currently being served by the Demerara Berbice Interconnected Grid System (DBIS), the Essequibo Islands and newly added Linden. In this Forecast, the potential electricity demand is estimated to significantly increase in each county, more so, the DBIS (GPL, 2023). In consideration of this, the Government of Guyana committed 33 MWp of solar power through the Guyana Utility Scale Solar Photovoltaic Program (GUYSOL). Through the GPL, this program will deliver 10MWp of Solar PV capacity in Berbice, 8MWp of Solar PV capacity with 12 MWh Battery Energy Storage Systems (BESS) in Essequibo, and 15MWp of Solar PV capacity and 15 MWh BESS in Linden.

The general objective of GUYSOL is to support the diversification of Guyana's energy matrix toward using climate resilient renewable energy sources in the electricity generation matrix (IDB, 2022). The specific objectives of the program are:

- Avoid CO^2 emissions with the development of solar PV generation plants
- Lower the cost of electricity generation while supporting the country's transition towards renewable energy sources of generation
- 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 (IDB, 2022)

The Program consists of two main components:

- **Component 1**: Solar PV solutions in the energy matrix

This component will cover the investment in the 33 MWp solar PV developments and associated energy storage systems.

- **Component 2**: Operation efficiency and reliability of the systems

Eight farms were proposed under Component 1. The total 33MWp solar PV in the three different grids are as follows:

- 15MWp of Solar PV with a minimum of 22MWh (11MW, 2h) of battery storage for the Linden Isolated System
- 8MWp of Solar PV with a minimum of 12MWh (6MW, 2h) of battery storage for the Essequibo Coast Isolated System
- 10MWp of Solar PV for the Demerara-Berbice Interconnected System, specifically in Berbice

These farms will provide a cost-effective first step to transition to a cheaper, greener form of generation that is consistent with the GPL's Demand Forecasting Framework 2022. Furthermore, this development will act as a catalyst to further renewable energy investments, increase penetration, lower carbon emissions, improve grid stability and reduction in Government subsidies for utilities.

Justification

In compliance with the Guyana National Environmental Legislation, GPL Environmental and Social Protection Policies and the Inter-American Development Bank (IDB)'s

Environment and Safeguards Compliance Policy, several assessments are required to address the environmental and social issues related to any proposed project. These include but are not limited to:

I. An Environmental and Social Analysis (ESA)
II. An Environmental and Social Management Plan (ESMP)
III. Contractors' Environmental and Social Management Plan (CESMP)
IV. Operational Environmental and Social Management Plan (OESMP)

Prior to the commencement of works, the ESA and ESMP were completed. For the construction phase, the CESMP was developed. Finally, for the operational phase of the project, an OESMP is required. Accordingly, this OESMP governs Lot 1 (Trafalgar, Hampshire, and Prospect) and Lot 3 (Onderneeming and Charity). The Plan includes the following aspects:

- Description of the Project including the main activities and components
- Environmental Policy and Institutional Framework including the relevant legislation, procedures and standards applicable at the international, national and institutional levels
- Potential environmental and social impacts were identified including the impacts, mitigation measures, monitoring indicators, responsibility and costing
- Implementation aspects of the OESMP like the monitoring and evaluation, approach training and capacity building and the methodology
- Stakeholder Engagement and Grievance Redress Mechanism

Scope and Objective of the OESMP

This OESMP was prepared to satisfy the operational aspects of the solar PV farms. as stipulated in the National Environmental Legislation as well as the Environmental and Social Safeguards Policies of the IDB. The general objectives of the O-ESMP include:

1. Ensure compliance with national environmental legislation, regulatory requirements, and any project-specific approval conditions.
2. Identify and manage potential environmental and social impacts that may arise during the operational phase of the project.
3. Provide clear operational procedures to minimize pollution, waste generation, and resource consumption.
4. Promote occupational health and safety for all personnel and affected communities.
5. Establish monitoring and reporting mechanisms to evaluate environmental and social performance and ensure continual improvement.
6. Maintain effective communication with stakeholders and relevant authorities on environmental and social matters.
7. Ensure sustainability of operations by integrating environmental and social considerations into daily management practices.

DESCRIPTION OF THE PROJECT

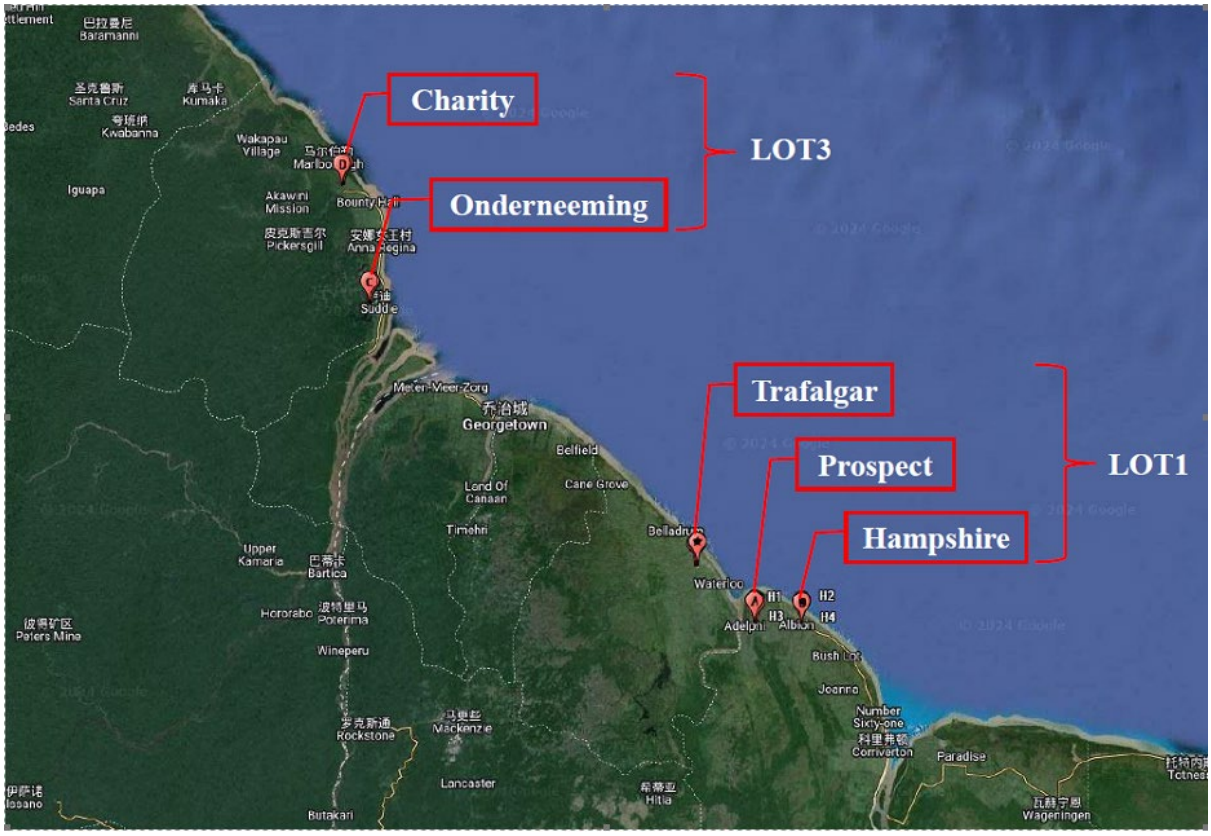

Figure 1: Project Locations

Table 1: Project locations with specific coordinates

LOT	Project Site	North	West
LOT1	Hampshire	6°15'11.65"	57°21'57.43"
	Prospect	6°15'9.88"	57°29'24.91"
	Trafalgar	6°24'28.36"	57°38'29.12"
LOT3	Onderneeming	7°5'40.25"	58°30'33.93"
	Charity	7°24'24.08"	58°35'6.19"

The Project shall have a total minimum output power of 18 MWp with 12 MWh of BESS inclusive of all photovoltaic arrays located across five distinct sites. Lot, Land Area Available and Minimum System Output per Lot are shown in the table below.

Table 2: Lot, Land Area Available and Minimum System Output per Lot

Lots	Location	Acreage Available (acres)	Minimum Solar and BESS Capacity to be Installed
1	Berbice - Trafalgar on the West Coast of Berbice	30	4MWp
	Berbice - Prospect on the East Coast of Berbice;	56.5	3MWp
	Berbice - Hampshire in Corentyne, Berbice	14.4	3MWp
3	Essequibo Coast – Onderneeming	13.6	5MWp with 7.5MWh (3.75MW, 2hr) of BESS
	Essequibo Coast – Charity	20	3MWp with 4.5MWh (2.25MW, 2hr) of BESS
Total		134.5	18MWp with 12MWh of BESS

Berbice

A total of 10MWp of Solar PV for the DBIS, specifically 4MWp are reserved for Trafalgar on the West Coast of Berbice, 3MWp at Hampshire in Corentyne and 3MWp at Prospect on the East Coast of Berbice.

Hampshire

Figure 2: Project Site – Hampshire (Berbice)

The Hampshire site (6°15'10.5"N 57°21'49.9"W, 14.427) is situated at Plantation Hampshire on the east coast of Berbice in the county of Berbice, Guyana. The site is located approximately 1.0 km along the unnamed main access road which is directly off the Berbice Highway and approximately 112km from Georgetown.

Trafalgar

Figure 3: Project Site – Trafalgar (Berbice)

Site Trafalgar (6°24'37.5"N 57°38'31.8"W, 26.45 acres) is situated in rear of the east one-third of Plantation Trafalgar on the west coast of Berbice, in the county of Berbice, Guyana. It is along an unnamed main access road, off the Berbice Highway in the locale of “No. 27” in Trafalgar, Berbice. The site is located approximately 2.5 km along the unnamed main access road which is directly off the Berbice Highway and approximately 73.5km from Georgetown along the Berbice Highway.

Prospect

Figure 4: Project site – Prospect (Berbice)

The Prospect site (6°15'09.3"N 57°29'24.8"W, 56.528 acres) is situated on the Corentyne Coast in the county of Berbice, Guyana. It is located along an unnamed main access road, off the Berbice Highway in the locale of the Canefield Settlement in Prospect, Berbice. It is situated approximately 1.0 km along the unnamed main access road which is directly off the Berbice Highway-Palmyra Access Road and approximately 107km from Georgetown along the Berbice Highway.

Essequibo

This Lot comprises a total of 8MWp of Solar PV with a minimum of 12MWh (6MW, 2h) of Battery Storage for the Essequibo Coast Isolated System specifically 5MWp at Onderneeming and 3MWp in Charity including a total of 6MW, 2hr (minimum) BESS split into 3.75MW at Onderneeming and 2.25MW at Charity for stability support on the grid.

Onderneeming

Figure 5: Project site - Onderneeming (Essequibo)

The Onderneeming site (7°05'40.3"N 58°30'33.9"W, 13.60 acres) is in the rear of Plantation Onderneeming on the left bank of the Essequibo River in the County of Essequibo, Guyana.

Charity

Figure 6: Project site - Charity (Essequibo)

The Charity solar PV site (7°24'31.61"N 58°34'52.39"W, 20 acres) is in the rear of Try Best, Burnt Bush, Buxton, Grant St. Joseph, Charity and Unity or Land Registration Block Number VII in the right bank Pomeroon River, in the county of Essequibo. The main road is approximately 1.28km from the southeastern boundary, with the town centre southwest of the project site at 1.62km.

Main activities under the phases of development

Construction Phase

The Project scope includes the following facilities for each lot:

- All engineering works for the installation of a PV system;
- All engineering works for the installation of a BESS;
- All equipment for PV array (including PV modules, mounting structures, inverters and related/ancillary equipment) to comprise a PV System;
- All equipment for BESS (including battery modules, battery inverters, battery buildings/structures and related/ancillary equipment) to comprise a BESS;
- AC collection equipment to combine the output of each inverter to the MV and HV Points of Interconnection with Guyana Power and Light (GPL) distribution;
- MV and HV power station;
- MV and HV connection line and grid connection, including all necessary equipment;
- SCADA and Data Acquisition System (DAS);
- All site work (including but not limited to clearance, land preparation, cleaning, fencing, road access) and structures necessary for the efficient functioning of the PV and BESS as designed by the equipment manufacturers;
- Other activities and equipment as detailed in Technical Scope of Work that may be necessary for the functionality of the PV and BESS systems.

Operation and Maintenance Phase

A. Monitoring
i. SCADA Systems: Implement Supervisory Control and Data Acquisition systems for real-time monitoring and control.
ii. Data Analytics: Use data analytics to monitor performance, identify issues, and optimize operations.
B. Maintenance
i. Regular Inspections: Conduct regular inspections and maintenance of solar panels, inverters, transformers, and BESS.
ii. Cleaning: Perform periodic cleaning of solar panels to maintain optimal performance.
iii. Repairs: Address any faults or failures promptly to minimize downtime.
C. Performance Optimization
i. Data Review: Regularly review performance data to identify trends and opportunities for efficiency improvements.
ii. Upgrades: Implement upgrades as needed to enhance system performance and extend the lifespan of the components.

Commissioning Phase

A. Testing and Commissioning
i. System Testing: Conduct comprehensive testing of all components including solar panels, inverters, transformers, and BESS.
ii. Performance Verification: Verify system performance against design specifications and grid requirements.
iii. Safety Checks: Perform safety checks to ensure all installations meet regulatory standards and best practices.
iv. Grid Synchronization: Coordinate with the utility company to synchronize the system with the grid.
B. Handover
i. Documentation: Compile and hand over all project documentation, including design plans, test results, and operational manuals.
ii. Training: Provide training to local operators on system operation and maintenance.

Waste Management

Although solar PV systems produce renewable energy with minimal emissions, certain waste streams are generated during the operational phase. Categorically, these are solid waste, hazardous waste, and wastewater.

Solid (Non-Hazardous) Waste include general domestic waste such as paper, plastic bottles, packaging materials, and food waste generated by staff at the control room or maintenance facilities. Maintenance waste like worn-out cables, metal scraps, small broken parts, or defective electrical components are likely to be generated. Grass and shrub cuttings from regular vegetation control to prevent shading of panels or fire hazards

may be produced. Accumulated materials like dust and debris removed during periodic cleaning of panels and site maintenance may also be generated.

Hazardous Waste like used oils and lubricants may be generated from maintenance of transformers, inverters, and backup generators. Oil-contaminated materials from rags, gloves, and absorbent pads used in cleaning spills or handling oils, batteries and cells from energy storage systems or small backup power units and other electronic waste (e-waste) from defective inverters, control systems, circuit boards, sensors, and wiring components may be generated.

Wastewater may result from water runoff from cleaning solar panels though generally non-hazardous and sanitary wastewater from on-site staff facilities.

Water Supply

During the operational phase, water demand at the solar PV farm is minimal and primarily associated with panel cleaning, staff use, and routine maintenance activities. Water for staff consumption and sanitary facilities is sourced from the Guyana Water Incorporated (GWI) distribution network. Water used for solar panel washing may be obtained from on-site storage tanks which may be supplied from rainwater harvesting systems or pumped. Cleaning operations should be conducted periodically and optimized to minimize water consumption. A reserve water storage tank is maintained on-site to support emergency response (e.g., fire control) and minor maintenance tasks.

Fuel Storage Capacity and Quantity

Although the solar PV farm primarily operates on renewable energy, a limited quantity of fuel is required to support backup power systems and routine maintenance activities during the operational phase. Diesel is used for standby generators that provide backup electricity during grid outages or system maintenance.

ENVIRONMENTAL POLICY AND INSTITUTIONAL FRAMEWORK

National Environmental Legislation and Regulations

This OESMP will be administered in accordance with the institutional and legislative framework governing projects of this nature in the Cooperative Republic of Guyana, in addition to the policies of the IDB. The specific institutional and legislative arrangements that are of relevance to this Project are:

Land-related provisions:

I. State Lands Act 1903
II. National Land Use Plan 2013

Environment-related provisions:

I. Constitution of the Cooperative Republic of Guyana Act 1980
II. Environmental Protection Act 1996
III. Environmental Protection (Authorisation) Regulations 2000
IV. Environmental Protection (Water Quality) Regulations 2000
V. Environmental Protection (Air Quality) Regulations 2000

VI. Environmental Protection (Hazardous Wastes Management) Regulations 2000
VII. Environmental Protection (Noise Management) Regulations 2000
VIII. Environmental Protection (Litter Enforcement) Regulations 2013
IX. Pesticides and Toxic Chemicals Control Act 2000
X. Wildlife Conservation and Management Act 2016
XI. Low Carbon Development Strategy 2009/2030
XII. National Biodiversity Strategy and Action Plan 2012
XIII. Green State Development Strategy Framework 2017

Health, Safety and Labour-related Provisions

I. Occupational Safety & Health Act 1997

Energy-related Provisions

II. Guyana Energy Act 1997
III. Electricity Sector Reform Act 1999

Land-related Provisions

IV. State Lands Act 1903

Environmental Protection Act 1996

The EP Act under which the Environmental Protection Agency was established provides for the management, conservation, protection and improvement of the environment. It also has provisions for the prevention or control of pollution, assessment of the impact of economic development on the environment and the sustainable use of natural resources. The Act mandates the administration of an EIA for projects with potential significant impacts on the environment. This Act was amended in 2005 to include a section on record keeping and monitoring requirements. Under this section, any person who releases or engages in the handling of hazardous substances or contaminants is required to:

- Sample and analyze such contaminant or hazardous substance, or material contaminated by that person for specific constituents or characteristics.
- Install, use and maintain monitoring equipment, and implement environmental audit procedures as maybe specified in any environmental authorization issued pursuant to the Act.
- Establish and maintain records regarding such sampling, monitoring, and environmental auditing activities.
- Establish and maintain records regarding pollution control equipment on the premises (including records on control equipment parameters, production variables and other indirect data when direct monitoring is not required).
- Submit reports including compliance reports and provide such other information as the authority may require.

The EPA Act also allows for the development of regulations to govern environmental protection in Guyana. In 2000, five different Regulations are under the Act as follows:

- Environmental Protection Water Quality Regulations
- Environmental Protection Air Quality Regulations
- Environmental Protection Hazardous Wastes Management Regulations

- Environmental Protection Noise Management Regulations
- Environmental Protection (Authorization) Regulations 2000

Environmental Authorisation (Permitting) Process under the EPA

The Regulations also outline the procedure and requirements for issuing Environmental Authorizations (Permit) for any developmental activity which may have adverse impacts on the environment. Due to the nature of the proposed project and the potential negative impacts that the installation of solar PV farms and associated energy storage systems may have on the environment if not properly managed, the Project is required to have an Environmental Authorisation which will stipulate permitted conditions for ensuring and maintaining environmental integrity of the area during the operational phase of the project.

Environmental Protection (Air Quality) Regulations 2000

The Regulations outlines the allowable amount of air pollutants which may be emitted into the atmosphere. The Regulations require that any Developer involved in any construction, installation, operation, modification and/or extension of any facility that emits air contaminant must apply for an environmental authorization from the EPA. The Regulations also include the air contaminants for which parameter limits are to be established. Currently, no emission limits have been established in Guyana; nevertheless, this project seeks to ensure that the air contaminants emitted during all phases are controlled and restricted to a minimum value through comparison with international guidelines. Previously, the US National Ambient Air Quality Standards were used as the appropriate guidelines, however, the Developer will be guided by the ambient air quality standards recommended and used by the EPA which is the World Health Organisation air quality guidelines for particulate matter ($PM_{2.5}$ and PM_{10}), ozone, nitrogen dioxide, sulphur dioxide and carbon monoxide.

Table 3: Recommended AQG levels and interim targets

Pollutant	Averaging time	Interim target				AQG level
		1	2	3	4	
$PM_{2.5}$, µg/m³	Annual	35	25	15	10	5
	24-hour[a]	75	50	37.5	25	15
PM_{10}, µg/m³	Annual	70	50	30	20	15
	24-hour[a]	150	100	75	50	45
O_3, µg/m³	Peak season[b]	100	70	–	–	60
	8-hour[a]	160	120	–	–	100
NO_2, µg/m³	Annual	40	30	20	–	10
	24-hour[a]	120	50	–	–	25
SO_2, µg/m³	24-hour[a]	125	50	–	–	40
CO, mg/m³	24-hour[a]	7	–	–	–	4

[a] 99th percentile (i.e. 3–4 exceedance days per year).
[b] Average of daily maximum 8-hour mean O_3 concentration in the six consecutive months with the highest six-month running-average O_3 concentration.

Table 4: AQGs for nitrogen dioxide, sulphur dioxide and carbon monoxide (short averaging times)

Pollutant	Averaging time	Air quality guidelines that remain valid
NO_2, µg/m³	1-hour	200
SO_2, µg/m³	10-minute	500
CO, mg/m³	8-hour	10
	1-hour	35
	15-minute	100

Source: (World Health Organisation, 2021)

Environmental Protection (Hazardous Waste Management) Regulations 2000

The Regulations were developed with the primary aim of protecting the environment by controlling the discharge of hazardous waste materials. The Regulations require that any

Developer involved in any operation that generates, transports, treats, stores or disposes of hazardous waste must apply for an Environmental Authorisation. The Regulations also outline the provisions for reporting, record keeping, emergency preparedness planning and transportation of hazardous waste, while at the same time encouraging that Developers utilize appropriate disposal and/or treatment mechanisms of hazardous waste identified in the Regulations.

It is the intention of this project to ensure that all possible precautionary measures are observed in the different stages of development including the operation of the various subsystems. This will be done to ensure that the integrity of the environment is protected and that all workers and nearby residents are protected from any potential negative health-related implications.

Environmental Protection (Noise Management) Regulations 2000

These Regulations seek to manage and control noise emission levels within Guyana. It is required that any Developer involved in any construction, installation, operation, modification and/or extension of a facility that emits noise must apply for an Environmental Authorisation from the EPA. The Regulations also stipulate that noise decibel levels are not to be greater than the established permissible noise levels/limits of the GNBS which have been adopted by the EPA. All measures should be taken to ensure that there is adherence to the stipulated noise regulations by implementation of measures, where necessary, to maintain minimal noise levels to protect the environment, to safeguard the health of workers and residents within and around the project site.

Table 5: Guyana National Bureau of Standards Guideline Values for Noise in Specific Environment

Categories	**Daytime Limits in dB (06:00 – 18:00h)**	**Night-time Limits in dB (18:00 – 06:00h)**	
Residential	75	60	
Institutional	75	60	
Educational	75	60	
Industrial	100	80	
Commercial	80	65	
Construction	90	75	
Transportation	100	80	
Recreational	100	18:00- 01:00hr	100
		01:00- 08:00hr	70

Source: (GNBS 2010)

Environmental Protection (Litter Enforcement) Regulations 2013

Under the Regulations, persons who are found guilty of littering will be charged. The Regulations are enforced by the EPA through its recently established Enforcement and Compliance Division. The Litter Regulations address among other aspects, litter offences, penalties and the power of the local authority to enter premises and to remove

derelict vehicles. Under the Litter Regulations, it is an offence to litter in a public place, particularly:

a. To deposit litter in a public place.
b. To deposit litter from a moving vehicle unto a public place.
c. To cause or permit persons to commit offences 1 and 2 above.

Adherence to the stipulated litter enforcement regulations should be maintained by implementation of measures where necessary to protect the environment from solid waste pollution at the project sites.

Codes and Guidelines

National Grid Code

The National Grid Code by GPL outlines two objectives of the general conditions which are to ensure, insofar as it is possible, that the various sections of the grid code work together for the benefit of GPL and all users and to provide a set of principles governing the status and development of the grid code and related issues as approved by regulatory authority. The general conditions and the grid code apply to GPL and to all parties interconnected to the GPL system. The Grid Code comprises five distinct codes are as follows:

- Planning code

The Planning Code defines the criteria and procedures employed by GPL in evaluating the performance of its power system and the reinforcements necessary to maintain reliability. The overarching objective of the Planning Code is to set the minimum planning criteria that will be used as the basis for the expansion of the transmission network to reliably attend current and future loads while considering the need to minimize operating costs and capital investments.

- Interconnection Code

The Interconnection Code defines the requirements and processes that any Independent Power Producers (IPP) or GPL Generation Projects must comply with to interconnect new (or modified) generation to the GPL System. The information on the procedures, forms, requirements, timelines, fees and pro-forma standardized interconnection contracts is presented, along with the steps required in the interconnection process.

- Operational code

The Operational Code includes the criteria, procedures and information requirements necessary to execute the operational planning, the generation dispatch and coordination supervision and control of integrated operation of the GPL System. The Operating Code will procure a reliable and safe supply of energy and power demand by using the available resources in the most efficient and economical way. It will also define the procedures for the reporting and information exchange between the different entities connected to the GPL System.

- Minimum Technical Requirements (MTRs)

This Code defines the technical specifications and requirements that must be complied with by any new generation facility that will interconnect to the GPL System. It is critical to Renewable Generation Facilities (RGFs), since there are specific technical requirements that are required to address RGFs inherent variability, uncertainty, and limited dispatchability. On the other hand, complying with the Minimum Technical Requirements for conventional generation resources is normally less challenging, however they must also comply with the MTRs.

- Metering Code

This defines the regulations and technical aspects related to metering within the GPL System. The requirements are complimentary to the metering and data exchange requirements of agreements between persons to whom this code applies and the Distribution Code. The objectives of the metering code are to establish the standards to be met in the provision, location, installation, operation and maintenance of metering systems. It also defines the responsibilities of each person bound by this code in relation to ownership and management of metering systems and meters and the provision, use, and storage of meter data.

Permits and Approvals

The implementation and operation of the solar PV farm project are governed by national environmental, utility, and occupational safety regulations. All necessary permits and approvals must be obtained and maintained in accordance with the applicable laws of Guyana.

Table 6: Permits and approvals required for the operational phase

No.	Permit/Approval	Issuing Authority	Purpose / Description	Status
1	**Environmental Authorisation**	Environmental Protection Agency (EPA), Guyana	Required under the *Environmental Protection Act, Cap. 20:05* for the operation of facilities with potential environmental impacts.	Obtained / Pending
2	**Operational Environmental and Social Management Plan (OESMP) Approval**	Contractors	Approval of the OESMP as part of the project's environmental compliance requirements.	To be submitted
4	**Waste Disposal Permit**	Environmental Protection Agency (EPA) / Local Sanitation Authority	Authorizes the collection, transport, and disposal of solid and hazardous wastes generated during operations.	Obtained / Pending
5	**Fuel Storage and Handling Permit**	Guyana Fire Service / EPA	Approval for on-site storage of diesel fuel for backup generators, including safety and containment requirements.	Obtained / Pending
7	**Electrical Generation Licence / Interconnection Approval**	Guyana Power and Light (GPL)	Required for the operation and grid interconnection of the solar PV system.	Obtained / Pending
8	**Occupational Health and Safety Compliance**	Ministry of Labour, Occupational Safety and Health Department	Ensures compliance with workplace safety and health regulations for staff and contractors.	Ongoing

Relevant International Standards and Guidelines

These operational policies serve as a set of standards that include social and environmental safeguards applicable to all the Inter-American Development Bank-Financed Projects for which sustainability is paramount. These standards must be observed by all Bank personnel and serve as a guide for the identification of potential

social and environmental impacts (IDB, 2022). The key requirements for the IDB Environmental and Safeguards Compliance Policy (OP-703) that are relevant to this project are as follows:

Directive B1: The Bank will only finance operations and activities that comply with the directives of this policy and are consistent with the relevant provisions of other Bank policies.

Directive B2: The Bank will require the Borrower for that operation to ensure that it is designed and carried out in compliance with environmental laws and regulations of the country where the operation is being implemented, including national obligations established under ratified Multilateral Environmental Agreements.

Directive B3: All operations financed by the Bank will be screened early in the preparation process and classified according to their potential environmental impacts.

Directive B4: In addition to risks posed by environmental impacts, the Bank will identify and manage other risk factors that may affect the environmental sustainability of its operations. These risk factors may include elements such as the governance capacity of Executing Agencies/Borrower, sector-related risks, risks associated with highly sensitive environmental and social concerns, and vulnerability to disasters.

Directive B5: Preparation of Environmental Assessments (EA) and associated management plans and their implementation are the responsibility of the Borrower. The Bank will require compliance with specified standards for EIAs which includes as a minimum screening and scoping for impacts; timely and adequate consultation and information dissemination process; and examination of alternatives including a no project scenario. The EIA should be supported by economic cost benefit assessments of the project's environmental impacts and/or the associated protection measures.

Directive B6: As part of the environmental assessment process, Category A and B operations will require consultations with affected parties and consideration of their views. Consultations with other interested parties may also be undertaken to consider a broader range of expertise and perspectives. Category A operations will be consulted at least twice during project preparation, that is, during the scoping phase of the environmental assessment or due diligence processes and during the review of the assessment reports. For Category B operations, affected parties must be consulted at least once, preferably during the preparation or review of the ESMP as agreed with the Borrower.

Directive B7: The Bank will monitor the Executing Agency/Borrower's compliance with all safeguard requirements stipulated in the Loan Agreement and project operating or credit regulations.

Directive B9: The Bank will not support operations, that in its opinion, significantly convert or degrade critical natural habitats or that damage critical cultural sites. Whenever feasible Bank-financed operations will be sited on lands already converted. In addition, the Bank will not support operations involving the significant conversion or degradation of natural habitats unless there are no feasible alternatives acceptable to the Bank; comprehensive analysis demonstrates that overall benefits from the operation substantially outweigh the environmental costs; and mitigation and compensation

measures are acceptable to the Bank – that is, they are adequately funded, implemented and monitored.

Directive B10: The production, procurement, use and disposal of hazardous material and substances should be avoided whenever possible and minimized in other cases to avoid adverse impacts to the environment, and human health and safety.

Directive B11: Bank-financed operations will include, as appropriate, measures to prevent, reduce, or eliminate pollution emanating from their activities.

Directive B17: Where agreed with the Borrower, suitable safeguard provisions for procurement of goods and services in Bank-financed projects may be incorporated into project-specific loan agreements, operating regulations and bidding documents as appropriate to ensure environmentally responsible procurement.

The key requirements for the IDB Disaster Risk Management Policy (OP-704) that are relevant to this phase of the project are as follows:

Directive A2: Bank-financed public and private sector projects will include the necessary measures to reduce disaster risk to acceptable levels as determined by the Bank because of generally accepted standards and practices. The Bank will not finance projects that according to its analysis would increase the threat of loss of human life, significant human injuries, severe economic disruption or significant property damage related to natural hazards.

The key requirements for the IDB Operational Policy on Gender Equality in Development (OP 761) that are relevant to this project are as follows:

A. The Bank will actively seek opportunities to mainstream the gender perspective as a strategic dimension of its development interventions and will incorporate actions to address the issue. Within the context of the policy, gender mainstreaming is the process that seeks to have general equality and the needs of women and men be heard and addressed in the design, implementation, monitoring and evaluation of the Bank's interventions with special emphasis on public and private sector loan operations within the institution.

B. Gender equality mainstreaming will be applied systematically in all Bank development interventions. The Bank will require an analysis of its interventions' potential contribution to general equality. When the analysis so indicates, the Bank will incorporate specific actions to strengthen that contribution.

C. The Bank will conduct its financial operations to identify and address adverse impacts and the risk of gender-based exclusion, include women and men in consultation processes, and comply with applicable legislation relating to equality between men and women. Its financial operations must, throughout all phases of the project cycle adhere to the safeguards set forth in the policy.

D. In designing its operations, the Bank will introduce measures to prevent, avoid, or mitigate any adverse impacts and/or risks of gender-based exclusion identified in the project risk analysis. These risks may include introducing unequal requirements for access to project-derived economic opportunities and benefits, including paid work,

training, and credit or business opportunities. Projects will apply the principles of non-discrimination, equal treatment and equal pay for work.

E. In its project-related consultations, the Bank will seek the inclusion of the women and men affected in a gender-sensitive and socio-culturally appropriate manner.

The key requirements for the IDB Operational Policy on Indigenous Peoples (OP-765) that are relevant to this project are as follows:

A. In its efforts to facilitate dialogue and support the mainstreaming of indigenous issues, the Bank will seek to address the various facets of development with identity, as far as feasible and appropriate. Of particular importance is support for the participation and leadership by and protection of women, the elderly, youth and children and for the promotion of equal rights.

B. The Bank will conduct its operations in a way that prevents or mitigates direct or indirect adverse impacts on indigenous peoples or their individual and collective rights or assets.

C. The Bank will respect for the rights of indigenous peoples and individuals as established in the applicable legal norms according to their relevance to the Bank operations.

Institutional Responsibility of Project Executing Agency

The GUYSOL Program will be executed and monitored by a Project Executing Unit (PEU) under the GPL during the construction and operational phases. To strengthen and avoid potential risks while managing the project, IDB will share recommendations based on experience and skills of GPL. Capacity strengthening activities like organizational arrangements inclusive of the appointment of key staff and consultants will be carried as needed. Implementation of all environmental and social obligations under the Program is dedicated to the Agency's Monitoring, Environmental and Social Management and Communication Department to ensure environmental and social compliance, all environmental and social obligations to the Project and communities including the Grievance Redress Mechanism.

The PEU is responsible for ensuring that all permits remain valid throughout the operational phase. Renewal applications should be submitted prior to expiration. Copies of permits and associated conditions are kept on-site and made available for inspection, and any new or amended activities are within the stipulations of permit. Additionally, the management structure of GPL facilitates a unit related to Quality, Health, Safety, Environment Management (QHSE) Division. These management procedures are supported by the accreditation of ISO 9001 (ISO 9001:2015 - Quality Management System Implementation & Audit).

GPL's Environmental Policy

With the requirements set forth in ISO 14001:2015 Standard for Environmental Management Systems. We are specifically committed to:

1. The prevention of pollution, including greenhouse gases and the unintended release of hazardous substances that could harm the land, water or air.
2. To the preservation of natural and social environment by ensuring GPL's generating activities do not cause damage or degradation.

3. To complying with all legal and other requirements, inclusive of the Guyana Act No. 11 of 1996 Environmental Protection Act and the Environmental Protection Agency's Authorization Permit.
4. To a sustainable energy future and greater energy security by progressively introducing.
5. Renewable energy as an alternative to fossil fuels.
6. To safe and sustainable methods for the management of waste.
7. To ensure that all employees are trained and competent to fulfil the vision of GPL.
8. To continuously improve our Environmental Management System, to improve our Environmental Performance.

Table 7: GPL's Compliance Strategy in relation to relevant Legislation

Category	Legislation	Compliance Strategy
Legislative provisions	State Lands 1903	GPL will ensure land compliance with the Guyana Lands and Surveys Act
	Guyana Energy Act 2014	GPL shall ensure compliance by supplying clean energy solutions while contributing to climate change mitigation.
Environment/Health and Safety related Provisions	Constitution of the Cooperative Republic of Guyana Act 1980	GPL shall ensure environmental and sustainable development, and all measures will be taken to conserve and improve the existing environment.
	GPL's Health & Safety Policy	GPL shall ensure compliance by implementing measures to protect employees from workplace hazards, providing training, maintaining records and following specific requirements for safety equipment, hazards and emergencies.
	Occupational Safety and Health Act, No. 32 of 1997	
	GPL's Environmental Policy	GPL shall ensure compliance by preventing pollution complying with environmental laws, promoting renewable energy, ensuring safe waste management, training employees, and continuously improving environmental management
	Environmental Protection Act 1996	GPL shall ensure compliance with all the environmental regulations under the Act.
	Environmental Operational Permit	GPL shall ensure compliance with the stipulations within the Environmental Permit
Regulations	Environmental Protection (Water Quality) Regulations 2000	GPL shall that there is no discharge of effluent from the project into the environment.

	Environmental Protection (Hazardous Wastes Management) Regulations 2000	GPL shall ensure Hazardous waste is stored in appropriately labelled containers and a designated area prior to disposal by authorized contractor.
	Environmental Protection (Noise Management) Regulations 2000	GPL shall ensure Noise levels will be in accordance with GNBS Industrial Limits, i.e. Daytime: 100dB (6:00hrs to 18:00hrs) Nighttime: 80dB (18:00hrs to 6:00hrs)
	Environmental Protection (Litter Enforcement) Regulations, 2013	GPL shall adhere to the provisions of the Environmental Protection (Litter Enforcement) Regulations 2000. Burning is strictly prohibited on site.
Local Standards	Guyana National Bureau of Standards (Noise)	GPL shall ensure compliance with the permissible limits set for noise, water and septage.
	Guyana Fire Service Safety Certificate	GPL shall ensure the maintenance of Certification and installation of required firefighting equipment.
Strategies	Low Carbon Development Strategy 2009 Green State Development Strategy Framework 2017	GPL shall ensure compliance with the Strategy by utilizing renewable energy sources to meet the energy demands of consumers while reducing Green House Gas emissions.

POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

During the operational phase, the solar PV farm is expected to have minimal environmental and social impacts compared to conventional energy facilities, given its reliance on clean, renewable energy. However, certain operational activities may still result in localized or indirect impacts that require ongoing management and monitoring.

Table 8: Expected Environmental and Social impacts during Operational Phase

Activity	Potential Environmental/Social Impact	Risk	Opportunities	Significance
Solar Power Generation The PV modules, inverters, and transformers operate continuously to convert sunlight into electricity for distribution to the national grid. This activity includes routine monitoring of system performance, fault detection, and efficiency checks to ensure reliable and safe operation.	Land use and habitat alteration; soil compaction; runoff; noise; heat; minor component waste	Loss of vegetation, disturbance to fauna, soil erosion, minor water contamination, low-level noise affecting nearby wildlife, visual impact	• Contributes to national renewable energy targets and greenhouse gas reduction. • Decreases dependency on fossil fuels. • Demonstrates clean energy leadership and supports Guyana's Low Carbon Development Strategy (LCDS).	Medium
Panel Cleaning Regular cleaning of solar panels removes dust, bird droppings, and other debris that may reduce energy output.	Water use, runoff with sediment or cleaning agents	Soil or water contamination, excessive water use	• Maintains optimal energy efficiency of panels, maximizing power output. • Promotes water conservation practices through use of rainwater harvesting.	Low
Equipment & Infrastructure Maintenance Maintenance activities involve inspection, servicing, and repair of inverters, transformers, wiring, mounting structures, and control systems.	Handling of oils, lubricants, small electrical parts; minor waste generation	Soil or water contamination, improper disposal of used parts	• Enhances system longevity and reliability. • Develops technical capacity and skills in renewable energy operations. • Encourages safe work practices and technological innovation.	Low

Activity	Potential Environmental/Social Impact	Risk	Opportunities	Significance
Generator Operation & Fuel Storage Diesel generators provide backup power during grid outages or maintenance periods.	Diesel fuel storage and combustion; noise; emissions	Air pollution (CO_2, NO_x, particulates); risk of soil or water contamination from spills; noise disturbance	• Ensures energy continuity and operational reliability during outages. • Reinforces safety management and emergency preparedness practices.	Low
Vegetation Management Grass cutting and shrub trimming are performed periodically to prevent shading of panels, reduce fire risk, and maintain site accessibility.	Cutting or trimming vegetation	Soil erosion, disturbance to local flora and fauna, reduced habitat cover	• Maintains site aesthetics and accessibility. • Supports biodiversity management through selective vegetation control.	Low
Waste Management Waste includes general office waste, packaging, used oils, filters, and electronic components.	Solid waste, hazardous waste, e-waste generation	Land and water pollution if not properly handled	• Encourages good practice and environmentally friendly behaviour	Low
Water Use & Storage Water is primarily used for panel cleaning and staff facilities.	Panel washing, domestic water consumption	Overuse of water resources; contamination from storage tanks	• Encourages efficient use of water and conservation practices. • Enhances sustainability credentials of the facility.	Low
Vehicle & Machinery Movement Light vehicles and maintenance equipment are used to transport personnel, materials, and tools within the site.	Movement for inspections and maintenance	Dust generation, fuel emissions, minor soil compaction	• Enables regular inspections and early detection of faults.	Low

Activity	Potential Environmental/Social Impact	Risk	Opportunities	Significance
Site Security and Access Control Monitoring of the site to prevent theft, vandalism, or unauthorized entry.	Fencing, lighting, patrolling	Light pollution; minimal habitat disturbance	• Provides local employment for security personnel. • Ensures asset protection and operational safety. • Enhances community trust through safe and transparent site management.	High
Occupational Health, Safety, and Environmental (HSE) Management Routine HSE activities include staff training, toolbox talks, use of personal protective equipment (PPE), emergency preparedness drills, and incident reporting.	Staff and contractor activities	Risk of accidents, minor spillages	• Builds a strong safety culture and workforce awareness. • Reduces incident rates and improves staff morale. • Opportunity for continuous training and certification in HSE practices.	Medium
Environmental and Performance Monitoring Monitoring Monitoring involves measuring key parameters such as waste generation, water use, runoff quality, noise levels, and energy performance.	Collection of environmental data	Minimal physical disturbance	• Enables early detection of environmental deviations. • Provides valuable data for future solar farm designs. • Demonstrates compliance and transparency with regulators and stakeholders.	Low
Stakeholder Engagement and Grievance Management Ongoing communication with local communities and authorities ensures transparency and trust.	Communication with communities	Miscommunication leading to grievances	• Strengthens relationships with surrounding communities. • Builds social acceptance and corporate reputation.	Low

			• Creates opportunities for community development and local partnerships.	
Activity	**Potential Environmental/Social Impact**	**Risk**	**Opportunities**	**Significance**
Flooding Flooding may occur during heavy rainfall or due to poor site draining.	Soil erosion, sediment runoff, water contamination, damage to infrastructure, health and safety risks	Operational downtime, equipment damage, community grievances	• Improved water management through the development of an effective drainage and stormwater control system • Positive community engagement through collaboration with local authorities on drainage improvement	High
Earthquake Natural seismic events may cause ground vibrations or structural movement affecting foundations, supports and electrical systems of the solar PV installations.	Structural damage to equipment, risk of electrical fires or energy disruption, worker injury, temporary power outages	Operational downtime, equipment damage, community grievances	• Strengthened infrastructural resilience • Enhanced work safety training and preparedness	Low
Windstorm Strong winds, storms can impact solar panels, mounting systems and site infrastructure.	Damage or displacement of solar panels and equipment, flying debris, service disruption,	Operational downtime, equipment damage, community grievance, secondary hazards like fires from electrical breakage,	• Improved engineering designs • Strengthened collaboration with local disaster management agencies	Medium

Environmental and Social Management Measures

Table 9: Mitigation measures, responsibility and estimated costs under the OESMP

Impact	Mitigation Measures	Monitoring Indicators	Responsibility	Estimated yearly cost (USD) per site
Noise	• Use of padding/noise isolators for equipment. • Maintenance of equipment in accordance with manufacturer's specification, i.e. the transformer	• Monitoring of sound levels as required in the Environmental Permit	• Environmental Management (PEU) • HSE Department (GPL) inspection per quarter	150
		• Equipment maintenance records according to schedule	• Specialized Equipment / Substation Maintenance Department	
Soil contamination	• Storage of waste materials into a designated and labelled container and disposal through EPA authorised facilities • Implementation and training of maintenance procedure for transformers • Provision of spill kits at relevant locations • No use of hazardous chemicals for vegetation management	• Environmental Inspection Checklists and Reports	• Environmental Management (PEU) • HSE Department (GPL) inspection per quarter • Facilities Department	500
		• Required List of Spill Clean-up Materials / Environmental Inspection Checklists and Reports / Spill Report	• Generation Department	100
		• Environmental Inspection Checklists and Reports	• Environmental Management (PEU) • HSE Department (GPL) inspection per quarter • Facilities Department	
Solid waste generation	• Waste generated will be disposed of in an authorized landfill.	• Environmental Inspection Checklists and Reports	• Environmental Management (PEU)	10,000

	• The site will be furnished with bins for the disposal of domestic waste. • Hazardous waste such as spent oil, oily rags, etc. will be stored on site separately in labelled containers and disposed of according to the Waste Management Plan. • Burning of waste on-site is prohibited. • Arrangements will be made for the weekly collection of domestic and other waste. • Site and immediate surroundings cleanliness will always be maintained.	• Complaints Records	• HSE Department (GPL) inspection per quarter • Facilities Department Facilities Department	
Impact	**Mitigation Measures**	**Monitoring Indicators**	**Responsibility**	**Estimated yearly cost (USD) per site**
Surface water pollution	• Bi-weekly maintenance of drainage system. • Arrangements will be made for the weekly collection of sanitary waste. • Operation and management of septic tank in accordance with	• Environmental Inspection Checklists and Reports • Complaints Records	• Environmental Management (PEU) • HSE Department (GPL) inspection per quarter • Facilities Department	Pricing for sanitary waste collection will likely depend heavily on variables such as number of bins required, frequency of servicing, type of premises (office, hotel, factory), volume of

	GNBS Code of Practice for the Design and Construction of Septic Tanks and Associated Secondary Treatment and Disposal Systems. • If/When, collection of waste from septic tank will be done by an EPA approved contractor.			waste, contract length, location, etc.
Groundwater pollution	• Transformer oil spills and other site contaminants will be rapidly cleaned up with the aid of a spill kit • Arrangements will be made for the weekly collection of sanitary waste • Operation and management of septic tank in accordance with GNBS *Code of Practice for the Design and Construction of Septic Tanks and Associated Secondary Treatment and Disposal Systems*. • Collection of septage by EPA approved contractor	• Environmental Inspection Checklists and Reports • Complaints Records	• Environmental Management (PEU) • HSE Department (GPL) inspection per quarter • Facilities Department Specialized Equipment / Substation Maintenance Department • Facilities Department	Pricing for sanitary waste collection will likely depend heavily on variables such as number of bins required, frequency of servicing, type of premises (office, hotel, factory), volume of waste, contract length, location, etc.

Natural Habitat	• Installation of perch deterrents on the new transmission lines	• Environmental Inspection Checklists and Reports	• Transmission & Distribution	• TBD
Impact	**Mitigation Measures**	**Monitoring Indicators**	**Responsibility**	**Estimated yearly cost (USD) per site**
Health and Safety	• Health and Safety Monitoring Plan • Quarterly Health and Safety Inspection	• Health & Safety Inspection Checklists and Report • Health & Safety Monthly Reports	• Environmental Management (PEU) • HSE Department (GPL) inspection per quarter • Facilities Department	• 150
Flooding	• Design and maintain effective surface drainage and stormwater management systems. • Elevate electrical components above flood level. • Conduct regular inspection and clearing of drainage channels. • Develop and implement a flood response and maintenance plan.	• Functionality of drainage systems • Number of flood related incidents • Records of drainage maintenance and inspections •	• Site Engineer • HSE Department (GPL) inspection per quarter • Facilities Department	• 2000 (maintenance)
Earthquake	• Train workers in emergency and evacuation procedures	• Records of staff emergency training • Earthquake response procedures available on site	• Site Engineer • HSE Department (GPL) inspection per quarter • Facilities Department	• 1000 (training)

	• Regular inspection on foundations and structural joints			
Windstorm	• Periodically inspect and tighten bolts and panel supports • Maintain vegetation or barriers to reduce wind erosion	• Inspection and maintenance logs • Records of windstorm damage or downtime • Availability of storm procedures	• Site Engineer • HSE Department (GPL) inspection per quarter • Facilities Department	• 4000 (response equipment)

IMPLEMENTATION OF THE OESMP

The Operational Environmental and Social Management Plan is essential for ensuring that a project operates in an environmentally responsible and socially sustainable manner. It provides a structured framework for managing and monitoring environmental impacts, occupational health and safety, and community relations during the operational phase. By defining clear mitigation measures, responsibilities, and monitoring requirements, the OESMP ensures compliance with national regulations and international standards, protects ecosystems and ensures the health and safety of staff and surrounding communities.

Upon approval, the OESMP will be implemented throughout the deployment of five of the eight utility-scale solar PV farms and associated battery energy storage systems.

Table 10: Roles and responsibilities of operational staff

Specific Role	Responsibilities	Contact Information
Generation, O&M and Contracts Manager	1. Managing and controlling daily operations of solar farm 2. Facilitate any inspections, maintenance and visits to the solar farm	
Site Supervisor	1. Overseeing daily operations 2. Supervision of on-site staff 3. Enforcing safety and environmental protocols 4. Collection and processing of grievances from on-site personnel 5. Communication to generations manager and other associated managers 6. Facilitating subcontractors	
On-site Personnel	1. Conducting daily operations of solar farm 2. Commit to safe and environmentally sound work 3. Reporting of any irregularity of daily operations to the site supervisor.	
Environmental Management (PEU)/ HSE Department (GPL)	1. Enforce Safety Policies 2. Health and safety awareness & training 3. Hazard identification and risk mitigation 4. Rectify unsafe practices and conditions 5. Accident/ Incident Investigation 6. Inspect safety equipment at the site	

	7. Compliance monitoring and reporting	
Environmental Management (PEU)/ HSE Department (GPL)	1. Enforce Environmental Policies 2. Environmental awareness and training 3. Hazard identification and risk mitigation 4. Developing and implementing environmental management plan 5. Rectify unsafe environmental practices and conditions 6. Environmental assessments, inspections, compliance monitoring and reporting 7. Environmental Incident Investigation 8. Providing legal guidance and expertise	
Transmission & Distribution Staff	1. Operate and maintain power-regulating equipment and networks of high-voltage power lines that send electricity from power plants to domestic, industrial, and commercial users	
Specialized Equipment /Substation Maintenance Staff		
Facilities Staff	1. Facility maintenance planning Coordinating and executing structural maintenance, renovations and refurbishments to the facility 2. Ensuring that basic facilities are well- maintained and conducting proactive maintenance	

Monitoring and Evaluation

The M&E system ensures that environmental and social mitigation measures are effectively implemented, operational activities comply with legal and regulatory requirements like the EPA Act and Regulations and the GNBS standards. It also ensures that performance indicators are tracked, and corrective actions are taken.

Approach

Recordings of all monitoring exercises will be maintained by the Health and Safety and Environmental Management Departments. Inspection reports will be prepared and sent to relevant personnel, within five (5) working days, for implementation of corrective actions if necessary. GPL will regularly review and update the O-ESMP, based on monitoring results, technological advancements, and changes in regulatory requirements, to enhance environmental performance.

Grievances will be addressed by GPL's Monitoring, Environmental and Social Management and Communication team (PEU) as well as Human Resources, Health and Environmental and Social Departments (GPL- if needed) in relation to the type of grievance lodged. The respective departments will maintain detailed records of monitoring, mitigation activities, complaint response and compliance efforts for reporting purposes.

GPL will prepare and submit annual reports, on or before March 31 of each year, to the EPA as is required by the Environmental Permit. The annual report will address environmental performance and compliance with the Environmental Permit and the O-ESMP objectives.

Site inspections, utilizing inspection checklists, will be conducted quarterly by GPL's Environmental Management Department and Health and Safety Department to ensure that the environmental and health and safety regulations are adhered throughout the project lifecycle. Inspections reports will be submitted to top management and relevant personnel for action of any corrective measures. See Section 9. for the Environmental and Social Monitoring Plan.

There is also an established mechanism for collecting feedback from stakeholders in the form of a Grievance Redress Mechanism and a Monitoring Checklist.

Table 11: Environmental, Health & Safety Monitoring Plan

Environmental and Social Aspect	Monitoring Activities	Frequency	Parameters	Corrective Measures
Noise	• Noise level readings will be taken utilizing calibrated Type 2 sound level meters • Complaint Form / Grievance Mechanism	Bi-annual Inspections	Noise levels above the recommended limits: Industrial Limits: 100 dB (Day time (06:00h - 18:00h) 80 dB (Night-time (18:00h - 06:00h) More than 5 daily complaints related to noise	• Any noise-producing equipment will be equipped with silencers/mufflers. • Equipment will be maintained and operated by the GPL's personnel within the scope of the equipment specifications. • Use of PPE where applicable. • Established areas away from site boundaries, particularly boundaries close to sensitive environments, for noisy
Soil and Water	• Observation of soil and vegetation conditions • Oil spill records verification • Verification of site order and aesthetics • Verification of Solid waste and septage collection delivery note • Verification of number of garbage receptacles on site	Bi-annual Inspections	• Water pooling at the site • Evidence of soil or vegetation contamination at the site • Reported oil spill incidents • Reported non-compliance with regards to waste management • Solid waste polluting site or drainage • Evidence of mismanagement of septage / sanitary facilities.	• Established drainage shall be maintained to ensure free flow of effluent such as storm water. • Ensure implementation of the Waste Management Plan • Provision of a spill kit on site as well as trained personnel for usage of spill kit. • Spills will be immediately cleaned up by trained GPL staff on site. • Any service or maintenance of equipment shall be done on an impervious base and with

Environmental and Social Aspect	Monitoring Activities	Frequency	Parameters	Corrective Measures
Landscape & Visual Impact	• Visual Inspection of the PV panels and surround area • Verification of complaint records	Bi-annual Inspections	• Complaint records from aeronautical authorities	• Boundaries shall be maintained with adequate trees to provide a visual screen. • Stakeholder engagement with aeronautical authorities in the event of conflicts with flying airplanes/ objects.
Socio-Cultural and Infrastructure	• Verification of employment records • Verification of complaint records	Bi-annual Inspections	• Frequent complaints with regards to contracting local labour and disruption of services	• Timely and adequate public announcements with regards to any service interruptions because of maintenance.
Grievance Redress/Safety and Health	• Verification of complaint records • Verification of firefighting equipment • Verification on ground of vector control	Bi-annual Inspections	• Frequent complaints about health and safety of employees	• Occupational hazards shall be marked on site and staff trained on hazard recognition and, where applicable, emergency response. • Signage outlining potential hazards will be placed strategically around the facility. • Contact the relevant Town Councils, Vector Control Department, to arrange for the vector control measures to be implemented within the area.
Flooding	• Inspect and clear drainage channels and culverts • Monitor stormwater flow and	Monthly during dry season Weekly during rainy season or	• Drainage system functionality • Presence of sediment buildup or blockage • Incidents of standing water	• Clear blocked drains and culverts immediately • Regrade affected areas to restore drainage flow • Repair damaged embankments and structures

	waterlogging around site • Inspect elevated equipment and foundations during rainy season • Record any flood incidents and response actions	after heavy rainfall events	• Condition of elevated infrastructure	
Earthquake	• Inspect PV structures, mounting frames and transformers for cracks or displacement • Verify stability of foundations and joints • Check functionality of emergency alarms and evacuation routes	After any seismic event (≥ magnitude 4) Annual inspection of structural integrity	• Structural condition (cracks, shifts) • Cable connection flexibility • Staff awareness of emergency procedures	• Replace of reinforce damaged mounts or supports • Conduct immediate safety checks and shut down affected systems • Retrain staff on emergency evacuation
Windstorm	• Inspect panel mounts, bolts and fasteners • Assess damage to panels, roofs, and barriers after high wind events • Review availability and condition of emergency supplies	Monthly routine inspections After every major or storm event	• Integrity of solar panel supports • Signs of loosening or misalignment • Records of wind damage incidents • Readiness of emergency kits and response team	• Tighten or replace loose components • Repair or replace damaged panels • Reinforce vulnerable areas • Update emergency preparedness plan and train personnel

Training and Capacity Building

The objectives of training during the operational phase are to ensure staff and contractors have the knowledge and skills to operate the solar PV systems safely and efficiently. It will strengthen capacity to implement environmental and social safeguards and build awareness of workplace health, safety, and community engagement procedures.

Table 12: Target Groups for training

Group	Examples of Roles	Focus Areas
Management Staff	Project Manager, Site Supervisor	Environmental and social compliance, reporting, stakeholder communication, emergency preparedness
Technical Staff	Technicians, Engineers	Operation and maintenance, troubleshooting, safety, emergency preparedness
Environmental & Social (E&S) Personnel	Environmental Officer, HSE Officer	Monitoring, reporting, grievance handling, waste management
Contractors & Workers	Cleaning, security, maintenance	PPE, waste handling, site access protocols, emergency preparedness
Community Liaison	Community officers, local leaders	Stakeholder engagement, grievance redress, emergency communication

Training Framework

Training is divided into three levels:

a. Induction Training

- Conducted for all new employees and contractors
- Covers:
    - Overview of the solar PV project and its environmental commitments
    - Code of conduct and site rules
    - Emergency response and evacuation
    - Occupational Health and Safety (OHS) basics
    - Environmental protection measures (waste segregation, spill prevention)

b. Specialized / Technical Training

- Conducted for site supervisors, engineers, and O&M staff
- Topics:
    - PV system operation, maintenance, and fault diagnosis
    - Electrical safety and lock-out/tag-out procedures
    - Fire prevention and response for PV systems
    - Waste and effluent management
    - Incident reporting

Table 13: Environmental and Social Safeguards Training

Topic	Objectives	Frequency	Facilitator
Waste Management	Promote proper segregation and disposal	Quarterly	HSE Officer/ Environmental Specialist
Effluent & Spill Control	Train in spill response and containment	Semi-annual	HSE Officer/ Environmental Specialist
Biodiversity & Land Management	Protect flora/fauna near sites	Annual	Environmental Specialist
Community Engagement	Strengthen communication and grievance resolution	Annual	Monitoring, Environmental and Social Management and Communication team
Gender Sensitivity & Inclusion	Ensure fair participation and awareness	Annual	Social Management Specialist / HR

Table 14: Health and Safety Training

Topic	Content	Frequency
Occupational Safety	PPE use, fall prevention, electrical hazards	Quarterly
Emergency Preparedness	Fire drills, evacuation, first aid	Annual – drills every 6 months
Defensive Driving	Safe transport of staff and materials	Annual
Heat Stress & Ergonomics	Working in high-temperature environments	Semi-annual

Method

The training can take several mediums including in person sessions, on the job training, workshops and toolbox talks. It can be evaluated and monitored through attendance logs, feedback forms to evaluate content and trainer performance and performance indicators like percentage of staff trained vs. total workforce, reduction in environmental incidents and improvement in compliance audit scores. A budget should be allocated for training materials, PPE, external trainers (if needed) and transportation and refreshments.

To record and document the training, a register should be maintained which included information like names, topics, attendance, dates. Training materials and presentations should be archived for reuse and include training summary in Annual Environmental Report to EPA as stipulated in the Environmental Operation Permit.

Stakeholder Engagement and Grievance Mechanism

The IDB has recognized the need for systematic, transparent and meaningful stakeholder consultation processes to improve benefits to local communities and stakeholders and avoid delays in project design and implementation. Meaningful consultations, as a requirement of IDB policies, entail a two-way process of dialogue and engagement, instead of the one-way dissemination of information. One of ten key elements that have been identified by the IDB as critical to any meaningful stakeholder consultation process is the establishment of an appropriate and accessible grievance redress mechanism, which aims to address how stakeholders can seek remedy if they are of the opinion that the project is adversely affecting them or the environment.

Additionally, in areas where indigenous communities (if any), there is need for appropriate measures to ensure that any potential grievances are effectively addressed, and further provisions for redress in keeping with international requirements and best practices. The elements of an effective grievance and redress mechanism as described and illustrated by the IDB are presented below.

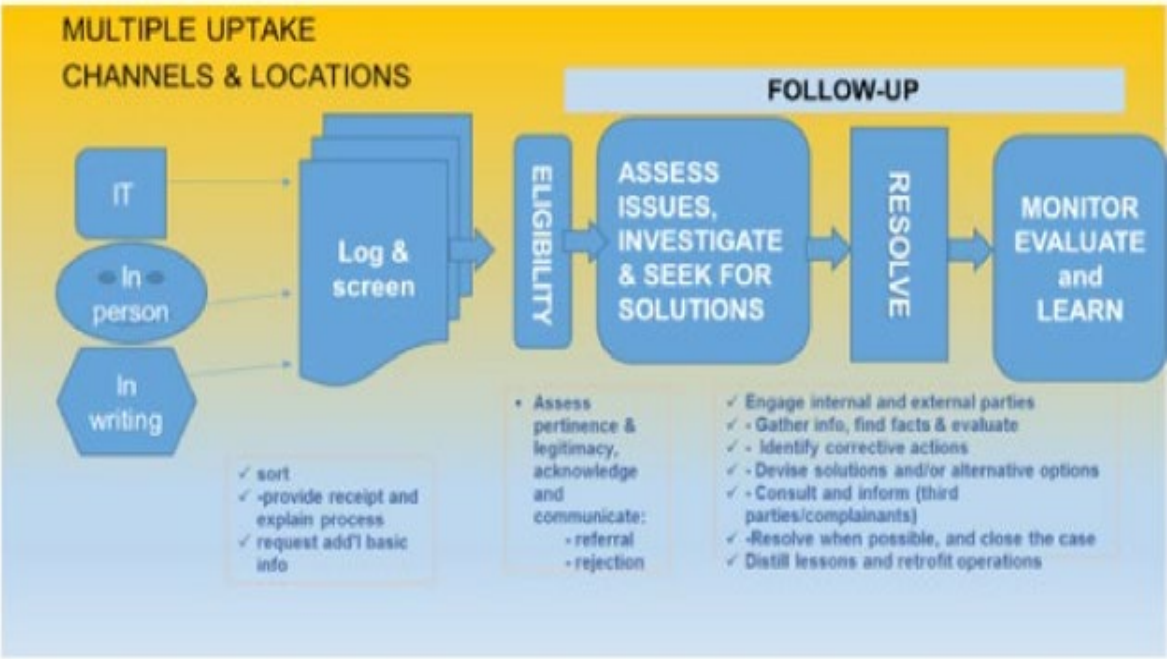

Figure 7: Elements of an Effective Grievance and Redress Mechanism
Source: (Meaningful Stakeholder Consultations (IDB, 2017)

Given that the project will be implemented at eight sites, a localized grievance process is the most appropriate approach. Elements of the Grievance Redress Mechanism proposed for the GUYSOL Project are:

- A designated Grievance Officer should be identified for each site, prior to the start of the project, to receive all complaints that may come in during the life of the project.
- Signposts with the contact details of the Grievance Officer should be placed at various prominent positions at the site to ensure that the public can easily access the information.

- In cases where complainants would prefer to remain anonymous, a grievance box can also be placed at the site to receive complaints.

For complaints that are submitted directly to the Grievance Officer, these can take the form of a letter or in cases where the complainant cannot read or write, particulars of the complainant and the grievance may be documented by the Grievance Officer in a Complaints Form.

- All the complaints received by the Grievance Officer should then be logged in a complaint register which should include the date of receipt of the complaint, the complainant's contact information, and the subject of the grievance and a description of the grievance.
- Once the complaints have been documented, these complaints can then be forwarded to the Site Supervisor on a bi-weekly basis for review and action. The complaints box at the site should also be checked at regular intervals and any complaints that are deposited in the box should also be logged and forwarded to the Site Supervisor along with other submissions.
- Once the complaints have been received by the Site Supervisor, the complaint should be reviewed and assessed within three days of receipt. Depending on the nature of the complaint, the Site Supervisor may need to consult with relevant personnel on site to determine whether the issues can be resolved at the site level.
- All complaints that can be resolved at the site level should be done within two weeks of receiving the complaint and the decision should be communicated to the complainant through the Grievance Officer.
- For complaints that cannot be addressed at the site level, these should be forwarded by the Site Supervisor to the PEU for review and action within two weeks. The decision made by the GPL should be communicated to the complainant at this time.
- In cases where the complaint is not addressed to the satisfaction of the complainant, both in terms of the decision or if the complaint is not resolved within the allocated timeframe, the complainant may approach the Regional Democratic Council (RDC) for redress in addressing the matter.

Currently, the RDC is the overarching local government body in region 5 with responsibility for the overall management and administration of the region. The RDC administers all services required within its boundaries including health, education and public works. Therefore, issues relating to the project can be directly reported to the RDC, which can act on behalf of the complainant for resolution within three weeks.

As it relates to Indigenous Peoples complainants, complaints can be directed through their respective Village Councils to the Community Development Officers (CDOs). The Ministry of Amerindian Affairs is responsible for enhancing the social, economic and environmental well-being of Indigenous Peoples, and their lands, and achieves its mandate through the deployment of 13 CDOs in the various sub-regions to monitor all

village activities and projects and address certain issues within their jurisdiction and within the purview of their job descriptions. Once these issues have been reported to the CDOs, they can then be forwarded to the Principal Development Officer (PDO) based at the Ministry of Amerindian Affairs (MoAA) for action. The PDO and other relevant personnel within the Ministry can then consult with the Ministry of Public Infrastructure and the Guyana Energy Agency on behalf of the complainant for resolution within three weeks. In other circumstances, indigenous people can also submit grievances directly to the Grievance Officer as explained previously who will forward it to the Principal Development Officer (PDO) at the MoAA.

- In cases, where the complainant is still not satisfied with the outcome of this process, the complainant may seek further redress in the High Court.
- For cases that require compensation, the affected person is entitled to compensation as determined by agreement between that person and the Government through the GPL. In the absence of an agreement, any compensation shall be determined based on the fair market value of the property by the High Court.
- For issues relating to the environment, the GRM will inform the complaint that the complainant can direct complaints to the Executive Director of the Environmental Protection Agency.

The EP Act mandates the EPA to conduct investigations and inspections to ensure compliance with the Act and its regulations and investigate complaints relating to breaches of their legal provisions. Depending on the nature of the complaint, the EPA may need to conduct site visits in collaboration with other regulatory authorities such as the Regional Authorities, Mayor and City Council and the Central Board of Health (Public Health Officers and Occupational Health and Safety Department) Ministry of Health, to determine the level of impact, and outline conditions and measures to ensure the expeditious resolution of the complaint and protection of the environment. For indigenous communities, these complaints can be directed to the EPA through the respective regional CDOs and the Ministry of Amerindian Affairs. The grievance and redress mechanism as described here is illustrated in the figure below.

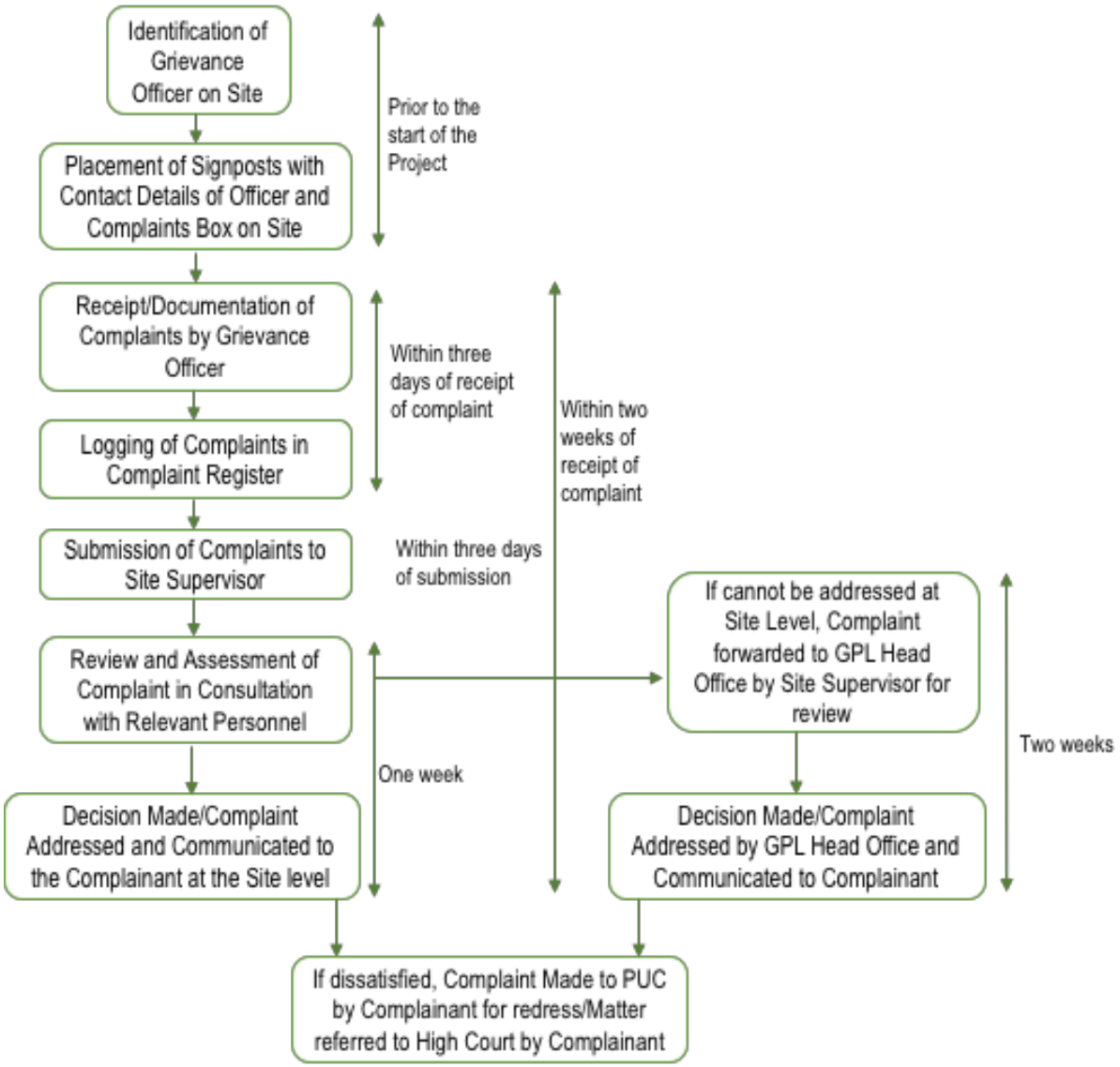

Figure 8: Overview of Grievance and Redress Mechanism Proposed under the GUYSOL Project

CONCLUSION

The *Operational Environmental and Social Management Plan* establishes the procedural and institutional framework for ensuring that the operation of the Solar Photovoltaic Farms is conducted in accordance with national regulatory requirements and international environmental and social safeguards. Its implementation guarantees that all operational activities are environmentally sustainable, technically sound, and socially responsible.

The Plan emphasizes continuous monitoring, training, and evaluation to maintain compliance with the *EPA*, the *GNBS*, and the *IDB* standards. It ensures the integration of environmental management into routine operational practices through defined mitigation measures, clear lines of accountability, and ongoing stakeholder engagement.

Through this OESMP, GPL reaffirms its commitment to:

- The prevention of pollution and the reduction of greenhouse gas emissions.
- The sustainable management of natural resources and biodiversity conservation.
- The protection of worker health, community safety, and social equity.
- The transparency and responsiveness of its environmental and social performance reporting.

The GUYSOL Project represents a significant milestone in Guyana's transition toward a low-carbon and climate-resilient energy system. By embedding environmental and social sustainability into its operations, the Project not only contributes to national energy security and economic growth but also strengthens Guyana's global leadership in renewable energy development.

The operationalization of this OESMP will ensure that the solar farms function safely, efficiently, and in harmony with the surrounding environment and communities, thereby supporting the long-term vision of a greener, cleaner, and more sustainable Guyana.

ANNEXES

ANNEX A: EMERGENCY RESPONSE PLAN

Table 15: GPL's Procedure for Emergency Response for a Solar Farm

Document Title	Standard Operating Procedure for Emergency Response at the Solar PV Farm
Document Number	GPL -xxx-xxx
Prepared By:	Details of Environmental/Social/Communication Officer/Specialist Signature: ..... Date: .....
Verified By:	Details of Divisional Director Signature: ..... Date: .....
Approved By:	Team Leader Signature: ..... Date: .....

1.0 TITLE:

Standard Operating Procedure for Emergency Response at the Solar Farms.

2.0 PURPOSE:

2.1 This procedure outlines responsive actions for incidents that may be encountered during the operational phase of the Solar Farms.

3.0 SCOPE:

3.1 This procedure is applicable to GPL Staff relevant to the operations of the Solar Farm for situations which require emergency response.

4.0 DEFINITIONS:

4.1 Accident: A deviation from normal operations or activities associated with a hazard, which has the potential to result in an emergency.

4.2 Emergency: A hazard impact causing adverse physical, social, psychological, economic or political effects that challenges the ability to rapidly and effectively respond. It requires a stepped-up capacity and capability (call-back procedures, mutual aid, etc.) to meet the expected outcome and commonly requires change from routine management methods to an incident command/management process to achieve the expected outcome.

4.3 Emergency Response Plan: The ongoing plan maintained by various management levels for responding to a wide variety of potential hazards. It describes how people and property will be protected; details who is responsible for carrying out specific actions; identifies personnel, equipment, facilities, supplies, and other resources available; and outlines how all actions will be coordinated

4.4 Hazard: A natural, technological or human-caused source or cause of harm or difficulty.

4.5 Incident: An occurrence or event – natural, technological, or human-caused – that requires response to protect life, property, or the environment. The size, scope and complexity of the incident may vary and will impact the type and duration of response and recovery efforts.

4.6 Response:

4.6.1 Individual – immediate actions taken by persons at or near the incident location to protect themselves, including evacuation and sheltering-in-place.

4.6.2 Institutional - immediate actions by trained groups (first responders, incident management teams) to save and sustain lives, protect property and the environment, and meet basic human needs. Response also includes the execution of plans and actions to support short-term recovery.

5.0 REFERENCES:

5.1 Environmental Operation Permit
5.2 GPL-OSH-005 Procedure for Evacuation in the Event of a Fire / Bomb Scare or Other Emergency at GPL,
5.3 GPL-OSH-002 Procedure for Industrial Accident Reporting, Recording and Investigating,
5.4 GPL-XXX-000 Procedure for Implementation of the Spill Report Form,
5.5 Diversification of the Energy Matric and Energy Security (GY-L1066) Environmental and Social Analysis Report.

6.0 DETAILS OF EMERGENCY RESPONSE PROCEDURE: (***Refer to narrative and tables***)
6.1 The Emergency Response Procedure will always be readily available and accessible to all personnel on site.

6.2 Training
6.2.1 GPL will ensure that all relevant staff are provided with training on the Emergency Response Procedure. See the table below for the training plan on the Emergency Response Procedure.

Table 16: Training Manual for Emergency Response Procedure

GPL Personnel	No. of Persons	Subject	Responsibility	Duration & Frequency	Mode of Training	Budget
Environmental Management Staff	5	Emergency Response Procedure	Environmental/Health and Safety Management Division GPL in collaboration with PEU	One day annually	In-person	
Health and Safety Staff	4					
On-site Staff	2					
Transmissions and Distribution						
Specialised Equipment/Substation Maintenance Staff						
Facilities Staff						

6.2.2 Training Records will be maintained by the HR Department. An evaluation of the trained staff will be conducted six (6) months after the training, and deficiencies will be recorded along with recommendations for improvement.

6.3 Category of Incident

6.3.1 Level 1: An incident has occurred and can be controlled by the facility personnel. The situation is under control.

6.3.2 Level 2: An incident has occurred; the situation is not under control but is confined to a small area or to a fixed-site and does not pose a threat of spreading to a larger area or off- site.

6.3.3 Level 3: An incident has occurred; the situation is not under control and protective action maybe necessary for the surrounding or offsite area.

6.3.4 Level 4: An incident has occurred, and the situation is not under control. Actions by more than first responders or facility personnel are necessary. An incident involving a severe hazard or a large area which poses an extreme threat to life and property and will probably require an evacuation.

Emergency Contact Details

6.4.1 The table below outlines the internal and external contact details in the event of an emergency.

Table 17: Emergency Contact Details

Organization	**Telephone Number**
Health and Safety Department (HS Officer: Mr. Kulunand Persaud)	227-4934, 608-3779
Environmental Management Department (Env. Officer: Ms. Arifea Hassan)	227-0233, 629-6896
GPL Main Office	231-4144
Berbice GPL Office (Corentyne/Coast)	333-2186
Essequibo GPL Office (Supenaam to Charity)	623-4014 (accessible 07:00–23:00) and 623-0123 (accessible 23:00–07:00)
Onderneeming Hospital (Essequibo)	226-7400
Charity District Hospital (Essequibo)	771-4243
Anamayah Memorial Hospital (Berbice)	322-3478 / 322-3474
Port Mourant Hospital (Berbice)	336-6095
Satro Medical Centre (Essequibo Coast)	657-6638, 604-1956
Emergency Police Response	911
Emergency Fire Station	912 For non-emergencies, 225-2700, 226-4585, or 227-6123
GFS headquarters in Georgetown	226-2411 / 226-0650
Berbice (Corentyne): Rose Hall Fire Station (Williamsburg Settlement, Corentyne, Berbice)	322-5707
For the Essequibo coast: Anna Regina Fire Station	771-5261 / 771-5347
Environmental Protection Agency	225-5467-69, 225-5471-72, 225-6044/48, 225-0506
Guyana Police Force G/town	227-2128
Charity Police Station (Region 2, Essequibo)	613-0573 **/** 672-0140
Central Police Station – New Amsterdam (Region 6, Berbice)	592-333-2151
Berbice Divisional Headquarters – Guyana Police Force (Region 6, Berbice)	641-5609 **/** 673-4474
Charity Police Station (Region 2, Essequibo)	613-0573 **/** 672-0140

Guyana Energy Agency	226-0394
Air Services Ltd	222-4368

6.5 Communication

6.5.1 An alarm, such as a bell or vocal alarm, shall be sounded in the event of an emergency.

6.5.2 The personnel who discovered the emergency should immediately notify the Site Supervisor and/or the relevant emergency response authorities of the incident.

6.5.3 The Site Supervisor will then notify the relevant personnel such as the Health and Safety Officer and/or the Environmental Officer.

6.5.4 When relaying information on an emergency, the following should be communicated:

6.5.4.1 Number of causalities

6.5.4.2 Assistance required

6.5.4.3 Hazards

6.5.4.4 Contact information

6.5.4.5 Name

6.6 Emergency Evacuation

6.6.1 An evacuation map shall be posted at the facility in a conspicuous location. The following will be marked on the map:

6.6.1.1 Emergency exits.

6.6.1.2 Primary and secondary evacuation routes

6.6.1.3 Fire alarm location

6.6.1.4 Locations of firefighting equipment, such as extinguishers, sand buckets.

6.6.1.5 Location of first aid kit

6.6.1.6 Location of spill kit

6.6.1.7 Assembly point

6.6.2 On-site staff should know the location of all points marked on the map.

6.7 **Emergency Equipment**

6.7.1 Firefighting equipment, a first aid kit and a spill kit shall be stored in readily accessible and strategic locations at the facility and maintained in accordance with the equipment specifications.

6.7.2 The table below outlines the management of the emergency equipment.

Table 18: Management of emergency equipment

Equipment	Inventory	Inspected By	Inspection Frequency	Who is Trained to Use Equipment	Frequency of Training
First Aid Kit	See Attachments	Health & Safety Officer	Bi-annual	Site Supervisor On-Site Staff	Annual
Equipment	Fire Extinguishers and Sand Buckets in accordance with GFS recommendations	Health & Safety Officer GFS Fire Officer	Bi-annual	Site Supervisor On-Site Staff	Annual
Spill Kit	See Attachments	Environmental Officer	Bi-annual	Site Supervisor On-Site Staff	Annual

6.7.3 Staff trained in using the abovementioned emergency equipment must be present on site during working hours.

6.8 First Aid Emergency Response

6.8.1 In the Event of an Electric Shock:

6.8.1.1 Assess the area for hazards and secure the area to protect additional life from injury.

6.8.1.2 Notify the appropriate local authorities by calling 911 and the Site Supervisor and direct them to the entry point of the facility.

6.8.1.3 If personnel cannot contact the Site Supervisor, local authorities should contact the Site Supervisor to determine the appropriate response procedures and methods for shutting down the nearest components to ensure safe access.

6.8.1.4 During a response, it should be always assumed that:

6.8.1.4.1 All solar equipment on site contains lethal AC and DC voltages.

6.8.1.4.2 All inverters contain energy storage devices that require 15 minutes to safely discharge lethal voltages.

6.8.1.4.3 Electricity is supplied from multiple sources.

6.8.1.4.4 Photovoltaic panels are made of glass and may break. If any cracks occur in the modules, touching a crack may expose a person to the full voltage and current of the array. **Do not touch the modules without wearing electrical insulating gloves**; and

6.8.1.4.5 The site should only be accessed by personnel or emergency responders under the direction of the Site Supervisor/ Health & Safety Officer.

6.8.1.5 Any accidents should be immediately reported to the Health & Safety Officer as soon as it is safe to do so.

6.8.2 In the Event of a Medical Emergency or Personal Injury:

6.8.2.1 The person discovering the casualty shall:

6.8.2.1.1 Alert the Site Supervisor and/or personnel trained in emergency response of the injured person.

6.8.2.1.2 If qualified, apply first aid, if not qualified await arrival of first aid officer or qualified first aid person.

6.8.2.1.3 Prevent unqualified persons from attempting to assist or treat the casualty.

6.8.2.2 The Site Supervisor shall:

6.8.2.2.1 Assess the injury and call assistance from ambulance service as required.

6.8.2.2.2 Notify the Health and Safety Officer of the incident.

6.8.2.2.3 Assist on-site response (first aiders) as required.

6.8.2.2.4 Arrange for guidance of the ambulance to the scene of the casualty.

6.8.2.2.5 Arrange for the accident/incident investigation and completion of the appropriate reporting.

6.8.2.2.6 See Section 6.9 for Incident Reporting.

6.8.3 In the event of a Fire:

6.8.3.1 The individual discovering the emergency shall:

6.8.3.1.1 Assess the situation to determine potential safety concerns to life and the environment, with life safety as the priority.

6.8.3.1.2 Activate the alarm and notify the appropriate local authorities by dialling 912 and directing them to the entry point of the facility.

6.8.3.1.3 Notify the Site Supervisor about the fire emergency.

6.8.3.2 Upon being notified about the fire emergency, occupants of the facility must:

6.8.3.2.1 Leave the building using the designated escape routes.

6.8.3.2.2 Gather calmly and orderly in the assembly area.

6.8.3.2.3 Remain outside until the competent authority (GFS or Health & Safety Officer) announces that it is safe tore-enter.

6.8.3.3 Upon notification of the fire, fire responders shall:

6.8.3.3.1 Evacuate and secure the area and keep people a minimum of 300 feet away, provided there are no immediate threats to people or non-solar property.

6.8.3.3.2 Let the facility burn. Burning electrical equipment is already damaged and must be replaced.
6.8.3.3.3 Protect adjacent exposures, such as buildings and forested areas, as needed, to limit the potential of the fire spreading.
6.8.3.3.4 Fight the fire only if it is small and not spreading to other areas. All responders should use a self-contained breathing apparatus (SCBA). Escaping the area is possible by backing up to the nearest exit and the fire extinguisher is in working condition and the personnel are trained.
6.8.3.4 The Site Supervisor must:
6.8.3.4.1 Disconnect utilities and equipment unless doing so jeopardizes his/her safety.
6.8.3.4.2 Coordinate an orderly evacuation of personnel.
6.8.3.4.3 Perform an accurate head count of personnel reported to the assembly point.
6.8.3.4.4 Determine a rescue method to locate missing personnel.
6.8.3.4.5 Provide the Guyana Fire Service with the necessary information about the facility.
6.8.3.4.6 Notify the Health & Safety Officer.
6.8.3.4.7 Arrange for the accident/incident investigation and completion of the appropriate reporting.
6.8.3.4.8 See Section 6.9 for Incident Reporting

6.8.4 In the event of an Environmental Spill
6.8.4.1 The personnel discovering the spill shall:
6.8.4.1.1 Warn any personnel in immediate danger.
6.8.4.1.2 Report the spill to the Site Supervisor.
6.8.4.1.3 If the Site Supervisor cannot be located, notify the Environmental Officer or the O&M Manager. If an incident occurs after hours, the spill would be expected to be minor, and identification of the spill would be made by the first supervisory staff attending the site.
6.8.4.1.4 If safe, protected (i.e., PPE) and trained, on-site staff shall contain and cleanup the spill using the site's spill kit.
6.8.4.1.5 If not trained or competent in spill clean-up, evacuate the area and contact the Site Supervisor or Emergency Response Personnel.
6.8.4.1.6 Do not use water to wash down spills.

6.8.4.2 The Site Supervisor shall:
6.8.4.2.1 Notify the Environmental Officer.
6.8.4.2.2 Notify the site emergency response personnel of the incident via phone or message.
6.8.4.2.3 If emergency response personnel are not on site, the site supervisor, once safe, protected (i.e., PPE) and trained, shall contain and clean up the spill using the site's spill kit.
6.8.4.2.4 Complete the appropriate reporting.
6.8.4.2.5 See Section 6.9 for Incident Reporting.
6.8.4.3 The Emergency Response Personnel shall:
6.8.4.3.1 Ensure that the area is evacuated if required, or under the direction of the Site Supervisor.
6.8.4.3.2 If safe, protected (i.e., PPE) and trained, contain and clean up the spill using the site's spill kit.
6.8.4.3.3 Conduct personnel count and account for all personnel on site.
6.8.4.3.4 Report actions of cleanup to the Site Supervisor.
6.8.4.4 Contaminated spill cleanup materials shall be double wrapped in garbage bags and stored in a container labelled "Hazardous Waste" until it is disposed of by an EPA authorized hazardous waste disposal/treatment company.

6.8.5 In the event of Natural Disasters

6.8.5.1 Severe weather events such as rainstorms and forest/bush fires are possible at the Project. Although much less common, there is also the potential for tremors, flooding, or high wind events (e.g., microbursts). After an extreme weather event, the Site Supervisor will evaluate all equipment for damage and repair, as necessary, to restore full Project operations.
6.8.5.2 In the event of a forest fire, see **Section 6.8.3**.
6.8.6 In the event of unauthorized persons accessing the facility:
6.8.6.1 Access to the Project is limited to trained staff and maintenance personnel only. Onsite staff are to ensure that no unauthorized person(s) enters the facility.
6.8.6.2 A log of personnel entering and exiting the facility will be kept and maintained.
6.8.6.3 The site supervisor should be notified of any unauthorized person(s) entering the facility and determine whether the local authorities should be contacted.

6.9 Incident Reporting
6.9.1 The Site Supervisor must make entry of the incident into the Accident and Emergency Record book after the incident has been delt with.
6.9.2 Where an accident occurs involving loss of life or serious personal injury, or is an accident involving plant and equipment, an incident report of this accident must be completed in full by the Site Supervisor, within twenty-four (24) hours, and submitted to the Health and Safety Department. Refer to GPL-OSH-002 Procedure for Industrial Accident Reporting, Recording and Investigating.
6.9.3 A Spill Report Form, in the event of an environmental spill, must be completed in full by the Site Supervisor, within twenty-four (24) hours, and submitted to the Environmental Management Department. Refer to GPL-XXX-000 Procedure for Implementation of the Spill Report Form.
6.9.4 All submitted forms shall be recorded both by the respective departments for review and analysis.
6.10 Continuous Improvement
6.10.1 The Emergency Response Procedure shall be subjected to an annual review by the Health & Safety Department and the Environmental Management Department to ensure that the procedure is adequate and suitable of the ongoing project. **NB: the procedure may be reviewed and revised following an evaluation of a real emergency or training exercises**.
6.10.2 The revisions to the procedure shall be approved by GPL's Divisional Director – Quality, Health, Safety and Environment & Ops Support.
6.10.3 Training shall be conducted on the revised Procedure. See **Section 6.2**.

7.0 RECORDS:

7.1 Training Records
7.2 Accident and Emergency Record Book
7.3 Incident Report Form
7.4 Spill Report Form

ATTACHMENTS:

I. **Evacuation Plan for Fire and/or Bomb Scare or other Emergencies**
II. **Inventory of First Aid Kit and Spill Kit**

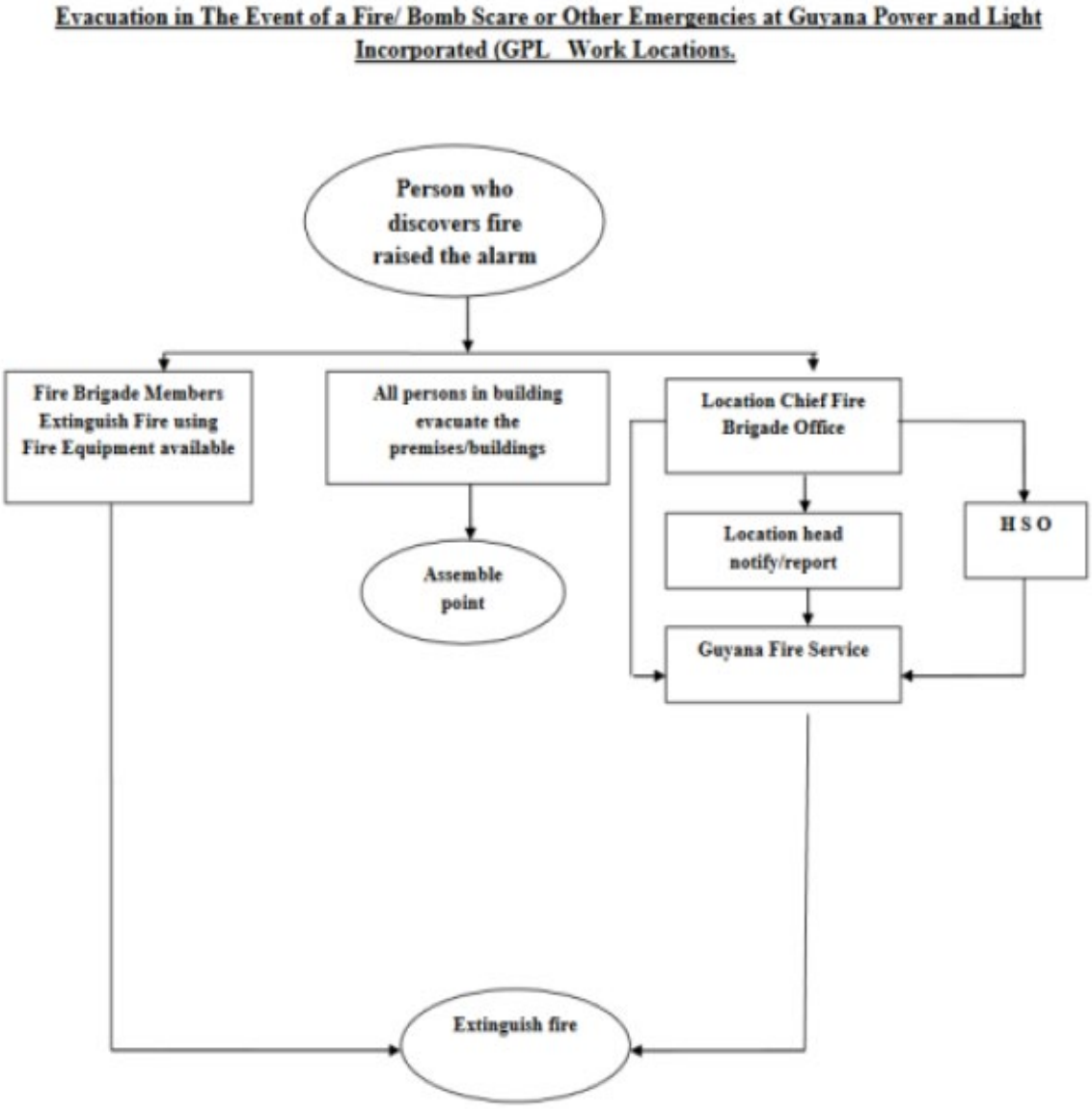

Figure 9: Evacuation Plan for Fire and/or Bomb Scare or Other Emergencies

INVENTORY OF FIRST AID KIT AND SPILL KIT

First Aid Kit

The acceptable quantity of first aid kits/materials to number of workers will be determined by the Safety and Health Department. The Health & Safety Department will also be responsible through the Site Supervisor to maintain the contents of the first aid kit.

The first aid kit and materials will be stored in a dust/waterproof appropriate container. Each first aid kit shall contain but not limited to the following items:

- *Gauze pads*
- *Large gauze pads (at least 8" x 10")*
- *Box adhesive bandages (Band-Aids)*
- *Package gauze roller bandage at least 2" wide*
- *Triangular bandages*
- *Rubbing alcohol / alcohol wipes*
- *Scissors*
- *Burn cream.*
- *Ammonia inhalants*
- *Butterfly closures*
- *Hand mirror*
- *Antiseptic Cream*
- *Tweezers*
- *Adhesive tapes*
- *Latex gloves*
- *Resuscitation equipment such as resuscitation bag, airway, or protective facemask*
- *Elastic wraps*
- *Splint*
- *Directions for requesting emergency assistance.*
- *Snakebite kit*
- *Cold packs*
- *Eye wash kit*
- *Cotton balls*
- *Hand sanitizer*
- *Antibiotic ointment*
- Additional first aid materials needed, but not limited to the following, are:
- *Two (2) clean acceptable Blankets*
- *Rigid stretcher*

Spill Kit

The Environmental Management Department will be responsible through the Site Supervisor to maintain the contents of the spill kit. The spill kit and materials will be stored in a dust/waterproof appropriate container. Each spill kit shall contain but not limited to the following items:

- *Absorbent pad x 30*
- *Gloves x 1 pair*
- *Respirator x 1*
- *Oil Gator x 1 bag*
- *Absorbent booms x 1*

ANNEX B: GRIEVANCE REDRESS MECHANISM

Table 19: GPL's Procedure for Grievance Mechanism

Document Title	**Procedure for a Grievance Mechanism**
Document Number	GPL -xxx-xxx
Prepared By:	Details of Environmental/Social/Communication Officer Signature: ..... Date: .....
Verified By:	Details of Divisional Director Signature: ..... Date: .....
Approved By:	Team Leader Signature: ..... Date: .....

1.0 TITLE: *Procedure for Grievance Mechanism*

2.0 PURPOSE:

2.1 This procedure applies to all residential and commercial stakeholders within the Bartica Community. The purpose of this procedure is to encourage stakeholders to:

2.1.1 Raise their grievance (formal or informal) without fear of victimisation or disadvantage thereby ensuring transparency and accountability in the project's management.

2.1.2 Promote the timely resolution of complaints.

2.1.3 Ensure there is a fair process in resolving complaints thus promoting community engagement and satisfaction.

3.0 SCOPE:

31. This scope is for all stakeholders with the Bartica Community regarding the operation of the Bartica Solar Farm.

4.0 REFERENCES:

4.1 Environmental Permit (Renewed) RefNo.:20170922-HEREB
4.2 GPL-CSD-004- Procedure for Responding to Telephone Conversation
4.3 GPL-CSD-008- Procedure for Response to a Written Inquiry
4.4 GPL-CSD-009- Procedure for Call Centre

5.0 DEFINITIONS:

5.1 *Grievance* - is any problem, concern or complaint related to the work environment

5.2 *Informal grievance* – a grievance made verbally.

5.3 *Formal grievance* – a grievance made in writing.

5.4 *Support person* – a person to assist the complainant to prepare for an investigation interview and to be with them in the meetings to provide industrial advice (if attending in that capacity) and to take notes. They cannot speak on the person's behalf.

5.5 *Procedural fairness* – lack of bias, use of evidence to support decisions, process directed by procedures, investigation appropriate to the circumstances and history.

5.6 *Natural justice* – ensuring all parties affected by a grievance have a fair hearing prior to attempting a resolution.

5.7 *Investigation process* – standardised system of enquiries designed to discover the facts of a series of events. Repeatable, consistent process.

5.8 *Complainant* – a person who makes a complaint against another party, alleging harm by that person.

5.9 *Respondent* - a person called upon to issue a response to a communication made by another, such as a complaint.

6.0 DETAILS OF PROCEDURE: (refer to narrative and flowchart)

The Grievance Mechanism procedure will be readily available and accessible at the site.

6.1 Identification and recording

6.1.1 This ensures that the grievance mechanism is inclusive, culturally appropriate and that the complainants have several methods of communication available to make a report regarding environmental and/or social grievance. Informal (verbal) grievances are directed to staff of GPL who may fill out the information with all required details for submission to the relevant department, i.e., Environmental Department or Health and Safety Department for recording.

6.1.2 Stakeholders can also contact GPL to report grievances via telephone or formally (written). The formal grievance can be addressed to GPL's registered office at 40, Main Street, Cummingsburg, Georgetown, Guyana or emailed to gplquery@gplinc.com.

6.1.3 After the complaint is received, the complaint form will be scanned and filed (hard or soft copies) by the relevant department, i.e., Environmental Department or Health and Safety Department. *Please refer to grievance report contact information.*

6.2 *Acknowledgement*

The Environmental Management Department or Health and Safety Department will formally acknowledge the complaints made formally or informally. A correspondence which will also be kept as record.

6.3 *Investigation and response*

6.3.1 The Environmental Department or Health and Safety Department will interview the complainant to determine the nature of the complaint. An investigation will be conducted to evaluate the impact of the complaint.

6.3.2 Technical assistance/recommendations will betaken to address the complaint and possible actions to prevent reoccurrence to minimize effects.

6.4 *Communication of the outcome of the investigation to the complainant*

6.4.1 The Environmental Department or Health and Safety Department will formally notify the complainant through correspondence on a status update and corrective/mitigation actions that may be implemented as a result of the investigation.

6.4.2 The Environmental Department or Health and Safety Department will monitor the effectiveness of the corrective measures implemented by the facility.

6.5 *Close-out*

To close out the grievance, a formal correspondence will be communicated to complainant by the Environmental Department or Health and Safety Department.

7.0 RECORDS: None

8.0 ATTACHMENTS: None

Table 20: Grievance Report Contact Information (under review)

Information Organisation	**Telephone Number**
Site Supervisor	TBD
Generation, O&M and Contracts Manager	227-1139
Health and Safety Department (HS Officer: Mr. Kulunand Persaud)	+(592) 227-4934 +(592) 608-3779
Environmental Management Department (Env. Officer: Ms. Arifea Hassan)	+(592) 227-0233 +(592) 629-6896
GPL Main Office	+(592) 231-4144
Berbice GPL Office (Corentyne/Coast)	333-2186
Essequibo GPL Office (Supenaam to Charity)	623-4014 (accessible 07:00–23:00) and 623-0123 (accessible 23:00–07:00)

GPL Environmental Grievance Form

Name of Complainant:	Telephone Number:
Age:	Gender: Male____ Female_____ Other: _____

Contact Information:	Address:
Town/Community:	

PART 1: DETAILS OF COMPLAINT/INCIDENT	
Title of Complaint:	
Date:	**Place of Incident(Address, Project site/ GPS Coordinates):**
Brief Description/ Statement	

Signature (Complainant):	Date:

Signature (Recipient of Grievance, e.g. supervisor):	Date:
To be utilized by the Complainant and Recipient of Complaint.	

PART 2: RESPONSE FROM THE COMPANY		
Does the claim proceed?	Yes:	No:

If **NO**, give reasons: (e.g. root cause analysis)

Name of person investigating grievance:

Signature (Investigator):	Date:

PARTICIPANTS NAMES	FROM	DEPARTMENT

Signature (Environmental Officer):	Date of Submittal of Technical Report:

To be utilized ONLY by the Environmental Management Department.

PART 4: CORRECTIVE ACTION
Specify Corrective Action(s): Specify any follow up action(s):

Date of Implementation of Corrective Action (s): _____

PART 5: ACKNOWLEDGEMENT OF CLOSURE OF GRIEVANCE	
Signature (Environmental Officer):	Date:
Signature of Divisional Director - QHSE Mgt & Ops Support:	Date:
To be utilized ONLY by the Environmental Management Department.	

ANNEX C: WASTE MANAGEMENT PLAN

TYPICAL WASTE GENERATED	ONSITE MANAGEMENT/STORAGE	RESPONSIBILITY	FREQUENCY	DESTINATION
Non-Hazardous (Cardboards, Papers, Plastics, Wood, Food Wastes)	• Waste is segregated according to wood, plastic, and paper, for storage, recycling or reuse. • Waste is stored in labelled waste receptacles corresponding with the waste streams listed above. • Receptacles are placed at strategic locations around the facility.	Staff on site Site Supervisor Facilities Department	Weekly	Essequibo (Charity, Onderneeming) Berbice (Trafalgar, Prospect, Hampshire)
Hazardous Waste Storage (Scrap metals such as parts, broken panels; oily waste, waste oil)	• Scrap metals will be stored in a designated receptacle labelled “Scrap Metals” prior to disposal. • All old and damaged lithium batteries and PV panels will be stored within a designated and labelled area prior to disposal. • Oily rags, contaminated materials, etc. will be stored in a designated receptacle labelled “Oily Rags” prior to disposal. • Waste transformer oil will be stored in a designated container labelled “Waste Oil”. The label will also include the date of beginning of accumulation of waste oil. • Receptacles will be stored on an impervious surface with a bunded wall and a shed. • No Smoking signs will be placed in the area where any flammable hazardous waste is stored	Staff on site Site Supervisor Facilities Department	Monthly	Transported for disposal by an EPA authorised contractor.

	• A spill kit will be readily available within the vicinity of the hazardous waste storage area.			
Septage Waste	• Sanitary waste is stored in a bin labelled "Sanitary Waste". • Desludging of the septic tank depends on the age of the system and the number of persons using it. Therefore, the septic tank should be visually inspected to see if the sludge or scum volume is greater than 30% or is close to the inlet and outlets of the tank. If so, the tank should be emptied Septage waste via desludging will be collected and disposed of via the Town Council.	Staff on site Site Supervisor Facilities Department	Septage: Based on inspection of septic tank	Essequibo (Charity, Onderneeming) Berbice (Trafalgar, Prospect, Hampshire)
NOTE: Burning of any type of waste is **strictly prohibited** within or outside the confines of the site.				

ANNEX D – General Requirements for Hazardous Waste Management

Type of Waste	Measures	Requirements
PCB-Containing Transformers	I. Inventory all PCB equipment and store at a centralized, EPA-approved facility (Sophia station). II. Use leak-proof, metal containers with absorbent material for transport. III. Maintain spill-response and clean-up plans. IV. All transformers over 450 ppm PCB concentration are to be exported for treatment by certified companies.	PPE Requirements: Chemical suits, gloves, goggles, and respirators.
Waste Oil Management	I. Maintain an inventory of waste oil and use oil-water separators to reduce waste volume. II. Store oil in steel tanks with secondary containment and leak detection. III. Contract certified waste oil collectors for transport. IV. Develop and maintain emergency response and spill management plans.	PPE: Oil-resistant gloves, safety glasses, boots, and respirators.
. SF_6-Containing Circuit Breakers	I. Inventory and inspect all SF_6 equipment for leaks. II. Store decommissioned equipment in sealed containers at designated facilities. III. Recycle or destroy gas via specialized certified companies. IV. Maintain training and emergency plans for staff.	PPE: Chemical overalls, respirators, gloves, boots, and safety goggles.
Asbestos Management •	I. Only certified asbestos contractors are permitted to handle and transport asbestos. II. Stop all work immediately if asbestos is detected; isolate area and notify HSE Manager. III. Use UN-approved, double-sealed packaging for containment. IV. Dispose of asbestos in designated landfill areas with appropriate signage and worker protection.	PPE: Full-body disposable suits, respirators (P100), gloves, goggles, and boots.

Wood Preservation Chemicals	I. Separate, record, and store treated poles at a central facility on impervious surfaces. II. Transport via secured, marked vehicles. III. Disposal through certified landfills equipped to handle chemically treated wood.	PPE: Chemical-resistant gloves, coveralls, helmets, boots, and glasses.
Electronic Waste (E-Waste) for Solar PV Systems	I. Develop an E-Waste Management Policy aligned with national and international standards. II. Integrate end-of-life planning and take-back programs into procurement. III. Ensure certified recyclers handle waste components. IV. Track and report on recycling and disposal performance using ESG indicators.	
General Requirements **I. Training & Oversight: Regular HSE (Health, Safety & Environment) training and audits.** **II. Documentation: Maintain transport manifests, inspection reports, and disposal certificates.** **III. Emergency Response: Each section mandates spill-response kits, first aid, and fire safety equipment.** **IV. PPE Maintenance: All protective gear must be inspected, labelled, and replaced as needed.**		

ANNEX E: ENVIRONMENTAL CHECKLIST FOR THE SOLAR PV FACILITY

ENVIRONMENTAL CHECKLIST FOR SOLAR PHOTOVOLTIC FARM

Location: **Type of Inspection:**

Date: **Name of Inspector:**

Operator onsite: **Weather:**

Compliance Requirements	Yes	No	Remarks/ Notes	Recommendations/ Corrective actions
Documentation				
Does the location have a copy of their current Environmental Authorisation Permit?				
Does the location have a valid Fire Safety Certificate from GFS?				
Is there an Environmental and Social Management Plan for the project?				
Does the facility have an Emergency Response Plan?				
Has there been any Health & Safety or Environmental training/ awareness, e.g. emergency response, for the year?				
Are there any safety/ caution signs around the facility (Pictorial evidence)				
Is there a system for the handling of complaints?				
Have there been any complaints? If so, what are they, what was done?				
Is there record of any wildlife species entering the vicinity of the project?				
PV System Management				
What type of PV Photovoltaic panels are used onsite? How many are onsite?				
Are photovoltaic systems maintained in accordance with manufacturers specifications?				
Is there a maintenance schedule for the system?				
Is maintenance done in accordance with the schedule?				
Is the Solar Photovoltaic Grid located at least 100 m from adjoining community or commercial activities? What is the current output for the solar farm?				
Transformer				
What is the current output for the solar farm?				

Is the transformer(s) housed on a concrete base to dampen vibration?				
Is there any leakage of transformer oil? What is capacity of the transformer conservation tank?				
What quantity of oil is utilized during replenishment?				
Is there a schedule for maintenance?				
Is there secondary containment around the transformer? Does the containment have a secondary catchment?				
Battery System Management				
What type of batteries are used onsite? How many?				
Are the batteries stored according to manufacturers instructions?				
Is there a maintenance routine recommended by the manufacturer? Is it being followed?				
Are batteries housed in a contained area with an imperious base?				
Noise Level Management				
Is there a system for the monitoring of noise level				
Were sound level readings taken at the time of the inspection?				
Vegetation Management				
Is there a vegetation management plan for the project site?				
If yes, is there a schedule for vegetation removal? Is the removal in accordance with schedule? (Pictorial Evidence)				
Is vegetation removed in an environmentally safe manner?				
Is there any evidence of use of inorganic weedicides?				
Drainage System				
Is there an established drainage system below the solar panels?				
How many effluent discharge points are located within the facility?				
Does the effluent drain into an external drainage system? If so, where?				
Is the drain capable of capturing maximum precipitation and storm water?				
Are chemicals, fuels and or oils stored at least 10 m away from drainage/ water bodies?				

Waste Management				
Is there a Waste Management Plan?				
Where does the facility store any oil drained from transformer conservation tank?				
Are oily wastes stored inappropriate metal containers? Are containers labelled?				
How does the facility treat/ disposed of its liquid hazardous waste?				
Is there a storage area for hazardous waste? Is the area bunded with drainage? Does the				
drainage lead to a secondary containment?				
What is the quantity of liquid hazardous waste generated per annum?				
Have there been any oil spills at the facility for the year? Were they reported?				
Liquid Hazardous Waste				
Is there a Waste Management Plan?				
Where does the facility store any oil drained from transformer conservation tank?				
Are oily wastes stored inappropriate metal containers? Are containers labelled?				
How does the facility treat/ disposed of its liquid hazardous waste?				
Is there a storage area for hazardous waste? Is the area bunded with drainage? Does the drainage lead to a secondary containment?				
What is the quantity of liquid hazardous waste generated per annum?				
Have there been any oil spills at the facility for the year? Were they reported?				
Are spill kits onsite? Are kits well stocked?				
Solid Hazardous Waste				
Where and how are oily rags stored?				
Where are old batteries stored? / How many are currently stored?				
How are old batteries disposed of? How many were disposed for the year?				
Is there an established temporary storage area for damaged or broken photovoltaic panels?				
How many panels were damaged or broken for the year?				

Does the temporary storage area for the PV panels have an impervious base, with an appropriate shed? Is the area labelled?				
Domestic Waste				
Are there domestic waste bins onsite? How many? Are they labelled? (Pictorial evidence)				
What is the quantity of domestic waste produced per annum?				
How is domestic waste disposed of?				