ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF) REGIONAL PROGRAM FOR DISTRIBUTED ACCESS THROUGH RENEWABLE ENERGY SOLUTIONS - LIBERIA (P507938)

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1. Table of Contents

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ACCRONYMS AND ABBREVIATIONS

AFW	Western and Central African region
CBOS	Community-Based Organizations
CPF)	Country Partnership Framework
DARES	Distributed Access to Renewable Energy Solutions
DRE	Distributed Renewable Energy
EMF	Electromagnetic field DATESEPA
EPA	Environmental Protection Agency
EPC	Engineering, Procurement, and Construction
EPML	Environmental Protection and Management Law
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESHS	Environmental, Social, Health, and Safety
ESIA	Environmental and Social Impact Assessment
ESIRT	Environmental and social incident response toolkit
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMU	Environmental and Social Management Unit
ESMS	Environmental and Social Management System
E&S	Environmental and Social
ESS	Environmental and Social Standard
GHG	Greenhouse Gas Gases
GBV	Gender Based Violence
GM	Grievance Mechanism
HCs	Hydrocarbons
HSE	Health and Safety, and Environment
IUCN	International Union for Conservation of Nature
IVA	Independent Verification Agent
LEC	Liberia Electricity Corporation

LERC	Liberia Energy Regulatory Commission
LESSAP	Liberia Electricity Sector Strengthening and Access Project
LMP	Labor Management Procedure
LRP	Livelihood Restoration Plans
MFDP	Ministry of Finance and Development Planning
MDAs	Ministries, Departments, and Agencies
MME	Ministry of Mines and Energy
MOH	Ministry of Health
NEOHP	The National Environmental and Occupational Health Policy
NEP	National Energy Policy
NGO	Non-Governmental Organization
NOx	Nitrogen oxides
NPHIL	National Public Health Institute of Liberia
PCMU	Project Coordination and Management Unit
PDO	Project Development Objective
PIU	Project Implementation Unit
PM	Particulate matter
POM	Project Operational Manual
PUE	Productive use
RAP	Resettlement Action Plan
RESPITE	Regional Emergency Solar Power Intervention Project
RFM	The Regional Fund Manager
RCU	Regional Coordination Unit
RP	Resettlement Plan
RPF	Resettlement Policy Framework
RF	Resettlement Framework
RREA	Rural and Renewable Energy Agency
SEAH/SH	Gender Based Violence (GBV) and Sexual Exploitation, Abuse, and Sexual Harassment.
SEP	Stakeholder Engagement Plan

SHS	Solar Homes System
Sox	Sulfur oxides
UNEP	United Nations Environment Program
USAID	United States Agency for International Development
VLD	Voluntary Land Donation
VOC	Volatile organic compound
WB	World Bank
WCMC	World Conservation Monitoring Center
WHO	World Health Organization

2. Executive Summary

DARES Project Background – Project Components and PDO

The Distributed Access to Renewable Energy Solutions (DARES) project is envisioned as a regional platform to enable scaling up of both new and established cross-country market aggregation approaches to accelerate Distributed Renewable Energy (DRE) market growth across countries in West Africa for achieving universal electrification. The program focuses on accelerating DRE market growth in the three most critical areas: (i) households and commercial and industrial (C&I) customers, (ii) productive use (PUE) DRE solutions for enhanced food security (including irrigation, cooling, and agri-processing), (iii) critical human capital-related public services (incl. rural health centers and schools). A fourth area focuses on aligning policies and regulatory frameworks and building capacities in the countries (RREAs, regulators, etc.). The regional platform aims to provide – (i) electricity access to 8 million and 100,000 micro, small and medium enterprises through the deployment of mini-grids, mesh-grids and standalone systems; (ii) reliable and clean electricity for productive uses to around 200,000 farmers and agri-businesses; and (iii) electricity access to 5,000 public institutions, including health centers and schools, to enable them to provide essential public services. The first phase of this Regional Program includes four countries: Benin, the Central African Republic, Liberia, and Sierra Leone. The second phase is likely to incorporate the Republic of Chad and the Republic of Guinea.

Project Components

The DARES involves the construction of solar plants, associated mini-grids, installation of solar panels for residents and industries, and these are spread across the following components:

Component 1 (US$250 million): Connecting People and Businesses with affordable DRE solutions, including mini-grids, mesh-grid, and standalone systems to foster local development.

Component 2 (US$100 million): Powering Food Security through DRE-based irrigation, cooling, and agri-processing solutions to build resilience of food supply chains in West Africa.

Component 3 (US$50 million): Powering Human Capital through the roll-out of the "Energy-as-a-Service" (EaaS) model to strengthen critical public infrastructure (incl. health centers and schools).

Component 4 (US$50 million): Technical Assistance focused on enabling environment as well as regional tender design and capacity building of national Rural Electrification Agencies and Sector Regulators.

The country allocation for the Republic of Liberia is US$45 million. Other countries' allocations are as follows: The Republic of Benin, US$72 million; the Central African Republic, US$80 million; the Republic of Guinea, US$65 million; the Republic of Sierra Leone, US$60 million; and US$120 million for the Republic of Chad.

The Project Development Objective (PDO) is to increase access to electricity services for households and MSMEs with private sector-led distributed renewable energy generation. PDO level indicators include:

a. Households provided with access to electricity (number);

b. Productive use connections energized (number);

c. Public institutions (schools and healthcare facilities) provided with access to electricity.

Objectives of the Environmental and Social Management Framework (ESMF)

This ESMF is an environmental and social assessment and management tool for all four (4) DARES components. The Technical Assistance investment is not included in the ESMF analysis because that investments do not have or contain activities that may have impact in the biophysical or socioeconomic environment. This document shall provide guidance for satisfactory assessment and management of environmental and social impacts at the sub-project level through appropriate measures during the planning, design, construction, and operation phases of various investments. The ESMF will provide guidelines for assessing the environmental, socio-economic, and health impacts of the project, as well as recommending appropriate mitigation measures and monitoring plans in line with the applicable Environmental and Social Standards (ESS).

Legal Framework

The DARES project will be implemented under the legal framework of national and international laws, including the World Bank ESS and guidelines, international conventions signed by beneficiary countries, and national laws of the respective project countries.

The Republic of Liberia Environmental Protection and Management Law (EPML) is the key legal instrument of reference for the management of the environment in all sectors, including energy, in Liberia. The Environmental Protection Agency (EPA) is the principal authority in Liberia for the management of the environment and coordinates, monitors, supervises, and consults with relevant stakeholders on all activities in the protection of the environment and sustainable use of natural resources. In addition to being responsible for the provision of guidelines for the preparation of Environmental and Social Impact Assessment (ESIA) studies, environmental audits, as well as the evaluation and issuance of environmental permits, the EPA is mandated to set environmental quality standards and ensure compliance with pollution control. The main functions of the EPA are as follows:

- Co-ordinate, integrate, harmonize, and monitor the implementation of environmental policy and decisions of the Policy Council by the Line Ministries
- Propose environmental policies and strategies to the Policy Council and ensure the integration of environmental concerns in overall national planning
- Collect, analyze, and prepare basic scientific data and other information pertaining to pollution, degradation, and environmental quality, resource use, and other environmental protection and conservation matters, and undertake research and prepare and disseminate every two years a report on the state of the environment in Liberia
- Encourage the use of appropriate, environmentally sound technologies and renewable sources of energy and natural resources
- Establish environmental criteria, guidelines, specifications, and standards for production processes and the sustainable use of natural resources for the health and welfare of the present generation, and to prevent environmental degradation for the welfare of future generations.

In addition to the Environmental Protection and Management Law (EPML), Liberian Labor laws, electricity law 2015, National Forestry Reform Law 2006, gender policy and gender based violence laws, etc. will be part of the legal framework which will guide this Program during implementation.

Nine out of the ten Environmental and Social Standards (ESSs) of the World Bank's Environmental and Social Framework (ESF) have been screened as relevant and applicable to DARES Liberia. These comprise ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS8, and ESS10, while ESS7 has been screened as not applicable. These standards include:

Environmental and Social Standard (ESS)	Relevance
ESS1: Assessment and Management of Environmental Risk and Impacts	Applicable

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ESS2: Labor and Working Conditions	Applicable
ESS3: Resource Efficiency and Pollution Prevention and Management	Applicable
ESS4: Community Health and Safety	Applicable
ESS5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement	Applicable
ESS6: Biodiversity Conservation and Management of Natural Resources	Applicable
ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Applicable
ESS8: Cultural Heritage	Applicable
ESS9: Financial Intermediaries	Not Applicable
ESS10: Stakeholder Engagement and Information Disclosure	Applicable

Project Environmental and Social Baseline

The DARES will have nationwide coverage. In this regard, a general overview of the environmental and social coverage includes:

- Environmental baseline
- Vegetation
- Hydrology
- Geological
- Biodiversity
- Demography
- Ethnicity
- Poverty and Growth
- Human Capital
- Access to social services
- Access to electricity
- Conflict and Fragility

It is expected that the eventual and more elaborate environmental and social assessment studies to be undertaken will provide in detail the specific and peculiar environmental and social baseline conditions for each project site. Thus, the project area of influence (which cuts across Liberia) is divided into three main climatic regions: Coastal plains, Tropical Rain Forest, and Savannah.

Project Environmental and Social Risks and Impacts

Project environmental and social risks have both been rated as substantial in the Project Appraisal Document (PAD). The rationale for the rating is the nature and scope of program activities, the environmental and social sensitivities of targeted beneficiary areas and communities, the local context, and borrower capacity to manage the environmental and social risks of project activities. While the project has nationwide coverage, the majority of the project's targeted population is expected to be electricity-deprived communities living in rural and remote areas, which may include zones of fragility due to insecurity, pervasive poverty, and heightened vulnerability to climate change.

The DARES project will cover all fifteen (15) counties of Liberia. The Environmental and Social (E&S) risks identified are systemic and expected to manifest frequently across project components. However, they are not expected to be large-scale and irreversible. Their magnitude is proportional to the small size of subprojects, which are limited in scope, site-specific, and manageable. But if not managed properly, the risks could induce adverse E&S impacts in the short term, medium term, and long term. Environmental and social risks and adverse impacts for each project component may include, but are not limited to:

- Noise generated during the movement and transportation of equipment (construction phase, likewise operational phase, when providing services, and during supervision)
- Waste generation (electronic and hazardous – operational phase)
- Stress on local water use and supply, (used for construction and cleaning of solar panels, but also for irrigation schemes) that could exert pressure on community water sources, sourcing of construction materials (sand, stones, aggregates, steel rods and timber) from unvetted suppliers, construction impacts (including community and occupational health and safety), and waste management. All of these can become systemic risks if not managed well

- Air pollution from contractors' equipment mobilization to the site
- Traffic/road safety hazards for workers and the community (construction and operational phase)
- Travel delays (construction phase)
- Risk of poor OHS practices: Accidents may result in injury and fatalities, working from height at the rooftop of buildings may also bring an occupational hazard for solar installation and general construction impacts. (Construction phase)
- Grievances, Complaints, Disruption of activities, and Vandalism: Grievances from stakeholders, including PAPs, of the different participating countries within the program area of influence. (Construction and operational phase)
- Labor Influx: Sexual Exploitation and Abuse and Sexual Harassment (SEA-SH) due to the migration of workers required for the construction, installation, and/or sale operations to be supported by the project. This risk may be exacerbated in rural and peri-urban settings. Another potential risk is the possibility of conflicts arising between migrant workers and local communities due to cultural differences or a lack of mutual respect. Competition between workforces may induce conflicts. (Construction and operational phase)
- Gender Based Violence (GBV)/SH/SEA: Overall, during the different project operations, women and girls may be exposed to sexual harassment, exploitation, abuse, and violence because of interactions with the different categories of project workers
- Illicit behavior, such as theft, substance abuse, and use of drugs (construction and operational phase)
- Community Health and Safety (e.g., respiratory diseases from dust, STIs, accidents)
- Possible voluntary land donation;[1] and willing seller-willing buyer
- Weak labor practices among DRE companies installing and managing the solar systems, such as possible use of child or forced labor, or inadequate occupational health and safety (OHS) practices is another risk
- Social exclusion, due to affordability factors and, or social priorities within communities; also, exclusion from important job positions, listed last to receive project services
- Though the project will privilege voluntary willing buyer-willing seller transactions, minor to moderate land acquisition, needed for instance to build access roads, could still be required, generating potential involuntary resettlement and/or economic displacement, and land use changes, and possible voluntary land donation, which will need to follow ESS5
- The medium-term risks associated with the unsafe handling and disposal of lead-acid batteries and lithium batteries used in mini grids and solar home systems will pose a health hazard to people and the environment and bring the project's sustainability into question. Such risk could contribute to cumulative impacts stemming from toxic waste of batteries in multiple renewable energy (RE) projects, which is the direction of energy generation and access across the region. A lack of adequate waste management infrastructure in the beneficiary countries aggravates this issue of used batteries and electronics.
- The core issue with OHS is the long-term implications of the increased number of energy storage units (containing batteries). This impact requires national-level strategic

[1] Voluntary Land Donation (VLD) is open to abuse and coercion; as such, it should not be encouraged on this project except in instances where the donation meets the requirements set out in the VLD guidelines in Annex 15.10.

environmental and social assessment (SESA), policy, strategy, and an action plan for the handling and disposal of batteries, e-wastes, and hazardous wastes.

Mitigation Measures

The mitigation measures proposed in this ESMF are intended to avoid, reduce or eliminate, to the extent possible, potential adverse environmental and social impacts of project activities. The environmental and social risks and potential impacts identified are reversible and manageable; they are expected to be temporary, site-specific, and limited in scope. It should be noted that the mitigation measures referred to are generic, implying that they will only require action once specific projects are identified and assessed. The identified risks will be managed and mitigated through the application and use of the ESMF and other project instruments as per outcomes of E&S screening, including the Labor Management Procedure (LMP), the SEP, the ESIAs, the Environmental and Social Management Plan (ESMP), and other instruments as will be determined by a screening process. The ESMF incorporates an overall environmental and social management process for the project and the proposed subprojects. The process involves steps and activities for Liberia to carry out the appropriate environmental and social risk assessment proportionate to the nature and scale of impact of the specific activities. For significant impacts, an environmental and social impact assessment (ESIA) will be done in line with the objectives of the ESMF, along with an Environmental and Social Management Plan (ESMP) for the mitigation of the potential negative risks and impacts and for monitoring compliance with the relevant ESSs of the ESF during project implementation. For moderate E&S risks, only an ESMP will be required, for which templates have been annexed to this ESMF, see Annexes 15.5 and 15.9.

ESMF Implementation and Monitoring Plan

The Project Implementation Unit (PIU) under the Ministry of Mines and Energy (MME) and the Rural and Renewable Energy Agency (RREA) , will be the implementing agency of this ESMF and other relevant Institutions.

The PIU is to:

i. Ensure proper and timely implementation of environmental and social interventions proposed in this ESMF and other relevant documents to be prepared based upon the ESMF, such as the ESIA/ESMP;
ii. Alert project authorities by providing timely information about the success or otherwise of the environmental and social management process outlined in this ESMF in such a manner that appropriate decisions can be made to improve upon the process or avert any adverse impact;
iii. Make a final evaluation to determine whether the mitigation measures incorporated in the technical designs and the ESIA, the ESMP, the LMP, the SEP and the GBV plan have been successful in such a way that the pre-project environmental and social condition has been restored, improved upon, or is worse than before, and to determine what further mitigation measures may be required;
iv. Ensure the enforcement of all environmental legislation;
v. Ensure the minimization of the impacts of physical development on the ecosystem;
vi. Ensure the preservation, conservation, and restoration of all ecological processes essential for the preservation of biological diversity;
vii. Ensure the protection of air, water, land, forest, and wildlife within the country;
viii. Ensure pollution control and environmental health in each country, including the e-waste management plans for the country;
ix. Ensure the monitoring compliance with Operational and Community Health and Safety plans and measures;
x. Conduct and supervise, as relevant, inclusive and participatory stakeholder engagement;
xi. Monitor overall national-level grievances' management and documentation;
xii. Ensure project monitoring and liaison with the Independent Verification Agency (IVA);
xiii. Operationalize SEA/SH (GBV) action plan, follow referral protocols, and report all cases;

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xiv. Ensure the reporting of all incidents and accidents as per Environmental and Social Commitment Plan (ESCP), and following the environmental and social incident response toolkit (ESIRT) procedure;
xv. Ensure compliance of the government concerning the ESCP agreement;
xvi. Report all relevant matters to the Bank, including compliance with ESCP, incidents and accidents, recruitment and staffing of E&S personnel at the PIU, training of personnel, contractors, developers, and the community on E&S risk management.

Environmental and Social Risk Management Process

The ESMF incorporates an overall environmental and social management process for the DARES project and proposed subprojects. It takes into account the E&S assessment of all activities related to the project (e.g., supply chains, associated infrastructure) and their potential effects on human health, ecosystems, and communities far from the direct project site. A key implication is the need to assess cumulative impacts, for example, an investment's renewable energy-supported new water use might be insignificant on its own, but when combined with existing water scarcity in some of the participating countries' dry regions, the total impact could be severe. The process involves steps and activities for the Borrower and DRE companies to carry out ESIAs of project activities in line with the objectives of the ESMF and develop environmental and social management plans as needed. The ESMF also includes guidelines for the mitigation of the potential negative risks and impacts and for monitoring compliance with the relevant ESSs.

The environmental and social risk management approach for the project is tailored to its national scope and organizational structure. The process begins with stakeholder engagement at the national level and capacity building for companies interested in providing renewable energy services. This effort will be led by the PIU, with support from the RCU (Regional Coordination Unit). During project implementation, sub-projects will be screened to identify environmental and social risks and adverse impacts in order to develop appropriate mitigation measures in line with national environmental regulations and ESS requirements. The purpose of screening is to: (i) determine whether activities are likely to have potential negative environmental and social risks and impacts; and (ii) identify appropriate mitigation measures. For activities with adverse risks or impacts, the mitigation measures are then incorporated into the implementation of the activity, e.g., through appropriate environmental and social management plans, the implementation of which is monitored and reported.

The DRE companies will conduct and document the environmental and social screenings as part of their prospective activities. Those screenings and the ESIAs shall be approved by the PIU before contract negotiations begin. The PIU is responsible for verifying, among others, that adequate stakeholder engagement has occurred, including the management of grievances, and that national law and market-compliant willing-buyer willing-seller agreements have been signed if relevant.

The DRE companies' eligibility conditions will incorporate E&S criteria, some of which will be met prior to contract signature, and others will be prepared and implemented during contract execution, for instance, the LMP, Operational Health and Safety Conditions, and construction-specific ESMPs. The RFM (Regional Fund Manager) will ensure that the environmental and social conditions are met or included, as relevant, in the draft agreement and will recommend that PIU enter into the grant agreement with the company. Such an agreement will include an annex specifying the E&S requirements that the company or consortium must fulfill. Before any grants are disbursed, the Independent Verification Agent (IVA) will verify that all environmental and social eligibility conditions outlined in the grant agreement and the Project Operation Manual (POM) are satisfied.

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The PIUs will be responsible for regular supervision of activities at the national level. The IVA will also collect and monitor reports on the implementation of environmental and social risk management measures. The PIU will all be staffed with at least one environmental and social specialist, as well as one gender-SEA/SH-stakeholder engagement level at the national level.

Moreover, the PIU will provide overall direction and have primary responsibility for E&S due diligence, the implementation of E&S instruments, and the monitoring and enforcement of compliance. Specific arrangements and responsibilities for each component are as follows:

- Under **Component 1**, the PIU will establish operating guidelines [2] and specific construction requirements for site and developer selection, which include E&S aspects. Competent private sector mini grid developers who apply for grants to support their activities for the identification,[3] development, construction, and operation of mini grids across the country will have to indicate in their respective proposals how they intend to address E&S sustainability issues that could be associated with these activities. These selected companies will be responsible for putting in place environmental and social safeguards instruments satisfactory to RREA, for implementing the E&S risk identification and management measures on the ground, to ensure subproject compliance with applicable E&S requirements as stated above.
- Under **Component 2**, the PIU will establish company selection criteria and compliance clauses in the grant agreement, both of which will include E&S requirements. Qualified companies will install units of rooftop solar per the grant agreement and will be required to have an ESIA that will focus on key risks for this component (labor issues, battery/ waste management, and OHS issues).

Institutional Arrangements for ESMF Implementation

A successful implementation of an ESMF depends on the commitment and capacity of the PIU, associated institutions, and the private sector to apply or use the ESMF effectively. The project will leverage existing PIUs implementing DRE-related projects with project preparation until the RCU, and subsequently, country PIUs are set up. The PIU, in collaboration with the EPA and the key stakeholders, will carry out the:

- Enforcement of all environmental and social legislation in each country;
- Obtain all relevant permits required by the project;
- Verify that the willing buyer and willing seller agreements are legally formalized;
- Minimize the impacts of physical development on the ecosystem;
- Preservation, social cohesion, conservation, and restoration of adverse impact on all ecological processes are essential for the preservation of biological diversity;
- Protection of air, water, land, forest, and wildlife within the county;
- Pollution control and environmental health in the county.

The role of the PIU/Rural and Renewable Energy Agency (RREA) E&S Team will verify the E&S screening carried out by the DRE companies and confirm the nature and magnitude of sub-projects' potential environmental and social risks and impacts. The E&S team will categorize risks and

[2] There are two processes for E&S risk management for this component. One covers the minimum subsidy tender, and the second covers the performance-based grant process for mini grid developers. Conceptually, these processes are very similar (with the difference in timing of certain steps) and thus are presented here as one.

[3] The PIU's involvement will primarily be through the identification of demand for electrification in a range of communities for the minimum subsidy tender, but the actual mini grid sites within these communities will be identified by private sector developers. For the performance-based grants, private sector developers will select both the community and the exact location of the proposed mini-grids within those communities.

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impacts of each subproject screened by the DRE companies and will be responsible for determining their risk rating in accordance with risk classification guidelines provided in ESS1. The E&S Team will also be responsible for supervising the contractor during implementation of the sub-projects and ensuring that the contractor's ESMPs are correctly implemented in line with the EPML of Liberia, and applicable World Bank Environmental and Social Standards, and the World Bank Group Environmental and Safety Guidelines for electric power transmission and distribution.

The PIU's E&S Team will prepare and submit to the World Bank regular monitoring reports on the environmental, social, health, and safety (ESHS) performance of the Project, including, but not limited to, incidents or accidents, stakeholder engagement activities, and a Grievance Mechanism (GM). The report shall also incorporate the status of the implementation of ESMPs and other relevant E&S documents, including the SEP, the LMP, and the ESCP. These reporting requirements will also be included as part of the project Operation Manual and in relevant contracts.

Consultations and Stakeholder Engagement

Stakeholder consultations and engagement are sequenced in a three-stage process designed to progressively expand participation consistent with the evolution of project activities from design to implementation. As project activities will become spatially and socially more specific, public stakeholder consultation and engagement will expand and deepen. The three stages of public consultations are: Strategic, Regulatory, and Market Consultations; Regional, District Civil Society Stakeholder Consultations and Engagement; and Local Government, Community, and Citizens Consultations and Engagement. This sequencing ensures that stakeholders are engaged at the point where decisions remain influenceable, and that consultation intensity increases as geographic footprints and potential impacts become clearer, consistent with the principles of meaningful consultation, inclusiveness, proportionality, and iterative feedback loops under ESS10.

Three Bank-led technical meetings with selected institutional stakeholders and private stakeholders took place during project preparation. The meetings focused on strategic, regulatory, and market aspects of the project. Additional consultations will be carried out continuously throughout the project implementation in line with the three-phase approach, consistent with the Stakeholder Engagement Plan (SEP). Categories of stakeholders to be consulted include, but are not limited to:

Government and regulatory agencies

- Ministry of Mines and Energy
- Ministry of Finance and Development Planning
- Rural and Renewable Energy Agency
- Environmental Protection Agency
- Ministry of Public Works
- Liberia Land Authority

Private sector investors

- Distributed renewable energy firms (DRE), Banks, and E-waste recycling firms

Non-Governmental Organizations

- Civil society organizations - Community-based organizations

Local stakeholders

- Local leaders - People living near facilities to be constructed by the project - People whose land is acquired by the project - People whose livelihoods are affected by the project.

Disadvantaged and vulnerable groups

- Elderly - individuals with chronic diseases and pre-existing medical conditions –

Persons with disabilities. Women and girls - Children with special needs - Orphans

All the above stakeholder shall be consulted and engaged through the implementation of the SEP. The SEP is a living document that shall be updated to continuously identify all project stakeholders, including their priorities and concerns, to inform project implementation, including monitoring and management of grievances.

Grievance Resolution Mechanism (GRM)

The GRM provides complaint resolving measures for any project-related dispute, appropriate redress actions, and avoids the need to resort to judicial proceedings. A project-level grievance redress mechanism has been established in the SEP. The GRM provides opportunities to settle matters amicably at the local level, before they are escalated to the judicial level. The GRM includes matters related to GBV/SEA/SH, which shall be handled with confidentiality. The project GRM may also address disagreements about electricity access and other related matters. The PIU will assign a specific staff member to ensure that this is functioning properly. The GRM shall be activated prior to hiring any project worker. Local language brochures should be provided, reiterating the functioning of the GRM. A separate GRM for workers, incorporated into the Labor Management Procedure (LMP), shall be prepared by the effective date to manage work-related matters.

Capacity Building

For effective implementation of the ESMF, the E&S capacity of the PIU shall be enhanced. For effective implementation of the ESMF, the E&S capacity of the PIU shall be enhanced; likewise, the capacity of its associated agencies, ministries, and the DRED companies. The RCU shall facilitate the training of the PIU, its associate government institutions, and the DRED companies by acquiring the services of seasoned international consultants. The PIU E&S specialists shall facilitate and/or provide training to counties, districts, and community stakeholders, likewise, to selected DRED company entities. The future E&S specialists, including the gender or GBV specialist, shall be provided with training on project risks, impacts, mitigation measures, and their monitoring and reporting responsibilities.

Disclosure of the ESMF

The DARES Project national project preparation Office/PIU will disclose the ESMF as required by the Liberian EIA public notice and review procedures, as well as the World Bank ESS Disclosure Policy. Copies of other E&S instruments are required to be disclosed in the same manner. The ESMF and subproject ESIA, ESMP, and other relevant instruments will be disclosed by the PIU on the PIU/RREA and the EPA websites. -----

Table 1: *Estimated Budget to Implement the ESMF*

Activities	Unit	No. of Units	Unit Cost (US$)	Extended Cost (US$)	Comments
Salaries for three (3) E&S Specialists, including GBV at PIU	Months	60	12,000	720,000	Salaries will be subject to contract renewal based on satisfactory performance
Salaries for recruiting three (3) E&S support staff at PIU	Months	60	1,850	410,700	Salaries will be subject to contract renewal based on satisfactory performance

Capacity building for E&S staff of LEC, RREA, MME, EPA, DRE companies, and civil society	L/S	5	115,000	575,000	An estimated 30 trainees from the four institutions for a period of 5 years.
Preparation of the training manual, including the cost of reproduction	L/S	1	15,000	15,000	
Disclosure, implementation & Monitoring of safeguards	L/S	1	15,000	75,000	
Total Cost US$				1795,700	

Introduction

2.1. Context and Project Background

Liberia's electricity access reaches just 31.8 percent overall, about 10 percent in rural areas, leaving more than 3.6 million people unserved. Planning models that layer existing grid assets onto demand forecasts conclude that DRE (Distributed Renewable Energy) offers the lowest-cost answer for just over 35 percent of the population. A key pillar for the CPF of Liberia is 'Narrowing the Infrastructure Gap to Foster More Equitable Development Nationwide' (Pillar III), which identifies the expansion of electricity services through both grid and off-grid options, including harnessing the country's renewable energy resources, as a priority activity. Additionally, Liberia's National Energy Compact aims to provide electricity access to an average of 100,000 households per year: about 60,000 via grid, 15,000 through mini-grids, and 25,000 through off-grid/solar home systems, achieving a national electricity access rate of 75 percent by 2030. The DARES regional project offers the fastest economically and environmentally sustainable path to provide the Western and Central African region's (AFW's) most vulnerable and remote rural communities with affordable energy services while also unlocking jobs, growth, and improved human capital outcomes.

The DARES Liberia project has a nationwide scope. The project aims to provide electricity to households, firms, and public institutions in a least cost and timely manner. Most of the project's funds will be used to stimulate private construction and operation of off-grid electricity supply systems by providing financial incentives and technical support. Some of the project funds will be used to acquire, by competitive tender, supply systems for selected institutions/communities. The project will also co-finance Technical Assistance.

In Liberia, the Rural and Renewable Energy Agency (RREA), through the Project Implementation Unit (PIU), will be responsible for screening subprojects, reviewing and clearing environmental and social instruments, monitoring compliance during implementation, and submitting environmental and social performance reports to the World Bank. This institutional arrangement will guide the application of the ESMF and other project instruments throughout the project cycle.

2.2. Project Development Objectives and Components

The PDO is to increase electricity access for households, businesses, and public institutions using private sector-led Distributed Renewable Energy Solutions in Liberia. Progress toward the achievement of the PDO will be measured by using the following indicators:

a. People provided with access to electricity (number);
b. Farmers and MSMEs provided with access to electricity (number);
c. Public institutions (schools, healthcare facilities) provided with access to electricity (number)

The DARES Program is structured around four components. In Liberia, the project will support decentralized renewable energy market development to accelerate electricity access in rural and peri-urban areas. The indicative activities to be financed will be aligned with the following components:

Component 1 (US$250 million): Connecting People and Businesses with affordable DRE solutions, including mini-grids, mesh-grid, and standalone systems to foster local development.

Component 2 (US$100 million): Powering Food Security through DRE-based irrigation, cooling, and agri-processing solutions to build resilience of food supply chains in West Africa.

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Component 3 (US$50 million): Powering Human Capital through the roll-out of the "Energy-as-a-Service" (EaaS) model to strengthen critical public infrastructure (incl. health centers and schools).

Component 4 (US$50 million): Technical Assistance focused on enabling environment as well as regional tender design and capacity building of national Rural Electrification Agencies and Sector Regulators.

The country allocation for the Republic of Liberia is US$45 million. The Liberia budget allocation per project component will be confirmed during project appraisal and detailed in the Project Appraisal Document (PAD).

The scope of the project is country-wide. DARES Liberia will cover all fifteen (15) counties of Liberia, focusing on underserved communities. The selection of the number of beneficiary communities in each county will be subject to government and private sector consultations, establishing clear and transparent investment criteria prior to project effectiveness.

2.3. ESMF Objectives

This ESMF has been prepared as a guideline to address potential risks and impacts in the implementation of the project, as the environmental and social impact assessment (ESIA) of the project cannot be carried out until sub-project locations have been identified. The ESMF sets out the principles, rules, guidelines, and procedures that the PIU/Rural and Renewable Energy Agency (RREA) should follow when assessing the environmental and social risks and impacts of sub-projects activities. It provides: i) measures and plans to reduce, mitigate and/or offset subprojects' adverse risks and impacts, ii) basis for estimating and budgeting the costs of mitigation measures, iii) information on the role and responsibilities of the RREA in addressing environmental and social risks and impacts, iii) general information on all the fifteen (15) counties of the country in which subprojects are expected to be located and any potential environmental and social vulnerabilities of the area; and iv) on the potential impacts likely to occur and mitigation measures expected to be used. This ESMF is a screening tool to identify potential environmental and social impacts and mitigation measures for project and sub-project activities within the context of DARES. This ranges from no environmental work being required or the application of simple mitigation measures to the preparation of comprehensive ESIA reports and ESMPs. The process is consistent with Liberia's environmental policies and laws and the World Bank Environmental and Social Framework. Environmental and social screening procedures will enable implementers to identify, assess, and propose mitigation measures for potential negative environmental and social impacts identified. The specific objectives of the ESMF are as follows:

a. Assess the potential E&S risks and impacts of the proposed project and propose their mitigation measures;
b. Establish clear procedures and methodologies for the environmental review, approval, and implementation of projects in the energy and electricity sector;
c. Establishes procedures for the safe handling, storage, and disposal of hazardous materials, including solar batteries and electronic waste, in a context where formal waste management systems are limited;
d. Specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring E&S issues/concerns related to the activities;
e. Determine the environmental management capacity building needs for the EPA, MME, RREA, and LEC;

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f. Address mechanisms for public consultation and disclosure of project documents as well as redress of possible grievances;
g. Establish the budget requirements for implementation of the ESMF;
h. Determine the institutional arrangements needed to satisfactorily screen subprojects, including identification of the safeguard instruments to be prepared, the hiring of the consultants who will prepare them, and the identification of who will supervise the work of the consultants and contractors;
i. identify who will be responsible for the preparation of the TORs for ESIAs, and the ESMPs.
j. Provide resources for implementing the ESMP.

2.4. Environmental and Social Risk

Overall, both environmental and social risks of the project are rated substantial. The environmental risk of the project is rated substantial due to the nature and scope of program activities, the environmental sensitivities of the beneficiary countries, the local context, and the capacity of the respective countries to manage the environmental risks of the program activities. The environmental risks are attributable to activities proposed under components 1, 2, and 3 on the provision of solar-powered systems to households and businesses, solar irrigation and cold chain schemes for agricultural productivity, and standalone solar systems to public institutions, respectively. The capacity of the Rural and Renewable Energy Agency (RREA) and the Department of Alternative Energy at the Ministry of Mines and Energy responsible for rural electrification to manage E&S risk of these activities at the construction and operation stages should be strengthened in anticipation of these risks by recruitment of competent specialists and establishment of an institutional Environmental and Social Management System (ESMS) for risk management, monitoring, and reporting. Given the weak capacity of these institutions, experienced consultants who have worked on Bank-financed projects of at least similar risk magnitude are key to developing a sustainable system and complementing team efforts.

The social risk of the project is rated substantial for the following reasons. The program could generate low to moderate levels of involuntary resettlement for the mini-grids, irrigation pumping stations, and the cold storage and agro-processing infrastructure. There could be minor involuntary resettlement impacts for the connection to the mini-grids and off-grid electricity solar systems. Occupational health and safety (OHS) risks are moderate to substantial, with higher risks involved in the installation and operationalization of rooftop solar systems for public institutions and the handling of chemicals and heavy metals. While the number of labor influx is expected to be limited, they are likely to enter remote, vulnerable communities where they will have a substantial power difference. There are labor risks in the solar PV supply chain. Depending on the technology used, energy storage in batteries poses a specific fire hazard for runaway fires. The involvement of multiple private sector companies implementing sub-projects simultaneously, the risks of elite capture and nepotism linked to access to project benefits (electricity services), combined with the challenges in stakeholder engagement and monitoring social risks in difficult and remote areas, justify the risk rating.

2.5. Approach for ESMF Preparation

This ESMF has been prepared in accordance with the guidelines of the World Bank's ESS requirements and applicable Liberian environmental assessment procedures and guidelines. The following approach and techniques were used in the development of this ESMF:

- Literature review and data gathering through a desktop study.
- Virtual communications with the existing energy project PIU.

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- Lessons learnt from the implementation of the Regional Emergency Solar Power Intervention Project (RESPITE).
- Review of minutes of technical meetings between the World Bank and targeted institutional and private stakeholders as part of project preparation.
- Data analysis for risks/ impacts identification and guidelines for the preparation of ESMPs for similar projects.

To ensure that all project activities are appropriately screened for environmental and social issues at their conception stage, a simple screening tool (See Annex: 15. 5) was developed to screen each project in terms of:

- Appropriate risk category
- Applicable local and international regulations and standards (e.g., labor, pollution, occupational health, and other standards
- Applicable World Bank standards
- Level of stakeholder engagement (both sectoral and project level)
- Existing environmental and other (e.g., compensation) risk management measures; and
- Location sensitivities (e.g., sensitive environments and culture)

The screening tool provides the necessary information to appropriately scope ESIA studies and/or prepare ESMPs. These will include environmental, social, and other due diligence activities, including security measures.

3. POLICY FRAMEWORK

3.1. National Energy Policy

In February 2007, the GOL, through the Ministry of Land, Mines, and Energy, now MME, with the support of the United States Agency for International Development (USAID), published the National Energy Policy (NEP). The principal objective of the NEP is to ensure universal access to modern energy services in an affordable, sustainable, and environmentally friendly manner in order to foster the economic, political, and social development of Liberia.

The NEP assumes the implementation of proposed energy sector reforms founded on three essential features: (1) demonstrating the Government's resolve for good governance and ensuring financial transparency in all sector transactions; (2) overcoming the significant obstacles to private sector investment in energy supply; and (3) creating the requisite institutional and legal framework and an independent regulatory regime. In undertaking energy sector reform, the Government will also be addressing a key component of Liberia's commitment to the World Bank and other donors for debt relief under the program for Highly Indebted Poor Countries.

The NEP addresses the following strategic issues that are implied in the principal policy objective: access, quality, cost, and institutional framework. These issues refer to the need for the various technologies and delivery options for energy products and services to be available, acceptable, affordable, and adequate. The NEP was approved by the Cabinet in 2009.

3.2. National Environmental and Occupational Health Policy

The Ministry of Health (MOH) has a Division of Environmental and Occupational Health; however, the Division lacks standards and policies that specifically speak to industrial hazards, occupational safety, and health. The National Environmental and Occupational Health Policy (NEOHP) was

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developed in 2007 to provide a framework for identifying policy needs and actions to improve occupational health and safety. It supplements the National Health Policy, which focuses on public health and health systems. The NEOHP identified the following key environmental and occupational health needs:

1. Environmental Sanitation
2. Food Safety Services
3. Water Quality and Safety
4. Vector Control and Chemical Safety
5. Waste Management
6. Disaster Management
7. Health Promotion
8. Occupational Health Services
9. Port Health
10. Pollution Control
11. Sanitary Engineering

3.3. Land Right ACT, 2018

The **Land Rights Act, 2018** is the principal legal framework governing land rights in Liberia and should serve as the main reference for land-related issues under this ESMF. The Act recognizes and defines the main categories of land in Liberia and provides the legal framework for the recognition and protection of land rights. It is therefore the controlling legal reference for land ownership, land tenure, customary land, private land, public land, and project-related land access arrangements in Liberia.

The Act recognizes the following land categories:

- **Public Land** – land vested in the Republic and not otherwise designated as Government Land, Customary Land, or Private Land. This category is relevant where project activities may involve land that is not privately owned or customarily held and where the legal status of land must be confirmed before site selection or land access decisions are made.
- **Government Land** – land owned or used by the Government for public purposes and administration. This category is relevant where project facilities may be proposed on land already under government control or where land access may involve public institutions or state-held land.
- **Customary Land** – land owned by a community and governed in accordance with customary practices and the Act. This category is particularly relevant to the project because subprojects in rural areas may affect or require access to community land, and such land must be addressed in a manner consistent with legal recognition of customary ownership and community decision-making processes.
- **Private Land** – land held by an individual, family, or other private rights holder under recognized private ownership. This category is relevant where project-related land access may involve privately held plots, structures, or assets and where any negotiated land arrangement must be based on lawful ownership and proper documentation.

3.4. National Health Policy and Plan 2012-2031

The National Health Policy 2022–2031 is the current policy framework guiding Liberia's health sector and provides the relevant policy basis for this ESMF. It replaces the expired National Health

Policy and Plan 2011–2021 and sets the national direction for improving access to essential and quality health services, strengthening the health system, and advancing universal health coverage. The policy is supported by the Health Sector Strategic Plan 2022–2026, which serves as the current implementation framework for delivery of national health sector priorities. For purposes of this ESMF, this framework is relevant to public health, service delivery, institutional coordination, and community health considerations that may arise during project implementation in Liberia.

The policy is informed by lessons from previous health sector reforms, implementation experience, and updated data on the health status of the Liberian population. It provides an evidence-based framework for improving health service delivery and strengthening the national health system.

The current policy framework seeks to improve the effectiveness of the health sector by:by:

a) Improving the timely access to high-impact, evidence-based interventions and strengthening referral between all levels of the system.
b) Increasing the utilization of services by improving the population's care-seeking behavior, the quality of care, and the availability of essential drugs and equipment; and
c) Improving the coherence between strengthening the existing workforce, producing additional workers with the right skills mix, deploying according to service delivery needs, and retaining skilled providers where they are most needed.

The policy also deduced that the health sector can become more efficient by:

a) Allocating resources among counties according to equitable criteria and optimally distributing resources to health facilities according to population size, utilization, and workload.
b) Improving the coordination of all efforts to support health and social welfare services, eliminating duplication, and minimizing gaps; and
c) Creating a culture at all levels of the system that values and strives to do more for the population within existing levels of resources.

3.5. National Water Supply and Sanitation Policy (April 2009)

In conformity with the Government's Poverty Reduction Strategy (PRS) 2008 – 2011, and the National Integrated Water Resources Management Policy, Liberia's vision of the Water Supply and Sanitation Policy shall be: using clean water supply and safe sanitation as a vehicle for reducing the water supply and sanitation related disease burden, increasing productivity, promoting human welfare and setting the nation on a path towards long-term sustainable growth, development, and poverty reduction.

This policy provides guidance and direction in institutional, economic, and legal reforms that will lead to improved water governance at national, local, and community levels, and improved access to safe water supply and adequate sanitation, in an affordable, sustainable, and equitable manner, to all the people of Liberia. The guiding principles of Liberia's Water Supply and Sanitation Policy are based on a holistic approach incorporating considerations for equity, efficiency, environmental and service sustainability, and recognize international WSS principles such as those articulated in the 1992 Dublin Principles.

Water, Sanitation, and Hygiene (WASH) developed Pillar Standards Operating Procedures (SOP) on Safe Management of Healthcare for COVID-19 in Liberia (April 2020). This SOP contains information that can be used during the construction phase, handling and disposal of waste materials such as face masks or face shields and gloves used by workers on site to prevent the spread of COVID-19.

3.6. National Gender Policy 2009

The National Gender Policy aims to eliminate the marginalization of women and girls by 2020, among other things by promoting gender-equitable socioeconomic development; enhance women's and girls' empowerment; increase gender mainstreaming in national development; and create strengthen structure, processes and mechanisms in which women participate equally and that ensure that women and men can equally access, control, and benefit from the country's resources.

Section 4.1.9 focuses on sexual and reproductive health, adolescents' rights, and elimination of harmful traditional practices and gender equality, including supplying free health and clinical services for rape survivors.

Section 4.1.6 focuses on human rights and GBV and calls for welfare programs to rehabilitate/reintegrate GBV survivors, the establishment of shelters and provision of psychosocial support facilities, and regular conduct of GBV situation assessment. It also calls for strengthening legislation to respond to GBV, including rape, sexual exploitation and abuse, domestic violence, early and forced marriage, and human trafficking, as well as the enhancement of capacity in law enforcement and health care providers to effectively respond to GBV cases.

3.7. National Integrated Water Resources Management Policy (2007)

The **National Integrated Water Resources Management (IWRM) Policy (2007)** is a relevant policy reference for this ESMF because it provides the national framework for coordinated and sustainable management of Liberia's water resources. The policy promotes integrated planning and management of water resources across sectors and emphasizes efficient use, protection of water sources, and improved institutional coordination in water governance.

For purposes of this Project, the IWRM Policy is relevant to water use and abstraction, protection of community water sources, wastewater and runoff management, and the need to avoid adverse impacts on surface and groundwater resources during construction and operation. It is also relevant where project activities may involve productive-use energy systems that depend on water resources or may affect local drainage and sanitation conditions.

3.8. National Renewable Energy Action Plan (NREAP)

The **National Renewable Energy Action Plan (NREAP)** is a relevant policy framework for this Project because it sets out Liberia's strategic direction for scaling up renewable energy and expanding access to modern energy services. The NREAP supports increased deployment of renewable energy technologies, particularly in underserved and off-grid areas, and provides a policy basis for promoting sustainable energy solutions consistent with national development priorities.

The NREAP is directly relevant to DARES Liberia because the Project is centered on distributed renewable energy solutions, including mini-grids, standalone solar systems, and energy systems for productive and public uses. The policy therefore provides an appropriate strategic basis for the Project's focus on renewable energy access, sustainability, and private sector participation in decentralized energy service delivery.

3.9. National Adaptation Plan (2020–2030)

Liberia's **National Adaptation Plan (NAP) 2020–2030** is relevant to this ESMF because it provides the national framework for addressing climate change adaptation across priority sectors, including energy. The NAP seeks to strengthen resilience to climate-related risks and to guide sector planning and investment in a manner that reduces vulnerability and improves adaptive capacity.

This policy framework is relevant to the Project because distributed renewable energy systems will be implemented in rural and remote areas that may face climate-related vulnerabilities, including extreme rainfall, flooding, heat stress, and infrastructure access constraints. The NAP therefore provides an important policy context for integrating climate resilience, sustainability, and risk-informed planning into project design and implementation.

3.10. Liberia's Updated Nationally Determined Contribution (NDC)

Liberia's **Updated Nationally Determined Contribution (NDC)** is relevant to this ESMF because it sets out the country's current climate commitments under the United Nations Framework Convention on Climate Change and identifies priority sectors for mitigation and adaptation, including the energy sector. The Updated NDC recognizes the importance of renewable energy development, energy access expansion, and low-carbon growth pathways in supporting national climate objectives.

For this Project, the Updated NDC provides a policy basis for linking distributed renewable energy investments to Liberia's broader climate commitments. It is therefore relevant to the Project's renewable energy rationale, climate co-benefits, and the integration of environmental sustainability considerations into project implementation.

3.11. Liberia WASH Compact (2011)

The **Liberia WASH Compact (2011)** is also relevant as a sector implementation framework that supports coordination and delivery in the water, sanitation, and hygiene sector. The Compact complements the Water Supply and Sanitation Policy by setting out sector commitments, institutional responsibilities, and implementation priorities for improving access to safe water and sanitation services.

In the context of this ESMF, the WASH Compact is relevant to worker sanitation arrangements, hygiene conditions during construction, protection of community water points, and coordination with sector institutions where project activities may affect local water and sanitation conditions. It therefore strengthens the policy context for water, sanitation, and hygiene management during project implementation.

4. LEGISLATIVE AND INSTITUTIONAL FRAMEWORK

4.1. The Constitution of Liberia

The 1986 Constitution of Liberia provides the basis for environmental protection in Liberia. The Constitution provides that the Republic shall, consistent with the principles of individual freedom and social justice enshrined in the Constitution, manage the national economy and the natural resources of Liberia. Specifically, Article 7 of the Constitution states, "The Republic shall, consistent with the principles of individual freedom and social justice enshrined in the constitution, manage the natural economy and natural resources of Liberia in such manner as shall ensure maximum possible participation of Liberian citizens under conditions of equality as to advance the general welfare of the Liberian people and the economic development of Liberia". Therefore, it calls for natural resources protection and gives the right to every Liberian to fully participate in the management of these resources.

The Environmental Protection Agency (EPA) of Liberia is the lead agency for environmental protection in Liberia. The EPA Act, which created the EPA, gives the EPA the authority to coordinate,

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monitor, and supervise all activities in the protection of the environment and the sustainable use of natural resources. The specific functions of the Agency include the following:

- Review project documents for donor-sponsored environment-related projects to ensure and/or recommend to the negotiating ministry or agency, the inclusion of strategies and activities for capacity building of nationals.
- Identify projects, activities, policies, and programs for which an environmental impact assessment must be conducted under this Act.
- Build the capacity of line Ministries, authorities, and organizations through the exchange of data and information, and render advice, technical support, and training in environment and national resource management to enable them to carry out their responsibilities effectively.
- Ensure the preservation and promotion of important historic, cultural, and spiritual values of natural resources heritage and, in consultation with indigenous authority, enhance indigenous methods for effective natural resource management.
- Promote public awareness through public participation in decision making and formal and non-formal education about the protection and sustainable management of the environment, and to allow, at minimal or no costs, access to environmental information and records made in connection with this Act;
- Establish environmental criteria, guidelines, specifications, and standards for production processes and the sustainable use of natural resources for the health and welfare of the present generation, and to prevent environmental degradation for the welfare of future generations; and
- Review and approve environmental impact statements and environmental impact assessments submitted in accordance with this Act.

4.2. The Environmental Protection Agency Act

"An Act to establish a monitoring, coordinating and supervisory authority for the sustainable management of the environment in partnership with regulated Ministries and organizations and in a close and responsive relationship with the people of Liberia; and to provide high quality information and advice on the state of the environment and for matters connected therewith."

Thus, the Environmental Protection Agency of Liberia (EPA) was created by the Act creating the Environmental Protection Agency of the Republic of Liberia, known as the Environment Protection Agency Act. The Act was approved on November 26, 2002, and published on April 30, 2003. The establishment of the EPA marked a significant step forward in the protection and management of the environment of Liberia.

Section 37 of the EPA Act requires the project proponent or developer to conduct an environmental impact assessment and obtain a permit from the EPA before undertaking activities that require environmental impact assessment as defined by the EPA in its policies, guidelines, and regulations. Moreover, the EPA is empowered to carry out, among other things, the following aspects of environmental protection and management in Liberia:

- Establish environmental criteria, guidelines, specifications, and standards for production processes and the sustainable use of natural resources for the health and welfare of the present generation, and to prevent environmental degradation for the welfare of future generations

- Identify projects, activities, and programs for which an environmental impact assessment must be conducted under this Law
- Review and approve environmental impact statements and environmental impact assessments submitted in accordance with this Act
- Monitor and assess projects, programs, and policies, including activities being carried out by relevant ministries and bodies to ensure that the environment is not degraded by such activities and that environmental management objectives are adhered to and adequate early warning and monitoring on impending environmental emergencies is given
- Review sectoral environmental laws and regulations recommend amendments and initiate proposals for the enactment of environmental legislation in accordance with this Act or any other Act
- Encourage the use of appropriate, environmentally sound technologies and renewable sources of energy and natural resources
- Function as the national clearinghouse for all activities relating to regional and international environment-related conventions, treaties, and agreements, and as national liaison with the secretariat for all such regional and international instruments.

Therefore, for the implementation of DARES, subproject activities may require the preparation and implementation of an Environmental and Social Impact Assessment (ESIA) and ESMPs once the specific sites are known for the implementation of sub-projects. Additionally, contractors' Environmental and Social Management Plans (C-ESMPs) will be developed for the management and mitigation of project-specific risks and impacts during implementation of DARES.

4.3. Environmental Protection and Management Law (EPML) of Liberia

The EPML forms the legal framework for sustainable development, management and protection of the environment and natural resources by the EPA in partnership with relevant institutions and individuals. It guides on the management and provides information on the state of the environment of Liberia. It is the framework for formulation, reviewing, updating, and harmonizing all environment-related sectoral laws. The EPML also addresses a wide range of environmental issues, including ESIA, environmental auditing and monitoring, environmental quality standards, pollution control and licensing, guidelines and standards for the management of the environment and natural resources, protection of biodiversity, national heritage, and the ozone layer, amongst many others. Specifically, part III of the 2003 Law establishes a comprehensive framework for ESIA, including procedures and substantive standards for the approval and rejection of projects. It also provides for public participation and procedures for appeals against EPA decisions.

Section 15 of the EMPL states that business investors should present an environmental mitigation plan to the EPA, which should include the following sections:

- Objectives
- Description of activities to be carried out by the project to mitigate any adverse effects on the environment
- Period within which the mitigation measures shall be implemented

Proven efficacy of the mitigation measures by indicating their experimental nature. Section 12 of the EPML requires environmental review for projects or activities that may have a significant impact on the environment. The project proponent shall submit to the EPA their plans for improving environmental performance, including:

- Identification of the major environmental effects; and

- A comprehensive mitigation plan in accordance with section 15 of this Law.

Section 6 of EPML requires an Environmental Impact Assessment license or permit for the commencement of such projects, and Section 13 requires the preparation of an environmental impact study for such a project.

Section 24 of the EPML requires that the EPA ensure that projects comply with their environmental mitigation plan through monitoring of their operations. Where evidence of non-compliance occurs, the EPA shall impose remedial measures and may bring action before the Environmental Court or through the Ministry of Justice to enforce compliance.

Section 25 of the EPML gives responsibility to the EPA to carry out periodic environmental audits of activities or projects that are likely to have adverse effects on the environment

Section 58 of the EPML requires that a license be obtained from the EPA for any type of effluent discharge into the sewage system, also in the case of operation of a sewage system. This license is provided by the EPA for a period that does not exceed 1 year.

Section 61 of the EPML prohibits pollution of all Liberian Waters. In case of water pollution, a sentence and/or a fine is/are imposed on the polluting party. The latter is also responsible for the cost of the removal of the pollutant and the restoration, restitution, or compensation as determined by a law court.

Section 62 of the EPML bans pollution by solid waste of any land, coastal zone, or water surface, street, road, or site in or on any place to which the public has access, except in a container or at a place which has been specially indicated, provided, or set apart for such purpose. In case of such pollution, a fine or a prison term is imposed on the polluting party. The latter is also responsible for the clean-up of the solid waste pollution it caused.

Section 64 of the EPML requires the acquisition of a “Solid and Hazardous Waste Disposal License” in case of generation, storage, handling, transport, or disposal of hazardous waste, or else ownership or operation of a waste disposal site. The EPA provides this license for a period of not more than one year. This license entails the party who is generating waste to take up waste management measures such as treatment, determination, or recycling and remediation.

Section 71 of the EPML requires the acquisition of a “Pollution Emission License” for any project or activity that is likely to pollute the environment in excess of any standards or guidelines issued under the EPML. This license is provided by the EPA for a period of not more than one year.

Section 75 of the EPML prohibits the following activities in relation to a river, lake, or wetland that is declared as a protected area by the EPA. These activities include:

- Use, erect, construct, place, alter, extend, remove, or demolish any structure in, on, under, or over the bed
- Excavate, drill, tunnel, or disturb the bed otherwise
- Introduce or plant any part of a plant, plant specimen or organism, whether alien or indigenous, dead or alive, in a river, lake, or wetland
- Introduce any animal or micro-organism, whether alien or indigenous, dead or alive, in a river, lake, or wetland
- Deposit any substance in a river, lake, or wetland or in or under its bed, which is likely to have adverse environmental effects on the river, lake, or wetland; direct or block a river, lake, or wetland from its natural and normal course; and
- Drain any river, lake, or wetland.

Section 91 of the EPML states that the EPA may impose on the party that has caused or is likely to cause harm to the environment an "Environmental Restoration Order" requiring it to remedy/prevent the harm within 21 days of the service of the order. Section 92 allows the party to request the Agency reconsider that order by giving reasons in writing within the same period. Section 107 states that non-compliance with the restoration order convicts the party responsible for imprisonment and/or a fine.

4.4. Liberia Land Commission Act of 2009

The objective of this act is to propose, advocate, and coordinate reforms of land policy, laws, and programs in Liberia. It does not have an adjudicatory or implementation role. The goal of the commission is "to develop a comprehensive national land tenure and land use system that will provide equitable access to land and security of tenure so as to facilitate inclusive sustained growth and development, ensure peace and security, and provide sustainable management of the environment."

The function of the Liberia Land Commission was statutorily conferred on the Liberia Land Authority (LLA), which was established on October 6, 2016, as an autonomous agency, by an Act of the Legislature. The LLA is now clothed with the statutory function in areas of land use management, governance, and administration of public land, government land, private land, and customary land in Liberia, including surveys and cartography, deeds and titles registry, and supervision and coordination of the function of county land commissioners.

Liberia Land Authority Act 2016

This act establishes the Liberia Land Authority (LLA) as the institutional body responsible for land administration, including ownership, valuation, use, and coordination of land management across central and local levels.

Liberia Land Rights Act 2018

The act defines land ownership categories (Private, Customary, Government, and Public Land) and outlines mechanisms for proof, protection, and registration of land rights. Recognizes customary and women's land rights and establishes procedures for dispute resolution and community participation.

4.5. The Public Health Law: Title 33 of the Liberian Code of Law Revised of 1976

This Act provides comprehensive legislation on matters relating to public health, including control of diseases, environmental sanitation, and regulation of Drug Medical Waste Management Approval Guideline for Liberia (2019). The government of Liberia promulgated the Medical Waste Revised Guidelines 2019 for the processing and management of medical waste in Liberia. It was prepared through active participation with the MoH, NPHIL, and the WHO, mainly with the objective to manage healthcare wastes at healthcare facilities, increase access to basic services and improved sanitation, and protect the environment.

4.6. The Decent Work Act of Liberia

The Decent Work Act is the national labor legislation that outlines workers' rights. The Decent Work Act (2015) contains provisions on several issues, including, but not limited to, wages and deductions, working hours and breaks, leaves, labor disputes, and Occupational Health and Safety (OHS). Accordingly, all developers, contractors, and subcontractors engaged under the project shall comply fully with the labor standards and worker protection requirements set out in the Decent Work Act of Liberia. This shall include compliance with statutory provisions on wages, working

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hours, leave, non-discrimination, labor conditions, dispute resolution, occupational health and safety, and the prohibition of child labor and forced labor. These requirements shall apply to all categories of project workers, including contracted and subcontracted workers, and shall be implemented through the project's Labor Management Procedure (LMP), worker grievance arrangements, and labor compliance monitoring mechanisms.

Wages and deductions: The Decent Work Act sets out a minimum salary for every category of workers under the categories of concession, industrial, company business, etc. The minimum wage in the formal sector (concession, industry, business, company, etc.) worker/employee is United States Sixty-eight cents (US$0.68) per hour or United States Five Dollars – Fifty Cents (US$5.50) per day. Domestic and/or casual worker/employee is entitled to a minimum wage of United States Forty-three Cents (US$0.43) per hour or United States Three Dollars – Fifty Cents (US$3.50) per day.

Working Hours: Part V, Chapter 17, Sec 17.1a of the Decent Work states that ordinary working hours shall be eight hours in any one day and forty-eight hours in every week. The Act also requires employers to clearly display a notice showing the hours at which work begins and ends and the daily rest periods, in a readily accessible location in any workplace under their control.

Leave: The right to annual leave is guaranteed to all employees under the Labor Law of Liberia. Chapter 18, Sec 18.1 of the Act provides that any employee who works based on an individual labor contract shall benefit from the right to annual rest leave. Every employee is entitled to a minimum uninterrupted period of annual leave as follows:

- During the first twelve (12) months of continuous service with an employer, the number of working days in one (1) week
- During the first twenty-four (24) months of continuous service with an employer, the number of working days in two (2) weeks
- For continuous service of thirty-six (36) months, the number of working days in three (3) weeks; and
- For continuous service with the same employer for sixty (60) months and thereafter, the number of working days in four (4) weeks. An employee who has taken either of these annual leaves shall receive their full remuneration as per the Civil Servant Standing Order and Decent Work Act.

The Act also provides for paid maternity and paternity leave, sick leave, bereavement leave, and leave to care for others.

Labor Dispute: The Act contains provisions for the resolution of labor disputes in Liberia. The Act has provisions in these sections that allow workers to resolve individual and collective disputes between the employer and the employee(s) over the terms and conditions of a labor agreement.

OHS: Part VI of the Act, which covers Occupational Safety and Health, is very extensive and generally covers most of the key requirements of para. 24-30 of ESS2. Part VI covers several themes, including the following:

Objectives of the OHS legislation are generally in line with the objectives of ESS2. Amongst others, the objectives are to:

- Ensure the safety, health, and welfare of employees and other persons at work.
- Eliminate at their source, so far as is reasonably practicable, risks to the safety, health, and welfare of employees and other persons at work.
- Ensure that the safety and health of members of the public are not exposed to risks arising from work or workplaces

- Provide for the involvement of workers, employers, and organizations representing those persons in the formulation and implementation of safety, health, and welfare standards.

Part VI, Chapter 25, of the Act provides requirements for Employer's Obligations. It covers general duties of employers, including the duty to ensure so far as is reasonably practicable the safety and health at work of all workers they have engaged; the duty to provide and maintain plant and systems of work that are safe and without health risks; and the duty to provide, in appropriate languages, such information, instruction, training and supervision as may be necessary to ensure the safety and health of workers they have engaged.

4.7. Environmental and Social Impact Assessment in Liberia

An ESIA Process Flow Chart has been included as Appendix A. The main steps in the process are:

- Prepare Application for Environmental Impact License
- Prepare Notice of Intent (NOI)
- Submit Project Brief (allow 14 working days for EPA to review and give feedback)
- Conduct Scoping Process:
- Publish NOI in Media
- Prepare Terms of Reference (TOR)
- Conduct Meetings with the EPA Environmental Committee and the District Environmental Committees, as needed.
- Conduct Public Meetings with Potentially Affected Communities
- Submit Scoping Report to EPA
- Prepare Environmental Review
- Obtain EPA Approval of TOR and Environmental Review
- Prepare Environmental Impact Study and Report (included in ESIA)
- Prepare Environmental Impact Statement (EIS) (included in ESIA)
- Develop Comprehensive Environmental Mitigation Plan and Implementation Strategy (included in ESIA)
- Agency Review of ESIA (within 3 months)
- Public Consultation on ESIA (within the first 30 days of 3 months)
- Public Hearings (EPA to decide whether to hold these)
- Liberia's Line Ministries Comment on ESIA
- Review by EPA Environmental Assessment Committee
- Approval or Rejection by EPA (within three (3) months of receiving ESIA report)

4.8. Applicable World Bank Environmental and Social Standards

The World Bank ESF provides methods and tools for client countries to carry out E&S risk assessments. Those tools are principally set out in the ten (10) ESS and their respective guidance notes. In line with the application of those tools, as the specific locations for project interventions are yet to be identified, the ESMF is the appropriate instrument required to meet the World Bank's ESF requirements. The Project is not expected to impact natural habitats. All activities financed through the project are subject to the World Bank Environmental, Health and Safety (EHS) Guidelines, including those on Electric Power Transmission and Distribution. The project has prepared and disclosed an Environmental and Social Commitment Plan (ESCP) and a Stakeholder Engagement Plan (SEP).

Eight out of the ten (10) World Bank ESS have been screened as relevant. The eight (8) ESS applied, the rationale for their application, and their related ESS E&S tools are presented in the table below.

Table 1 : ESS applied to Dares Ine Liberia

	ESS Applied	Rationale	Related E&S Management Tools
1	ESS1: Assessment and Management of Environmental Risk and Impacts	Project activities are likely to induce short-term, medium-term, and possibly long-term (hazardous waste risk) adverse E&S impacts on biodiversity, environmental, and community/social resources.	ESFM, Environmental and Social Screening, ESIA, ESMP, and Stakeholder Engagement.
2	ESS2: Labor and Working Conditions	Project activities may adversely affect the working conditions of direct and indirect workers.	LMP, GM, Code of Conduct, and Stakeholder Engagement.
3	ESS3: Resource Efficiency and Pollution Prevention and Management	Project activities are likely to induce air pollution, noise, ordinary waste, and hazardous waste.	ESFM, Environmental and Social Screening, ESIA, ESMP, and Stakeholder Engagement.
4	ESS4: Community Health and Safety	Project activities are likely to induce community health risks.	ESFM, Environmental and Social Screening, ESIA, ESMP, Stakeholder Engagement
5	ESS5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement	Project activities are likely to induce land acquisition.	There will be no involuntary acquisition or displacement in case of failure to reach an agreement. Negotiated land access procedures, Willing buyer and willing seller guidelines and documentation, Stakeholder Engagement. Adopt grievance handling, and livelihood restoration where applicable.
6	ESS6: Biodiversity Conservation and Management of Natural Resources	Project activities are likely to have adverse impacts on biodiversity and natural resource management.	ESFM, Environmental and Social Screening, ESIA, ESMP, and Stakeholder Engagement.
7	ESS8: Cultural Heritage	Project activities are likely to have adverse impacts on tangible and intangible cultural resources.	ESFM, Environmental and Social Screening, ESIA, ESMP, Cultural Heritage Management Plan (CHMP), and Stakeholder Engagement.
8	ESS10. Stakeholder Engagement and Information Disclosure.	Project activities are likely to induce adverse impacts on social cohesion due to social exclusion, elite capture, disinformation, market dynamics, absence of transparency, etc.	SEP, Environmental and Social Screening.

4.9. Other World Bank Standards, Including Health, Safety & Environmental Guidelines

In addition to the World Bank Group's eight (8) ESS, its Environmental Health and Safety Guidelines also apply to this project. They include general guidelines as well as sector-specific guidelines for electricity. The general EHS guidelines are designed to be used together with relevant Industry Sector EHS guidelines, which guide users on EHS issues in specific industry sectors. The energy sector-specific guidelines are: Guidelines for Electric Power Transmission and Distribution. Below are the World Bank EHS Guidelines, relevant to various components of the proposed project.

4.9.1.1. *a) EHS Guidelines - Environmental*

- Hazardous Materials Management
- Waste Management
- Noise
- Contaminated Land

4.9.1.2. *b) EHS Guidelines - Occupational Health and Safety*

- General Facility Design and Operation
- Communication and Training
- Physical Hazards
- Chemical Hazards
- Biological Hazards
- Personal Protective Equipment (PPE)
- Special Hazard Environments
- Monitoring

4.9.1.3. *c) EHS Guidelines – Community Health and Safety*

- Structural Safety of Project Infrastructure
- Life and Fire Safety (L&FS)
- Traffic Safety
- Transport of Hazardous Materials
- Emergency Preparedness and Response

4.9.1.4. *d) EHS Guidelines - Construction and Decommissioning*

- Environment
- Occupational Health & Safety
- Community Health & Safety

4.9.1.5. *e) The World Bank Environmental, Health And Safety Guidelines for Electric Power Transmission and Distribution*

The EHS Guidelines for Electric Power Transmission and Distribution include information relevant to power transmission between a generation facility and a substation located within an electricity grid, in addition to power distribution from a substation to consumers located in residential, commercial, and industrial areas.
Some of the followings are addressed in the EHS Guidelines:

- Construction site waste generation; ·
- Terrestrial Habitat Alteration
- Construction of Right-of-Way
- Avian and Bat Collisions and Electrocutions

The PIU and the Contractor must take note of these guidelines, which are available at: http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines.

Table 2: Gap Analysis - World Bank ESS and Liberia National Laws

ESSEs Policies and Objectives	National Legislation	Gaps and gap filling measures
ESS1: Assessment and Management of Environmental Risks and Impacts Identify, evaluate, and manage the environmental and social risks and impacts of the project in a manner consistent with the ESSs. ESS1 requires that borrowers identify and manage environmental and social risks associated with a project, including by conducting an environmental and social assessment during the project preparation stage. Establishes a mitigation hierarchy which instructs borrowers first to anticipate and avoid risks and impacts; then to minimize or reduce risks and impacts to acceptable levels; then once risks and impacts have been minimized or reduced, mitigate; and finally, where significant residual impacts remain, compensate for or offset them. Instruct borrowers to ensure that project negative impacts do not fall disproportionately on those who might be disadvantaged or vulnerable, and to ensure that all groups have access to project benefits.	**Environment Protection Agency, Liberia Law 2002** An Act to establish a monitoring, coordinating, and supervisory authority for the sustainable management of the environment in partnership with regulated Ministries and organizations and in a close and responsive relationship with the people of Liberia; and to provide high-quality information and advice on the state of the environment and for matters connected therewith. It **provides** for a wide-ranging of responsibility for environmental management by the EPA. One of the most prominent issues is the need for the development of administrative procedures for the preparation of EIA to ensure effective environmental governance. The required administrative procedures and how they are arranged to reflect the intent of the law are the subject of the following guidelines. Environmental Impact Assessment Procedural Guidelines, 2006 It provides guidance on the EIA process and has been evident since the establishment of the EPA. It sets out the processes and procedures from applying for EIA to the EPA to the issuance of the environmental permit.	The EPA Act caters to identifying and managing Environmental and Social risks broadly and adequately. Where there are gaps relating to pollution standards and guidelines, those relating to ESS 1 will be adopted. EPA's EIA Process allows for adopting higher standards

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ESS Objectives	Applicable local legislation	Addressing gaps
To adopt a mitigation hierarchy approach to anticipate and avoid risks and impacts; Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; Once risks and impacts have been minimized or reduced, mitigate. Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.	The Liberia EPA Act has no equivalent to the mitigation hierarchy. National law gives priority to the principle of environmental protection and pollution prevention, and not only to the mitigation or compensation of impacts. All new projects must carry out EIAs to prevent adverse impact and must obtain an environmental permit. No project or new structure that could harm, pollute, or deteriorate the environment and natural resources is allowed, and all new projects should use best available practices for clean production and apply environmental protection/pollution prevention measures.	DARES will apply the ESF
Adopting differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project.	Included in the EPA Act and regulations	National requirements and ESF objectives are aligned and complement each other. DARES will apply both ESF and national requirements

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ESS Objectives	Applicable local legislation	Addressing gaps
To utilize national environmental and social institutions, systems, laws, regulations, and procedures in the assessment, development, and implementation of projects, whenever appropriate.	The EPA Act 2003 specifies the procedures and processes of undertaking ESIAs	DARES will take into account national laws and regulations when applying the ESF requirements
To promote improved environmental and social performance, in ways that recognize and enhance Borrower capacity	Included in the EPA Act and regulations	DARES will consider national laws and regulations when applying the ESF requirements
Labor & Working Conditions To promote safety and health at work. **ESS2** requires that borrowers ensure safe labor and working conditions in Bank-financed projects. Prohibits the use of forced or child labor in Bank-financed projects. Borrowers must provide a grievance mechanism for project workers, including subcontracted workers.	**Labor Laws of Liberia** **Decent Work Act of Liberia, 2015** Provide a synopsis of applicable labor laws, occupational health and safety, conditions of service, contract, etc.	Although some labor laws are old and outdated, existing labor laws will be applied to the project that are in line with requirements for ESS2. These will be acceptable to the Government of Liberia, as the country also subscribes in principle to many of the labor laws of the ILO and the UN, and many of the international Human Rights Laws. Contractors will also be required to adopt many of the practical aspects of ESS2 implementation through stipulated requirements specified in the ESMPs and Contractor Labor Management Procedure.
ESS3: Resource Efficiency and Pollution Prevention and Management **ESS3** recognizes that economic activity and urbanization often generate pollution of air, water, and land, and consume finite resources that may threaten people, ecosystem services, and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG)	**Environment Protection and Management Law of Liberia, 2002** EIA Procedural Guidelines, 2006 Sets out the processes and procedures involved in the conduct of the Environment and Social Impact Assessment	Although there are gaps with ESS 3 and national regulations, such as the EPML, management measures are also sourced from ESS3. These measures will be acceptable to the Government of Liberia. Contractors will be required to adopt industry specific guidelines to promote and support the sustainable use of natural resources and complement them with appropriately developed modern technologies.

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ESS Objectives	Applicable local legislation	Addressing gaps
threatens the welfare of current and future generations.		
ESS4: Community Health and Safety **ESS4** addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable. It recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impact and must be eliminated, prevented, mitigated, or reduced	**New Public Health Law of Liberia, Title 33, (2019)**	It is therefore the obligation of the Liberian government to create and promote safety policies aimed at protecting workers from workplace injuries, death, and other associated illnesses. Environmental health and safety management is an important component of a safe work environment because it protects human health and safety in the workplace. In cases where the New Public Health Law does not address an issue, the relevant provisions of ESS4 will be adopted, which is allowable under the Liberian Governance system

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ESS Objectives	Applicable local legislation	Addressing gaps
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement **ESS5** recognizes that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons. Project-related land acquisition or restrictions on land use may cause physical displacement (relocation, loss of residential land, or loss of shelter), economic displacement (loss of land, assets, or access to assets leading to loss of income sources or other means of livelihood),3 or both. The term "involuntary resettlement" refers to these impacts. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in displacement.	**Land Rights Act, 2018** The Act establishes four basic types of rights: Public Land, Government Land, Customary Land, and Private Land. In addition, a Protected Area is land that may fall under the Government Land, Customary Land, or Private Land categories, but which must be conserved for the benefit of all Liberians. Environmental Protection and Management Law of Liberia, 2002, spells out the consultative processes and procedures involved in consulting project-affected communities for land acquisition Environmental Protection and Management Law of Liberia, 2002 EIA Procedural Guidelines, 2006 Sets out the processes and procedures involved in the conduct of the Environment and Social Impact Assessment	Other than the EPML and the 2018 Land Rights Act, Liberia does not have a prescriptive guideline that addresses the conduct of resettlement during the implementation of project activities. In such instances, ESS5 will be adopted.

ESS Objectives	Applicable local legislation	Addressing gaps
ESS6: Biodiversity Conservation and Sustainable **ESS6** recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources, including inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems. Biodiversity often underpins ecosystem services valued by humans. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services.	**National Biodiversity Strategic Action Plan of Liberia, 2017** The Strategy considers key issues identified by stakeholders as critical for biodiversity conservation and provides strategic direction to enhance biodiversity management.	ESS6 will be adopted to ensure the sustainable management of Living Natural Resources, as the National Biodiversity Action Plan only addresses conservation of biological diversity and not the sustainable use of resources.
ESS8: Cultural Heritage **ESS8** recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present, and future. People identify with cultural heritage as a reflection and expression of their constantly evolving values, beliefs, knowledge, and traditions. Cultural heritage, in its many manifestations,	**No Applicable National Regulations**	In the absence of existing national regulations on Cultural Heritage, ESS8 will be adopted for implementation throughout the project.

ESS Objectives	Applicable local legislation	Addressing gaps
is important as a source of valuable scientific and historical information, as an economic and social asset for development, and as an integral part of people's cultural identity and practice. ESS8 sets out measures designed to protect cultural heritage throughout the project life cycle. It also sets out general provisions on risks and impacts to cultural heritage from project activities.		
ESS10: Stakeholders' Engagement and Information Disclosure	**Environmental Protection and Management Law, 2002** The EPML provides the legal basis on which stakeholders shall be consulted during and throughout the project life cycle.	The EPML does not require the preparation of a Stakeholders' Engagement Plan (SEP). The project has adopted and prepared a SEP as part of the compliance process with ESS10. The SEP will be implemented throughout the project implementation.
ESS10 recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. Stakeholder engagement is an inclusive process conducted throughout the project life cycle. When properly designed and implemented, it	**EIA Procedural Guidelines,2006,** sets out the procedures involved in conducting stakeholder consultation during the conduct of an Environmental and Social Impact Assessment	The EPML and the EIA Procedural Guidelines require stakeholder consultation and disclosure during the environmental assessment process, but they do not explicitly require stakeholder engagement throughout the full project life cycle, nor do they require preparation of a Stakeholder Engagement Plan (SEP) and a project-level grievance mechanism in the form and scope required under ESS10. The Project has therefore prepared a SEP and will implement it throughout the project cycle. Stakeholder engagement will be carried out through continuous information disclosure, inclusive consultations at national and subproject levels, operation of a project grievance mechanism, and

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ESS Objectives	Applicable local legislation	Addressing gaps
supports the development of strong, constructive, and responsive relationships that are important for the successful management of a project's environmental and social risks. Stakeholder engagement is most effective when initiated at an early stage of the project development process and is an integral part of early project decisions and the assessment, management, and monitoring of the project's environmental and social risks and impacts.		documentation and reporting of stakeholder engagement activities during implementation.

4.9.1.6. *f) The World Bank Disclosure of Information*

Disclosure of this ESMF, and other E&S instruments to be prepared for this project (e.g., ESIA/ESMP/LMP), will be done in line with the Liberia EIA Laws and the World Bank's Policies. Disclosure will involve publication in national newspapers and under the guidance of the Ministry of MME or the EPA. The newspaper publications will inform the public of locations where the ESMF will be displayed for a period, for the general public to make comments and contributions. The evidence of Newspaper or website Publications will be used to disclose the ESMF on the World Bank External Website.

In addition to national laws and World Bank ESS, Liberia has ratified several international conventions relevant to the DARES project. Below are two tables summarizing the national and international conventions applicable to the DARES project.

Table 3: Relevant Environmental Laws applicable to DARES

Title	Year	Description
Public Health Law	1976	It contains provisions for the protection of drinking water resources and the inspection of potential sources of pollution.
Wildlife and National Parks Act	1988	The Act identifies a number of protected areas, national parks, nature reserves, controlled hunting areas, game reserves, and communal forests. It specifies policies and objectives regarding wildlife conservation in the country.
The Environment Protection Agency (EPA) Act	2002	The Act provides the Agency with the authority of government for the protection and management of the environment in Liberia. It provides for an Environmental Administrative Court to hear from aggrieved parties. It requires that an Environmental and Social Impact Assessment (ESIA) be carried out for all activities and projects likely to have an adverse impact on the environment.
The Env. Protection and Management Law	2002	**The Law** arranges the rules, regulations, and procedures for the conduct of ESIA. It establishes regulations for environmental quality standards, pollution control, and licensing, among others.
The National Environmental Policy of Liberia	2002	It defines policies, goals, objectives, and principles of sustainable development and improvement of the physical environment, quality of life of the people, and ensures coordination between economic development and growth with sustainable management of natural resources.
Protected Areas Network Act	2003	It identifies several categories of protected areas under various management regimes. One such protected area is Lake Piso Nature, listed as a Ramsar site.

Additionally, the government of Liberia possesses two legal instruments it can use at any time to enforce new regulations: the executive order and regulations. The Executive Branch of government, headed by the President, can issue an Executive Order without the approval of the National Legislature. The **Executive orders** have the power of a law if they do not contravene the existing law. The power of such orders is time-bound. The national Legislature has empowered Cabinet Ministers and Managing Directors of public corporations and agencies to issue regulations for their respective functionaries without legislative approval or

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supervision, provided that such regulations are not inconsistent with the statutory Laws and the Constitution of Liberia.

Table 4: International Environmental Conventions Signed/Ratified by the GoL

Convention	Status	Year	Objective
African Convention on Conservation of Nature and Natural Resources	Ratified	NA	To encourage individual and joint action for the conservation
Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Ratified	1981	To prevent the trade of endangered or threatened species
Convention Concerning the Protection of the World Cultural and Natural Heritage	Signed	2002	To recognize and protect cultural and natural heritage for future generations
Framework Convention on Climate Change and the Kyoto Protocol	Signed	2002	To achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climatic system. To strengthen the commitment of developed country parties with a view to reducing their overall emissions.
Stockholm Convention on Persistent Organic Pollutants (POP)	Signed	2002	To strengthen National Capacity and to enhance knowledge and understanding amongst decision makers, managers, industry, and the public at large on POPs. To develop a National Implementation Plan (NIP) to manage the elimination of POPs.
Ramsar Convention on Wetlands	Signed	2003	To encourage and support countries to develop and implement national policy and legislative frameworks, education and awareness-raising programs, as well as inventory, research, and training projects on Ramsar.

Convention	Status	Year	Objective
Vienna Convention for the Protection of the Ozone Layer	Signed	1996	States agreed to cooperate in scientific research on the ozone problem, to exchange information, and to adopt "appropriate measures" to prevent activities that harm the ozone layer. The obligations are general and contain no specific limits on chemicals that deplete the ozone layer.
Montréal Protocol on Substances that Deplete the Ozone Layer	Signed	1996	A protocol to the Vienna Convention for the Protection of the Ozone Layer, it is designed to protect the ozone layer by phasing out the production of numerous substances believed to be responsible for ozone depletion.
International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC), London, 1990	Signed	1995	To strengthen the legal framework for the control of environmental pollution by oil, in general, and marine pollution by oil in particular.
International Covenant on Economic, Social, and Cultural Rights	Ratified	2004	ICESCR commits to work toward the granting of economic, social, and cultural rights to individuals, including labor rights and rights to health, education, and an adequate standard of living. ICESCR is part of the International Bill of Human Rights, along with the Universal Declaration of Human Rights (UDHR) and the International Covenant on Civil and Political Rights (ICCPR).

4.10. Liberia Administrative/Institutional Framework Relevant to DARES Project

4.10.1. The National Government

Liberia's government comprises three branches, namely, the executive, legislative, and judicial branches. The legislative branch consists of two chambers – the Senate (30 seats) and the House of Representatives (now 73 members). The country has a dual legal system of statutes passed by the Legislature and approved by the President of the Republic, and customary law based on customary practices of the country's indigenous people.

4.10.2. Local Government

Liberia comprises 15 administrative political subdivisions known as counties, each of which is headed by a Superintendent and further divided into districts, each under a District Commissioner. Each district is subdivided into chiefdoms headed by a Paramount Chief, and each chiefdom is divided into clans headed by Clan Chiefs. Towns are headed by Town Chiefs.

4.10.3. Ministry of Mines and Energy

The MME has the statutory responsibility for the development of mineral, water, and energy resources in Liberia. It is in charge of mineral resources through the granting of operation licenses and regulates beach sand mining. It works along with the Ministry of Agriculture and the University of Liberia to conduct training and research on energy and mines rehabilitation. Energy provision is administered through the same Ministry by the Deputy Minister of Energy, while water resources are the responsibility of the National Hydrological Service.

4.10.4. Ministry of Agriculture

The Ministry of Agriculture regulates forestry as relates to plant quarantine, agro-forestry and food crop-related plantations; the fishery and agriculture sectors and has specific responsibilities for soil conservation. Some water resource matters used to be managed by the National Water Resources and Sanitation Board prior to the civil war, and proposals have recently been made for its re-establishment. It plans, executes, administers, manages, and supervises agriculture programs and provides extension services, trains local farmers in improved cultural practices, and supplies farm inputs to enhance food security. The Ministry of Agriculture has developed a price listing for tree crops affected by development projects in Liberia.

4.10.5. Ministry of Planning and Economic Affairs

The Ministry of Planning and Economic Affairs (MPEA), now merged with the Ministry of Finance and collectively known as the Ministry of Finance and Development Planning (MFDP) is responsible for intersectoral coordination of the development of policies, plans, and programs for the economic, financial, social, cultural, and physical development of Liberia. It is the statutory institution responsible for developing and enforcing the fiscal policy of Liberia.

In fulfilling its various duties, it serves as the direct coordination link between implementing Ministries and Agencies, Non-Governmental Organizations (NGOs), private voluntary organizations, civil society organizations, and the international community. Coordination occurs at the national, sectoral, and regional planning levels and also involves the implementation of cross-cutting initiatives.

4.10.6. Ministry of Public Works (MPW)

The MPW is responsible for the design, construction, and maintenance of roads and highways, bridges, storm sewers, public buildings, and other civil works in the country. Additionally, it has responsibility for the administration of urban and town planning as well as the provision of architectural and engineering services for all government ministries and agencies. In principle, the MPW is responsible for defining the right-of-way (ROW) of primary, secondary, and feeder roads in Liberia.

4.10.7. Ministry of Labor

The Ministry of Labor of the Republic of Liberia was created by an Act of the National Legislature in 1981. The Ministry is charged with the Statutory Mandate to regulate the labor sector of the Republic of Liberia through the development and implementation of policies for adherence to the Labor Practices Law of Liberia and International Labor Conventions. The principal goals and objectives of the ministry include:

- Promote Employment Opportunities;
- Promote Human Resource Development;
- Provide Leadership in Improving Working Conditions (Decent Work);
- Policy Development and Coordination;
- Administration of Labor Practices Law;
- Enhancing Productivity; and
- Labor Market Information.

4.10.8. Ministry of Health

The MOH coordinates and administers all general health services in Liberia, including providing preventive services, collecting health statistics, ensuring drug availability and monitoring events and conditions affecting public health. It also maintains statistics from birth and death registrations. Through its Division of Environmental and Occupational Health, the Ministry assesses the environmental health of the population and regulates and monitors environmental impacts resulting from pollution of air, water, food/feed, and soil, as well as occupational health and chemical safety. The Division had a water quality laboratory prior to the Civil War, but it no longer exists.

4.10.9. Ministry of Internal Affairs

The Ministry of Internal Affairs administers the affairs of all government functionaries in Liberia, oversees the activities of all local bodies, such as chiefdoms and clans, and supervises all county superintendents.

4.10.10. Environmental Protection Agency

The Environmental Protection Agency (EPA) is an autonomous statutory body established under the Act Creating the Environmental Protection Agency of the Republic of Liberia 2003 (GoL, 2003a), hereafter referred to as the EPA Act to address the country's environmental problems. Its mandate was subsequently confirmed when the EPA became a fully functioning entity in 2006, with the appointment of a board of directors and the establishment of a Policy Council.

The EPA was established to "coordinate, monitor, supervise and consult with relevant stakeholders on all activities in the protection of the environment and sustainable use of natural resources," and as the lead national environmental agency is charged with executive authority for all environmental activities and programs relating to environmental management in Liberia. The EPA also has a key responsibility for matters relating to the issuance of environmental impact assessment licenses and for monitoring and enforcing compliance with environmental laws, regulations, guidelines, and standards. The EPA is an autonomous agency whose Executive Director is appointed by and reports directly to the President of Liberia, with a Policy Council chaired by the Minister of Mines and Energy.

4.10.10.1. County and District Environmental Committees

To decentralize environmental management, the Environmental Protection Agency Act authorizes the establishment of County and District Environmental Committees and directs the National Environmental Policy Council to provide guidelines for their establishment.

Each County Committee is composed of county and district officials, traditional leaders, private citizens, and two local representatives to the national legislature. The Committee is staffed by a County Environment Officer, hired by the EPA, but responsible to the County Committee.

The District Environment Committees are to be established by and report to the relevant County Environment Committee. They are charged with promoting environmental awareness and mobilizing the public to manage and monitor activities within the district to ensure that they do not have any significant impact on the environment. The District Committees are composed of district officials, mayors, chiefs, and private citizens and are staffed by a District Environment Officer hired by the EPA. In addition to assisting the County and District Committees in the fulfillment of their responsibilities, the County and District Environment Officers are responsible for compiling reports to the EPA, promoting environmental awareness, and conducting public hearings on environmental impact assessment in the County and the District.

At present, two County Environmental Committees have been established: One in Sinoe County and another in Nimba County. However, the EPA has established outstation offices in eight counties. The offices are staffed by Environmental Inspectors. As the County Environment Committees are established, some of the Inspectors may be reassigned as County Environment Officers. Additionally, to provide for the enforcement of environmental requirements and standards, the Environmental Protection Agency Act provides for the appointment of Environmental Inspectors and the establishment of an Environmental Court system.

4.10.10.2. Environmental Inspectors

The Act authorizes the EPA to "designate its officers and duly qualified public officers/civil servants to be environmental inspectors within such Counties and District limits." Thus, Environmental Inspectors do not have to be EPA employees, but can also be designated officers or civil servants in other branches of the government. Environmental Inspectors are authorized to enter premises, inspect activities, take samples, and review records to ensure compliance with environmental rules and regulations. The exact nature of the inspector's enforcement authority is not defined in the Act, but the Act does state that the EPA is to "…establish the conditions, rules and regulations governing the qualifications, performance, powers and duties of the Environmental Inspectors." The EPML confirms that Environmental Inspectors can write Restoration Orders to correct an activity deemed to be noncompliant with environmental rules and regulations.

4.10.10.3. Environmental Court

The Environmental Protection Agency Act defines a two-tiered court system to hear and pass on cases relating to compliance with environmental rules and regulations. The first tier is the Environmental Administrative Court, established by law in 2002 as part of the EPA legal framework. This court is to hear and rule on complaints relating to the environment. The second tier is the environmental court of appeals. The Supreme Court is the last institution to address environmental issues not settled by the environmental court of appeals. The complaints may be about the actions or decisions of the EPA or an Environmental Inspector or may be brought up by the public to stop activities they believe are damaging to the environment. The second tier is an Environmental Appeals Court, established at the Judicial Circuit level.

At present, the Environmental Court system has not been formally established. EPA's five-year strategic plan (of July 2011) provides an administrative court to handle environmental issues for an intermediate period before the full establishment of an environmental court under the judicial system.

4.10.11. Liberia Electricity Corporation (LEC)

The Liberia Electricity Corporation was created in 1973 to generate, transmit, distribute, and sell electricity throughout the country at reasonable rates. In July 2006, electricity was restored to parts of Monrovia for the first time in fifteen years because of the civil war of 1989-2003.

4.10.12. Liberia Energy Regulatory Commission (LERC)

The Liberia Energy Regulatory Commission was established by an Act of the Legislature in 2015 to serve as the national regulator of energy generation, transmission, and distribution in Liberia. It is responsible for issuing licenses to operators in the energy sector.

4.10.13. Rural and Renewable Energy Agency (RREA)

The Rural and Renewable Energy Agency (RREA) is an autonomous Agency established by an Act in 2015 with a mandate of facilitating and accelerating the economic transformation of rural Liberia by promoting the commercial development and supply of modern renewable energy products and services to rural areas with emphasis on locally available renewable energy sources.

4.10.14. Liberia Land Authority (LLA)

The Liberia Land Authority (LLA) was established on October 6, 2016, as an autonomous agency by an Act of the Legislature. The LLA is now clothed with the statutory function in areas of land use management, governance, and administration of public land, government land, private land, and customary land in Liberia, including surveys and cartography, deeds and titles registry, and supervision and coordination of the function of county land commissioners.

4.10.15. Liberia Telecommunication Corporation (LIBTELCO)

The Liberia Telecommunication Corporation (LibTelco) was founded through the Liberian Telecommunications Corporation Act of 1973 to construct and operate the country's fixed line communications infrastructure and to provide services to residents and businesses. LibTelco is a state-owned entity and Liberia's National Operator charged with the statutory responsibility to provide quality and affordable communication and high-standard customer service to all of Liberia.

3.9.17 Liberia Water and Sewer Corporation (LWSC)

The Liberia Water and Sewer Corporation was duly established in 1973 under an Act of the Legislature as a legal public corporation to provide, distribute, and supply water in Liberia for public, domestic, and industrial purposes.

4.10.16. Liberia Institute of Statistics and Geo-Information Services (LISGIS)

LISGIS was established by the Law of the National Transitional Legislative Assembly (NTLA) on July 22, 2004. LISGIS is headed by a Director-General and supervised and monitored by a twenty-one (21) member Board of Directors. Both the Director-General and the Board of Directors have been initially appointed by the President. That arrangement was later changed so that the Director-General and the Director of the Board will be appointed by the Board to

minimize the involvement of the Government and secure the support of all stakeholders, particularly development partners. LISGIS:

- Advises on all initiatives to collect data at all levels locality/village/town, clan, districts, county, regional, and national) in the context of an integrated National Statistical and Geoinformation System;
- Conducts censuses and surveys;
- Collects, analyzes, and disseminates social, economic, environmental, and national accounts statistics of internationally acceptable standards as and when required;
- Creates, establishes, and manages the integrated National Statistical and Geo-Database;
- Supports sectoral capacity to acquire, access, use, and contribute to the National Statistical System and the integrated National Statistical Database.

5. Environmental and Social Baseline Conditions

5.1. Biophysical Environment

Liberia is situated on the southwest corner of the West Coast of Africa. It lies between the longitudes of 7o30' and 11o30' west and latitudes 4O18’ and 8o30' north. It covers a surface area of about 111,370 km2 (about 43,506 square miles). The dry land is 96,160 km2. Liberia is bordered on the west by Sierra Leone, on the north by Guinea, on the east by Côte d’Ivoire, and on the south by the Atlantic Ocean. The perimeter is 1,585 km, excluding the Atlantic Ocean.

There are four topographical regions at different altitudes, each with distinct physical features. Along the seacoast is the coastal plain of 350 560 km, an almost unbroken sand strip, which starts from the lowest elevation up to 30 meters above sea level. Next to the coastal plain is the belt of inundated plateau, followed by the belt of highlands and rolling hills in the north and northwest. The lowest point is the Atlantic Ocean at zero meters, and the highest elevation is the northern highlands, which includes Mount Wutivi (1380 meters), the highest point in Liberia.

5.2. Climate and Hydrology

The Liberia Environmental Protection Agency states that Liberia’s climate can be described in terms of two separate climate regimes: the equatorial climate regime restricted to the southernmost part of Liberia, where rainfall occurs throughout the year, and the tropical regime dominated by the interaction of the Intertropical Convergence zone (ITCZ) and the West African Monsoon. Liberia’s coastal location allows the southwesterly flow of the monsoon to prevail most of the year, maintaining a thin layer of moist marine air near the surface, although the Harmattan Wind typically intrudes for brief periods during the winter in coastal areas (duration typically less than two weeks).

The major river basins drain the territory in a general northeast to southwest direction to the Atlantic Ocean. Major exceptions to the pattern are the middle reaches of the Cavalla and Dugbe in eastern Liberia, which flow parallel to the coast in their lower reaches before entering the Atlantic Ocean. There are six major rivers, which drain 66 percent of the country. These are Rivers Mano, St. Paul, Lofa, St. John, Cestos, and Cavalla. The short coastal watercourses drain about 3 percent of the country and include the Po, Du, Timbo, Farmington, and Sinoe rivers. The largest and longest is the Cavalla River. These rivers are not navigable and therefore do not support water transport and industrial fishing.

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5.3. Vegetation

Liberia is historically a forested country, accounting for a significant proportion of the Upper Guinea forest biome across West Africa. The present vegetation of the country mainly comprises secondary closed canopy forest and is a consequence of the effect of anthropogenic factors. Much of the original forest is thought to have been cleared some three centuries ago due to high population density and rampant cut-and-burn agriculture (Cooper and Record, 1931; Gatter, 1984)[4,5]. The forests recovered because of the emergence of disease and the effect of inter-tribal war, and the slave trade, which is believed to have reduced the population, allowing the forest to regenerate, resulting in the current state of the country's vegetation. Much of the vegetation around the vicinity of Monrovia and the areas covered in this survey has transformed primarily because of urbanization, traditional agriculture, and the establishment of plantations of oil palm and rubber. Thus, the environmental impact of development is clearly evident and has affected the distribution and abundance of biodiversity across the County.

The distribution of fauna in Liberia is consistent with the vegetation distribution in the country. However, because Liberia remains one of the countries with the largest forest cover in West Africa, its mammalian fauna is expected to be more skewed towards forest species. About 150 species of mammals have been recorded in the country, including nine endangered, 12 vulnerable, and nine nearly threatened, according to the International Union for Conservation of Nature (IUCN) Red List (2015). The distribution of mammals, especially primates and large mammal species, is strongly correlated with the distribution of closed forest ecosystems in the country. Areas that have relatively pristine forest cover support higher numbers of mammal species and account for greater proportions of threatened and rare species. The areas to be traversed by the proposed power transmission lines fall within the most degraded regions of the country, and so the mammalian diversity (especially primates and large mammals) is expected to be low.

The total land area of Liberia is 9.59 million hectares, of which forests cover about 4.39 million hectares equivalent to 45 percent of the land area, including 2.42 million hectares which have been classified as closed dense forest; 1.02 million hectares are classified as open dense forest, and .95 million hectares classified as agriculture degraded forest6.

5.4. Fauna

In general, Liberia's fauna includes mammals, birds, reptiles, fish, butterflies and moths. Among the mammals, we particularly note the *pygmy hippopotamus (Choeropsis liberiensis or Hexaprotodon liberiensis), a small hippopotamid ('pygmy hippo'*) which is native to West Africa. The *pygmy hippopotamus* lives primarily in Liberia, but small populations can be found in neighboring countries (Ivory Coast, Guinea, Sierra Leone). Furthermore, it is assumed that Liberia is home to the greatest variety of snakes on the African Continent. Moreover, about 530 species of butterflies are known to be from Liberia, one of which is endemic.

Based on studies done over the last twenty years (Gatter, 1997; Robertson, 2001; Demey, 2007), Liberia is a stronghold for many endemics, rare, and threatened birds in the Upper Guinea Forest

[4] Cooper, G.P. and Record, S.J. (1931). The evergreen forests of Liberia. Yale University School of Forestry Bull. 31

[5] Gatter, W. (1984). For future Natural Forests and Plantation Management in Liberia. Observation – Considerations – Results. German Forestry Mission Papers. 55 pp. Forestry Development Authority, Monrovia.

Fifth National Report to the Convention on Biological Diversity.
Monrovia, Liberia, 2014.

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and the Guinea-Congo forest biome[7,8,9]. The Upper Guinea forest is considered among many others as one of the Endemic Bird Areas, with the highest priority ranking for conservation based on the combination of its biodiversity importance and threat status (Strattersfield et al, 1998)[10]. Liberia empirically supports 695 species of birds, including *Liberian Greenbul Phyllastrephus leucolepis*, which is endemic only to the country (Gatter, 1997), Robertson, 2001), and Demey, 2007). The country holds 21 species of global conservation concern according to IUCN (2015) and Birdlife International (2015); 18 of these species are entirely forest dependent, including two endangered, seven vulnerable, six nearly threatened, and three data-deficient species. Most of the species are resident with proof of breeding locally. The resident species include 184 species restricted to the Guinea-Congo biome and 15 (100%) of the species endemic to the Upper Guinea forest block. No Sudan-Guinea Biome Dependent species has yet been recorded in the country. There are several key biodiversity areas (KBAs) and protected sites in Liberia that may be affected by the DARES project activities.

Table 5: SPECIES DIVERSITY, ENDEMISM, AND THREAT

Class	Total Species	Total Endemic	Total Threatened
Amphibians	38	4	1
Plants	2,200	103	46
Mammals	193	n/a	17
Birds	590	1	22
Reptiles	67	2	2
Mollusks	n/a	n/a	1
Other Vertebrates	n/a	n/a	1
TOTAL		110	89

[7] Gatter, W. (1997). Birds of Liberia. Pica Press. Robertsbridge

[8] Robertson, P. (2001). Liberia. In: L.C.D. Fishpool and M.I. Evans (eds). Important Bird Areas in Africa and Associated Islands: Priority Sites for Conservation. Pisces Publications; and Birdlife International, Newbury and Cambridge, UK. Pp 473-480.

[9] Demey, R. (2007). Rapid survey of the birds of North Lorma, Gola and Grebo National Forests. In: Hoke, P., R. Demey and A. Peal (eds.). (2007). A rapid biological assessment of North Lorma, Gola and Grebo National Forests, Liberia. RAP Bulletin of Biological Assessment 44. Conservation International, Arlington, VA, USA.

[10] Satterfield, A.L., Crosby, M.J. Long, J.A. & Wege, D.C. (1998). Endemic Bird Areas of the World: Priorities for Biodiversity Conservation. Birdlife International Publication No. 7. 1998.

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5.5. Protected Areas [11]

Liberia hosts a network of nationally designated protected areas, including National Parks, Nature Conservation Units, Forest Reserves, and other protected landscapes, which play a key role in biodiversity conservation and ecosystem services. To support the assessment of potential biodiversity-related risks under ESS6, a review of existing protected areas was conducted using the World Database on Protected Areas (WDPA) 2026 database, accessed through the Protected Planet platform.

The table below presents the list of protected areas in Liberia, including their national designation, reported surface area, and classification according to the WDPA. In particular, the table indicates the WDPA "Type" for each site, which reflects the general environmental context of the protected area (terrestrial, inland waters, or a combination of both). With respect to IUCN management categories, it should be noted that no protected areas in Liberia currently have officially reported IUCN categories in the WDPA database; therefore, all sites are listed as "Not Reported" in accordance with the international reference source.

Table 5: List of protected areas in Liberia with surface and IUCN categories

No.	Name	Designation / Status	Area (km²)	IUCN Category
1	Sapo National Park	National Park	1,804	II
2	Grebo-Krahn National Park	National Park	971	Not reported
3	Gola Forest National Park	National Park	980	Not reported
4	Cape Mount Nature Conservation Unit	Nature Conservation Unit	554	IV
5	Gio National Forest	National Forest	327	IV
6	Gibi National Forest	National Forest	607	Not reported
7	Wonegizi Nature Conservation Unit	Nature Conservation Unit	202	IV
8	East Nimba Nature Reserve	Nature Reserve	135	Not reported
9	West Nimba National Forest	National Forest	Not reported	Not reported
10	North Lorma National Forest	National Forest	Not reported	Not reported
11	National Protected Forest Reserve No. 1	Forest Reserve	Not reported	Not reported
12	National Protected Forest Reserve No. 2	Forest Reserve	Not reported	Not reported
13	Lake Piso Multiple Use Reserve	Multiple Use Reserve	Not reported	Not reported
14	Cestos-Senkwehn Protected Area	Protected Area	833	Not reported

11 According to the World Database on Protected Areas (WDPA) accessed through Protected Planet, no protected area in Liberia currently has an officially reported IUCN management category. While several national and international sources (e.g. management plans, national legislation, and conservation NGO reports) sometimes attribute indicative IUCN categories to specific sites, these classifications have not been formally validated and reported to the WDPA. The official alignment of Liberia's protected areas with IUCN management categories remains to be confirmed by the national authority in charge of protected area management, notably the Forestry Development Authority (FDA), which is the mandated government institution responsible for protected areas in Liberia.

15	Foya Mountains Protected Area	Protected Area	1,646	Not reported
16	Bong Mountain Protected Area	Protected Area	248	Not reported
17	Gbi Protected Area	Protected Area	884	Not reported
18	Grand Kru – River Gee Protected Area	Protected Area	1,351	Not reported
19	Kpo Mountains Protected Area	Protected Area	837	Not reported
20	Margibi Mangrove Protected Area	Protected Area	238	Not reported
21	**Lake Piso Wetlands**	Wetland – Ramsar Site	760.91	Not applicable
22	**Marshall Wetlands**	Wetland – Ramsar Site	121.68	Not applicable
23	**Mesurado Wetlands**	Wetland – Ramsar Site	67.60	Not applicable
24	**Kpatawee Wetlands**	Wetland – Ramsar Site	8.35	Not applicable
25	**Gbedin Wetlands**	Wetland – Ramsar Site	0.25	Not applicable

5.5.1. Ramsar Wetlands of International Importance

Liberia is endowed with wetlands that provide both subsistence and economic benefits to its many inhabitants. Like wetlands all over the world, they have become overburdened by human-induced activities.

The National Environmental Policy of Liberia explains that the importance of wetlands is not fully understood, and that wetlands are threatened with degradation due to factors such as pressure from firewood gatherers and charcoal producers, uncontrolled solid and liquid wastes, unregulated settlements near wetlands, agriculture production and industrial expansion, and other constructions. Some strategic actions recommended by the National Environmental Policy (2003) include:

- Establishment of full protection status for wetlands of biodiversity significance
- Development of wetlands policy and management plans
- Inventory of wetlands

Part VI, sections 74 and 75 of the Environment Protection and Management Law of Liberia deal with management and protection of wetlands. The Law provides for a penalty of US$5,000.00 (Five Thousand United States Dollars) or imprisonment for a period not exceeding two years for violators.

5.5.2. Principal protected area

Liberia contains one of the largest remaining portions of the Upper Guinean Forest Ecosystem, a globally significant biodiversity hotspot with high levels of species diversity and endemism. To conserve this natural heritage and sustain critical ecosystem services, the Government of Liberia has established a national network of protected areas as a central component of its biodiversity conservation strategy.

As outlined in Liberia's Fifth and Sixth National Reports to the Convention on Biological Diversity (CBD), protected areas are intended to safeguard representative terrestrial, freshwater, and coastal ecosystems, conserve threatened species and contribute to climate resilience and sustainable development. The network includes national parks, nature reserves, and multiple-use protected areas, covering key lowland rainforest, montane, wetland, and coastal ecosystems.

While important progress has been made in the legal designation of protected areas, national reports also highlight ongoing management challenges linked to land-use pressures, resource constraints, and competing development activities. Nevertheless, protected areas remain a cornerstone of Liberia's conservation framework and play a critical role in national and transboundary biodiversity conservation efforts.

The following section provides an overview of Liberia's main protected areas, with a focus on those of particular ecological and conservation significance.

5.5.2.1. Sapo National Park

Created in 1983, Sapo is Liberia's first national park. The approval of the Sapo National Park Act (*An Act for the extension of the Sapo National Park*) on October 10, 2003, expanded the size of the park to 180,363, ha constituting an increase of more than 37%. The act recognized the park as being "at the core of an immense forest block of the Upper Guinea Forest Ecosystem that is important to the conservation of the biodiversity of Liberia and of West Africa as a whole".

The park is in the south-central portion of Liberia, and includes lowland rainforest, wetlands, and riparian forests, and represents one of - if not the most - intact forest ecosystem in Liberia. Notable fauna within the park includes for elephant (*Loxodonta africana cyclotis*), Jentink's (*Cephalophus jentinki*) and Zebra Duikers (*C. zebra*) and large primate populations, including the Diana monkey (*Cercopithecus diana*), red colobus (*Procolobus badius*), black and white Colobus (*Colobus polycomos*) and the western chimpanzee (*Pan troglodytes verus*). Also found within the park are several populations of the endangered pygmy hippopotamus (*Hexaprotodon liberiensis*). Without effective legislation and enforcement mechanisms, many of these species lie vulnerable, and prone to extinction.

5.5.2.2. East Nimba Nature Reserve:

Created in October 2003, the East Nimba Nature Reserve is dominated by a semi-montane and deciduous forest and is one of the 14 centers of plant endemism within the Upper Guinea Hotspot. The Mount Nimba Massif is located within the Sanokole quadrangle and is found on the northeastern border of Liberia. Hill and mountain vegetation are the favorite migration and wintering sites of Palearctic migrants such as European pied flycatcher (*Ficedula hypoleuca*), spotted flycatcher (*Muscicapa stritata*) and Garden warbler with rock thrushes found in rocky areas. The Nimba slopes

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between 500 and 700 meters contain many plant species, representing not fewer than 82 genera of trees and brushes. *Piptadeniastrum spp*., *Heritiera spp*., and *Lophira spp*. are common. Between 700 and 900 meters *Parinari spp*. becomes increasingly common, as well as *Parkia spp*. and associated species. East Nimba is an important bird area and a designated world heritage site. Arcelor Mittal has conducted extensive research in the area and has identified important species, including ants and toads. Again, species in this area may be vulnerable, and/or face extinction, if sustainable mechanism for conservation of these species is not ensured.

5.5.2.3. Gola Forest (97,975 ha)

Gola Forest is endowed with significant biodiversity richness (endemic amphibians, elephants, hippos, birds, plants, etc.) and a number of unique habitats such as forests, gallery forest, swamp forest and farm (*Terminalia superba*) bushes. Opportunities include: i) good funding potential based on charismatic fauna (elephants, hippos), transboundary conservation potential, security of border area and eco-tourism potential; ii) lessons learned from Gola in Sierra Leone in terms of management experience, biological data, community exchanges and fund raising experience; and, iii) potential effectiveness of transboundary/peace park management leading to coordinated response to threats.

The main threats include: i) the possibility for forest concessions to be reinstated; ii) diverse land uses such as hunting, mining, logging, farming, and transboundary migration of people from Sierra Leone and elsewhere in the region; iii) possibility of opposition from local communities and neighboring countries whose livelihoods might be threatened by PA's establishment (boundaries issues); and iv) lack of FDA management capacity in the area.

5.5.2.4. Wonegizi Forest (29,894 ha)

Biodiversity richness includes chimps and other primates, elephants and pygmy hippo. Wonegizi is a unique habitat for rock fowl (*Picathartes spp.).* Conservation opportunities include: i) opportunity for additional funding support from IUCN, Birdlife, and Great Apes programs; ii) research programs/activities; iii) ecotourism potential (species, culture, scenery); iv) corridor (Wologizi) into Guinea and transboundary nature (peace park); and v) scattered farming communities offer opportunity for integrating community land use practices into protected area management system. The most important threats include: i) mining for iron ore with the possibility of the extension of the Wologizi deposit entailing possible erosion and contamination of water bodies; ii) returning refugees that could increase population density and result in land use change (farming expansion) especially in the next 5 years; iii) legal and illegal logging; and iv) commercial hunting.

5.5.2.5. Mesurado Wetlands

Located in the capital city Monrovia, Montserrado County, the Mesurado Wetlands (6,760 ha) are important for the protection of three mangrove species (*Rhizophora harrisonii, R. mangle, and Avicennia africana*). It provides a favorable habitat and feeding ground for several species of birds, including the African spoonbill (*Platalea alba*), common pratincole (*Glareola pratincola*), and Eurasian curlew (*Numenius arquata*). It also hosts the vulnerable African dwarf crocodile (*Osteolaemus tetraspis*), the Nile crocodile (*Crocodylus niloticus*), and the African sharp-nosed crocodile (*Crocodylus cataphractus*) and plays an important role in shoreline

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stabilization and sediment trapping. The site is currently threatened by: deforestation for fuel wood and charcoal collection, solid waste disposal, unregulated fishing (including the use of dynamite), and industrial pollution, including paint factories. No management plan currently exists, but there are plans to put this wetland site under protected area management.[12]

5.5.2.6. Lake Piso Wetlands

The largest inlet on the Liberian coast, situated in Robertsport, Grand Cape Mount County, Lake Piso is characterized by a vast expanse of wetlands and lowland forest vegetation. The area is surrounded by forested hillsides (including one of the rarest tropical rainforests in the region) and fed by a number of creeks and rivers that drain a series of swamps above the lagoon, the lower ones of which are tidal and support mangroves. Additional mangrove swamps occur behind the dune ridge on the west side of the lake mouth and at creek mouths. A series of small lakes with swampy margins occurs on the sandy forested spit that separates the lake from the sea. Some 38 communities, totaling about 7,000 people, depend on Piso for transportation, commercial and noncommercial fishing, and sand for construction. Farm-to-market infrastructure was well-developed prior to the Civil War. The site is important both as a nursery and spawning ground for fish and sea turtles and as a feeding and roosting place for large numbers of shore and sea birds. Mammals such as antelopes, duikers, monkeys, and bushbucks, along with crocodiles, are found in the area.[13]

5.5.2.7. Cape Mount Nature Reserve

Cape Mount Nature Reserve (48,593 ha) includes a spit of land that separates Lake Piso from the Atlantic Ocean. Robertsport town lies at the tip of this spit. The site includes part of the lagoon, mangroves, rocky and sandy shorelines, together with a small area of lowland forest.[14] Biodiversity richness includes migratory bird species, sea turtles, hippos, manatees, primates, fish species, and medicinal plants, plus a wide variety of habitats and ecosystems such as coastal, marine, forest, mangrove, brackish water, island, and freshwater. Opportunities for conservation are based on the very unique marine biodiversity, the presence of mangroves as a breeding ground for marine species, the existence of baseline data for establishing a protected area, and potential for funding from tourism, research, and fishery sectors.[15] Lake Piso is also a designated Ramsar site. The main threats are mangrove deforestation, unregulated fishing, hunting, farming, hill settlements, port development, and sand mining.[16]

5.5.2.8. Key Biodiversity Areas

Beyond its national protected area system, Liberia is recognized as a country of exceptional global importance for biodiversity conservation. As early as December 1999, a Global Environment Facility (GEF)–funded priority-setting exercise for the Upper Guinean Forest Ecosystem identified Liberia as a top-priority country for conservation in West Africa, given the extent and integrity of its remaining forest ecosystems. Subsequent regional assessments, including the West African chimpanzee conservation planning exercise conducted in 2002, identified the southeastern forest block of Liberia as one of the highest-priority rainforest areas for the conservation of the western chimpanzee (*Pan troglodytes verus*).

[12] Ramsar sites Information service, 2016. Mesurado Wetland. Available at: https://rsis.ramsar.org/ris/1631
[13] Ramsar Sites Information Service. 2016. Lake Piso. Available at: https://rsis.ramsar.org/ris/1306
[14] BirdLife International (2016) Important Bird and Biodiversity Area factsheet: Cape Mount. Downloaded from http://www.birdlife.org on 24/05/2016
[15] USAID. 2008. Liberia Environmental Threats and Opportunities Assessment (ETOA).
[16] USAID. 2008. Liberia Environmental Threats and Opportunities Assessment (ETOA).

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The identification and refinement of **Key Biodiversity Areas (KBAs)** in Liberia have since evolved in line with global conservation standards. Initial site identification efforts led by IUCN and its partners were undertaken in the mid-2000s, and Liberia's biodiversity sites have subsequently been integrated into the **global KBA framework**, formally adopted in 2016 and jointly implemented by IUCN, BirdLife International, and other conservation organizations. Under this framework, KBAs are identified using standardized, quantitative criteria related to the presence of globally threatened species, geographically restricted species, biome-restricted assemblages, and significant congregations of biodiversity.

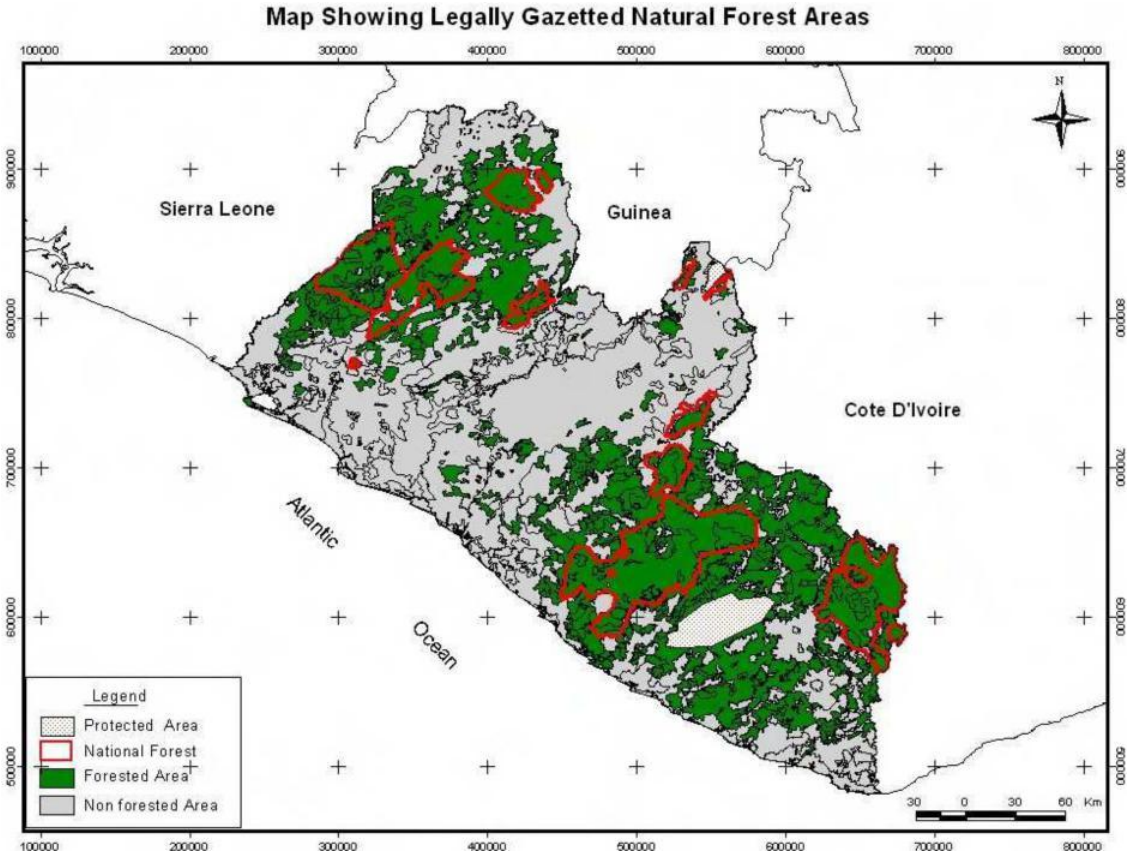
Key Biodiversity Areas in Liberia are **not legal protection categories** in themselves; rather, they constitute a scientific and planning designation intended to inform conservation prioritization, land-use planning, and the establishment or strengthening of protected areas. Many KBAs overlap partially or fully with existing protected areas, forest reserves, or proposed conservation sites, while others remain outside formally gazetted protection.

BirdLife International, as part of the KBA partnership, has identified **Important Bird Areas (IBAs)** in Liberia that are now fully incorporated into the KBA network. These sites include Cape Mount, Cestos–Senkwehn, Grebo, the Lofa–Gola–Mano Complex, the Nimba Mountains, Sapo National Park, the Wologizi Mountains, the Wonegizi Mountains, and the Zwedru area. Together, these KBAs and IBAs highlight landscapes of critical importance for biodiversity conservation at national, regional, and global scales.

5.5.2.9. Maps of legally gazetted forest

The gazetted forests of Liberia are shown on Figure 1.

Figure 1 : Gazetted forests of Liberia (*Fifth National Report to the Convention on Biological Diversity.* Monrovia, Liberia, 2014.)



5.6. Human Environment/Socio-economic

5.6.1. Demography

Liberia had, in the past two decades, one of the highest population growth rates in the world, but the trend has fallen. From 1960 to 2012, Liberia's population grew by 274%. In 2006, population annual growth reached a high of 4.6%, but has since fallen to 2.7% per year. The Liberia National Population and Housing Census (LNPHC) estimated in 2020, the population of Liberia to be at 5.25 million. The sex ratio was 101.5 males/100 females, and an annual population growth rate of 2.8% between censuses. The United Nations Population Fund (UNFA 2025), however, estimated Liberia's population at 5,700,000.

5.6.2. Ethnic Groups

Liberia is one of the oldest independent African states. The country's independence was declared and gained on July 26, 1847. The people of Liberia are from many parts of Africa, including free, formerly enslaved Africans from the United States of America. There are officially 16 ethnic groups (Embassy of Liberia, Brussels Mission) that make up Liberia's African population: The Kpelle (the largest group); the Bassa, the Gio, the Kru (often fishermen); the Grebo, the Mandingo (often in trade and transport): the Mano, the Krahn, the Gola, the Gbandi, the Loma, the Kissi, the Vai, the Belleh, the Mende and the Dey. Additionally, there are the Fula transhumance pastoralists who mostly engage in trade, and the Fanti fishermen from Ghana. Then there are Americo-Liberians, who are descendants of free-born and formerly enslaved African Americans who arrived in Liberia from 1822 onward, and Congo

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People (descendants of immigrants from the Caribbean), making up an estimated 5% of the population.

5.6.3. Religion

Religion is a tale of three faiths. The constitution of Liberia guarantees religious freedom. Christianity (around 85%) is the dominant religion in Liberia, followed by Islam (around 12%). Animism is in third place. Many Christians and Muslims, however, also practice animism to a varying degree.

5.6.4. Human Capital

Approximately 44 percent of the population is under 15, while the working age population (15-64 years) accounts for 57 percent of the total population of 5.6 million. By 2040, the working-age population will be two-thirds of a total projected population of almost 8 million. This could catalyze a demographic dividend or create social and economic strains if higher-quality jobs are not available. The youth unemployment rate (World Bank and Macrotrends) was between 2,7%-3% (World Bank and Macrotrends 2024), which is lower than the regional average. The adult unemployment rate as a share of the adult labor force (ages +25) was 4% (2022), compared to 3% in 2017. Unemployment rates are especially high among young women; female unemployment is associated with early marriage and childbearing, lower levels of educational attainment and workforce skills, and social norms that emphasize women's reproductive roles over their roles as income earners.

5.6.5. Poverty and Growth

The poverty rate ($2.15 per person per day) declined from 35.4% in 2022 to 34.2% in 2023. Unemployment is estimated at 3.7% in 2023, unchanged from 2022 (Liberia Economic Outlook, African Development Bank). The cost of food varies with the weather and is higher in the rainy season due to difficult access conditions and high transportation costs, bringing food from the farms and villages to the major towns and cities.

Growth was forecast at 5.2% in 2024 and 6.2% in 2025, driven by the expansion of services and agriculture and existing mining projects. Inflation was projected to decline to 8.4% in 2024 and 5.7% in 2025 due to anticipated stability in the exchange rate and tighter monetary policy. The fiscal deficit was forecast to edge from 3.4% of GDP to 4.2% in 2024 and deteriorate further to 4.5% in 2025 on projected increases in government expenditure. The current account deficit was forecast to increase to 23.7% of GDP in 2024 and to 24.6% in 2025, due to projected increases in imports (Liberia Economic Outlook, African Development Bank).

5.6.6. Sources of livelihood

Sources of livelihood vary. Agriculture, fisheries (done at subsistence levels), and petty trading are the three major livelihood sources. Commercial or cash crops include rubber, cocoa, coconuts, sugarcane and pineapple, plantains/bananas, palm, and cola nuts. Livestock is usually goats and poultry. The population outside of the urban areas is mostly engaged in subsistence agriculture, with main products being cassava, rice, and vegetables. However, in the greater Monrovia area, the livelihood sources are varied, where people have small-scale businesses, and salaried employment in addition to agricultural activities and selling produce in the markets. A large part of the population in urban areas is engaged in trade activities, and Greater Monrovia is the center of the country's industrial and commercial activities.

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5.6.7. Access to social services

Access to social services also follows the rural-urban divide. The overall literacy rate is estimated at the overall literacy rate is estimated to be between 48-50%, with significant gaps between urban (around 70%) and rural (around 44%) areas, and much higher rates for youth (around 77% in 2019) compared to older generations. Among the youth, males have higher literacy rates (86.23%) than females (71.85%). School facilities in the rural areas do exist, but for many children, the distance can be difficult to overcome. The difficulty of getting qualified teachers to settle in remote areas continues to be a challenge. The literacy rate in Montserrado County, which hosts the capital, is much higher at 70%, due to the fact that Monrovia has several educational institutions, including the University of Liberia.

5.6.8.Access to Electricity

Liberia's electricity access reaches just 31.8 percent overall, about 10 percent in rural areas, leaving more than 3.6 million people unserved. Planning models that layer existing grid assets onto demand forecasts conclude that DRE offers the lowest-cost answer for just over 35 percent of the population. A key pillar for the Country Partnership Framework (CPF) of Liberia is 'Narrowing the Infrastructure Gap to Foster More Equitable Development Nationwide' (Pillar III), which identifies the expansion of electricity services through both grid and off-grid options, including harnessing the country's renewable energy resources, as a priority activity. Additionally, Liberia's National Energy Compact aims to provide electricity access to an average of 100,000 households per year: about 60,000 via grid, 15,000 through mini-grids, and 25,000 through off-grid/solar home systems, achieving a national electricity access rate of 75 percent by 2030.

5.6.9. Fragility and Conflict

Liberia graduated from the list of Fragile and Conflict-affected States (FCS) in FY22. However, fragility remains embedded in the country's political, institutional, and social context (World Bank CPF 2025). While it no longer grapples with active conflict or high levels of interpersonal or gang violence, Liberia is still on a path out of fragility toward greater resilience. Liberia's legacy of fragility is reflected in high economic and social exclusion. Poverty, gender inequality, youth unemployment, and spatial inequalities–along with unequal access to infrastructure, basic services, and jobs–all act as drivers of vulnerability. Liberia's social protection system remains rudimentary, and inequality is pervasive, with stark urban vs rural and formal vs informal divides shaping the profile of exclusion. Gender inequality compounds these structural socio-economic disparities, as women from poor households and vulnerable communities face severely limited economic opportunities and endure worse human development outcomes. Gender-based violence (GBV) is not only a consequence of fragility, but also a driver, 11 and Liberia continues to grapple with a high incidence of GBV.

6. Identification of Environmental and Social Risks and Impacts

6.1. General

The risks and impacts identified in this ESMF are preliminary in nature. The likelihood of adverse impacts occurring is subject to risk management in each subproject. Potential risks and adverse impacts will be further assessed during the design and implementation of the subprojects. Overall, all subjects to be implemented, be they simple and small or large and complex, are likely to induce both positive and negative environmental and social impacts to a varying degree. Environmental and social impacts, by definition, imply an alteration of environmental and human conditions or the creation of new sets of adverse or beneficial environmental and social consequences caused by the action under consideration. Potential risks and impacts associated with the implementation of the project are divided into four phases of the project.

- Pre-construction phase
- Construction phase
- Operation Phase
- Decommissioning

During each phase, the project is likely to induce positive and adverse environmental and social impacts. Some of those impacts are a function of the objectives of the project, while others are a function of the way in which the sub-projects are designed to meet their objectives. A sample of benefits (positive impacts) associated with the project is presented below.

6.2. Positive Impacts

Reduced lighting costs to project beneficiaries – Electricity access will replace kerosene lamps and candles, which are expensive to operate. Kerosene is costly both for low-income households that buy it and for governments that subsidize it. In parts of Africa, for instance, kerosene costs make up 10-25% of monthly household budgets according to a report by the Lighting Africa market trends report 2013. Compared to these costs, the electricity bills seem to be significantly cheaper than using kerosene for lighting. Therefore, this project means greater savings on the part of the households of the countries in this phase.

Poverty alleviation – With more affordable and stable electricity in the otherwise off-grid areas, the beneficiaries will be engaging in income-generating activities and businesses that require power supply. Hence, improving their economic status.

Employment Creation – This Program will have a positive impact on both direct and indirect employment levels in the countries of this phase, although the bulk of them will be on a temporary basis during the construction of the infrastructure. These job opportunities will be made available to the locals, thereby reducing unemployment in and around the construction areas. In addition, this will translate into incomes at the household level, which will be applicable to other spending and demand in the local economy.

Increase in business/commerce – Another positive impact of the project involves local material sourcing, mainly the sale of materials for use in the project. Some of these can be expected to be sourced locally, and others through importation. Project activities are therefore likely to generate new income for the local population in the harvesting and transportation of sand, ballast, and gravel, not only for project activities, but also for the upgrading of existing houses receiving electricity.

Increasing electricity access to the poor – All the countries part of this phase of the Program has a very low rate in terms of electricity access, especially in rural areas. The Program will

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greatly contribute to upscaling the rate of access and, at the same time, improve the livelihood of the poor population who will benefit from this electricity access, but also the farmers who will benefit from the irrigation program.

Community development programs and social inclusion – This project aims at increasing access to electricity in off-grid communities. This is in line with the tenets of social inclusion, which the World Bank defines as the process of improving the terms for individuals and groups to take part in society. Further, Social inclusion aims to empower poor and marginalized people to take advantage of burgeoning global opportunities. It ensures that people have a voice in decisions that affect their lives, and that they enjoy equal access to markets, services, and political, social, and physical spaces.

Improved health statistics with an increase in life expectancy – The use of kerosene, firewood, and candles represents health risks for the users, as reported by the World Bank report 2008 on the Welfare of Rural Electrification. The report notes that kerosene lamps emit particles that cause air pollution; these are measured by the concentration of the smallest particles per cubic meter (PM10). But these particles do not disperse, so burning a lamp for four hours can result in concentrations several times the World Health Organization standard. The health risks posed by this indoor air pollution mainly include acute lower respiratory infections, but also low birth weight, infant mortality, and pulmonary tuberculosis. Additionally, available data suggest that insufficient illumination (low light) conditions can cause some degree of eye strain, and reading in these conditions over long periods of time may have the potential to increase the development of nearsightedness (myopia) in children and adults. This project will result in many families replacing kerosene lamps for lighting with electricity, thereby reducing disease burden at the family level and on the government.

Improved education and certification in solar engineering & benefits to education – Access to electricity at the household level and in schools will create opportunities for children to study. For example, children from households with electricity have an advantage because they have more time for study and doing homework in the evening as opposed to children from households without electricity. This benefit could, towards the end, translate to better results. Additionally, children in households with electricity can also access TV and the internet, which gives them the advantage of benefiting from education programs being aired through such communication channels. Appropriate lighting through electricity will provide school-going children in homes an opportunity to study after household chores, especially girls who must assist their mothers in preparing dinner.

Improved standard of living – The implementation of this Program will result in connecting millions of beneficiaries to off-grid electricity. Access to electricity will change the standard of living of the people as they can use domestic appliances like iron boxes, fridges, television sets, washing machines, internet, etc. Use of electricity for lighting implies that the people will not be exposed to smoke arising from the use of kerosene lamps, which predispose people to respiratory diseases.

Increase in social interactions within the campuses – There will be enhanced security in the targeted countries arising from well-lit social, commercial, and individual premises. With the implementation of the Program, the level of security will improve across the rural areas of the affected countries. This is because of more security lights, which help prevent opportunistic crimes and gender-based violence.

Communications – Access to electricity will lead to improved communication for the beneficiaries. This will be enabled by the fact that charging mobile phones will be easier and cheaper. Access also to mass media like radio, TV, and the internet will provide an opportunity

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for households to access a wide range of information, which is useful for decision-making. Some of the information beneficiaries receive include information on markets, farm inputs, livestock & crop management and local affairs, nutrition, diseases, investments, and entertainment, among others.

Gender Considerations – Electricity is a basic service, especially for lighting, but is still a luxury for many rural women and men. Access to modern electricity will go a long way towards alleviating the daily household burdens of women, giving them more time, improving their health and enhancing their livelihoods. Available literature on gender and energy suggests that providing electricity to communities and homes will promote gender equality, women's empowerment, and women's and girls' access to education, health care, and employment. Indeed, most gender benefits of the project will occur because women tend to spend more time doing household chores, compared to men, that can be carried out more productively with electricity. The first and strongest impacts of the project shall occur via lighting and TV. Electricity will displace more expensive candles and kerosene lamps, thereby reducing indoor air pollution, fire, and burn risk, and providing higher-quality light. Women and girls will benefit more from the air pollution of kerosene lamps because they spend more time in the kitchen. Lighting and television will improve access to information, the ability to study, and extend the effective working day. This is more so because children can have extended study time. . The project will also enhance security in the rural areas, as most homes will be lit up, a benefit that is more appreciated by women.

Employment – In many countries, electrification is linked to an increase in women's employment. The time savings delivered by electric power and the ability to carry out domestic activities in the evening due to lighting free up women's time to participate in paid work. Similarly small/micro business led by women/ women entrepreneurs will benefit from electrification which may enhance their entrepreneurship/business activity

Gender Norms and Women's Agency – Energy access projects can also shape new community decision-making and leadership models, for example, if local electrification committees are set up, women and men can be given equal opportunities to run for key positions to voice community priorities and realities, thereby increasing women's voice in decision-making. Additionally, electrification can help to increase safety through public lighting, which is particularly important for the socio-physical mobility of women and girls.[17]

6.3. Adverse Impacts

The environmental risk associated with off-grid solar electricity is rated as moderate because solar energy is promoted as a green alternative for the environment, one that harnesses free and bountiful energy from the sun. However, solar energy comes with its own environmental challenges regarding land use, water consumption, emissions, and the use of hazardous materials. Based on the nature of the proposed project and the kind of off-grid solar system, the main impacts will be on the impact of hazardous waste materials (spent batteries), but other potentially adverse impacts should be addressed. Below are the major environmental and social impacts associated with the general construction activities, as well as the operation of power distribution lines.

Air Emissions – Construction activities are usually associated with the release of fugitive particulate matter (PM) generated from land clearing, excavation and movement of earth

[17] Taken from: Schomer, I. et al. January 2017 (Conference Edition). Mini-Grids and Gender Equality: Inclusive design, better development outcomes. ESMAP. Washington D.C.: World Bank Group https://www.climateinvestmentfunds.org/sites/default/files/mini-grids_and_gender_equality.pdf

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materials, cut and fill operations, contact of construction machinery with bare soil, and exposure of bare soil and soil piles to wind. The use of construction equipment and power generators is expected to release exhaust-related pollutants such as carbon monoxide (CO), nitrogen oxides (NOx), sulfur oxides (SOx), particulate matter (PM), and hydrocarbons (HCs). Air emissions during the project construction phases tend to be confined to the immediate vicinity of the construction site.

Noise – During construction activities, noise may be caused by the operation of pile drivers and demolition machines, earth-moving and excavation equipment, generators, and concrete mixers. The increased noise level will impact construction workers and nearby residential areas. Nevertheless, the latter impact will be limited to the works' implementation phase and will cease when the work is complete. Unusual humming noise from transformers may also occur due to the weakening of core stampings and clamping of external fittings. Minor noise pollution may result from the operations of Boom trucks used to mount distribution transformers.

Waste – ***Solid Waste***: Some amount of waste materials, including cleared solid waste debris, backfill earthwork, obsolete transformer, and other construction wastes, will be generated during the construction period.

Liquid Wastes: These include non-hazardous operational waste, construction sites, e.g., lubes, lubricants, sanitary water, paints, etc.

Gaseous wastes: These include combustion products from construction engines, welding gas, natural gas leaks, etc.

***Hazardous wastes*:** Any gaseous, liquid, or solid, which, due to quantity, physical, chemical, or infectious characteristic, has the potential to harm human health, the environment when improperly handled, stored, disposed, transported, or treated.

Used batteries: The disposal of lead-acid batteries and lithium batteries used in mini-grids will present a challenge for the project's long-term sustainability.[18] Likewise, the disposal of used solar panels may also present a risk in the longer term. Additionally, the photovoltaic cell manufacturing process includes some hazardous materials that need to be handled and disposed of properly. These materials could pose serious environmental or public health threats related to the disposal of end-of-life batteries containing hazardous materials. Proper disposal or recycling of spent battery energy storage systems at the end of their life, which is usually 3-5 years, is the main concern. Currently, there are no specific hazardous waste disposal procedures/sites in Liberia for the disposal of end-of-life batteries, but there are firms in other African countries that collect, and export spent batteries for recycling.

Water Quality – Surface water pollution may result from uncontrolled discharges into rivers or seawater, accidental spills of oil, runoff, erosion, and sediment transport. The latter impact is particularly significant when construction activities occur within or in proximity to surface water, such as in the case of the construction of hydropower structures construction of heavy fuel oil supply facilities on the coastal strip. Polluted water flowing into surface water bodies could impact the aquatic organisms and affect the quality of life of downstream users when river waters are involved. Groundwater contamination may occur from percolation of oil and lubricants in soil. Nevertheless, waters disturbed by construction activities are likely to recover when sediment is controlled, and natural processes are permitted to replenish stream life.

[18] This will present an issue once batteries reach their recycling age. It has been estimated that should Liberia reach its target of installing 30,000 MW of solar PV by 2030, about 280 million used batteries will end up needing disposal/ recycling (assuming average battery life of 3 years).

Soil – During construction activities, soil erosion may be caused by exposure of soil surfaces to rain and wind during site clearing, earth moving, and excavation activities. Improper grading of plant and sub-station sites and tower locations may also cause drainage and erosion problems. The resulting soil particles may be transported into surface drainage networks, thus affecting the quality of natural water systems and ultimately the biological systems using the waters. Water may accumulate in excavated pits, potentially leading to the breeding of insects and other infectious organisms. An accidental spill of oil or lubricant may infiltrate soil and enter surface or groundwater. Soil contamination resulting from oil leakages through the joints of power transformers may occur due to defective packing and improper tightening.

Flora and Fauna – Stream pollution by sediments from construction activities often consists of suspended and settleable solid particles that may coat, bury, suffocate, or abrade living organisms such as eggs, larvae, fish, etc. Many aquatic invertebrates and fish may change population density and community composition if high concentrations of suspended solids are encountered. Aquatic vegetation may be adversely affected by a reduction in photosynthesis due to high turbidity. Dredging may also increase turbidity and sediment load and reintroduce into suspension bottom sludge, trapping toxic precipitates. The toxic sludge may be ingested or concentrated in marine plants and animal species and biologically magnified in food chains. Detonations from blasting for in-stream foundation excavations may produce underwater shock waves, potentially injuring or killing fish in the sphere of influence.

The establishment of mini-grids may induce land acquisition. Likewise, the construction of local business offices and customer service centers may require the clearing of trees and vegetation for new sites that are not within existing substations. Therefore, construction activities, particularly for the district offices, may result in loss of vegetation and plant cover, disturbance of fauna habitats, weakening and degradation of soils, disturbance of the natural landscape and morphology. Thus, the adequate selection of the location of offices or customer service centers may reduce potentially adverse environmental and social impacts.

Traffic – The main impact on road traffic will be during the movement of distribution materials and equipment from the Monrovia Free Port to the contractors' warehouse and from the warehouses to the various sites. Clearing solid waste debris and cutting and filling of sites for the district offices may cause some traffic, but the impact would be minimal.

Health and Safety – Both occupational health and safety as well as community health and safety issues, may arise during the construction phases of the project (which include health and safety risks from the construction of new buildings for district offices and customer centers. Especially if the community's access to the worksite is not controlled. People may be injured by construction machinery or may come into contact with live wires/equipment in communities that already have electricity. This includes GBV and SEA/SH risks as well as the usual construction-related EHS risks. The impact of worker exposure to Mpox during construction work could potentially be significant, but the likelihood of such an occurrence would be seldom if the correct procedures and mitigation measures are applied and followed. During the installation of meters, the contractor's workforce interacts with customers, hence posing risks to both workers and the customers. Although there is public and scientific concern over the potential health effects associated with exposure to electromagnetic fields (EMF), no empirical data demonstrates adverse health effects from exposure to typical EMF levels from power transmission lines and equipment. However, while the evidence of adverse health risks is weak, it is still sufficient to warrant limited concern (World Bank 2007, Development Report). Fire hazards may also occur due to the ignition of insulating oil in the distribution transformer units.

Land Use – The project will require the installation of solar power stations of various sizes and mini power grids on rooftops or on poles next to the users' homes or buildings. Those processes will induce temporary or long-term land acquisition. The distribution lines may also interfere with the existing land use/land users. For instance, some existing tree crops and other livelihood sources within the right-of-way may be affected during the construction of distribution lines. Additionally, the construction of investors/contractors' offices and/or customer connection centers may necessitate the acquisition of lands and is therefore potentially associated with social problems such as the loss of houses and structures on the land, loss of access to common resources and facilities, and the potential change in the livelihoods of the communities that lived on the land or used it for cultivation. The installation and operation of distribution systems may result in the depreciation of the price of immediately adjacent lands and properties.

Socio-Economic Impacts – Although the construction phase will generate several short-term job opportunities for the local people, negative implications on the socio-economics may occur as a result of potential loss of land use (though very unlikely), interruptions to means of livelihood, disturbances to cultural resources, influx of workers, child labor, and/or forced labor.

The increased availability of power supply in areas facing electricity shortage and/or absence of supply will open up the latter areas for new settlements, give rise to the value of land and properties, population influx, which, if not properly managed, may put pressure on existing resources and infrastructure, and also expose residents to Sexually Transmitted Infections and Diseases, including Mpox and local inflation. On the other hand, the availability of power supply promotes economic development and improves the standard of living and well-being of residents.

Physical Cultural Resources – Improperly sited projects can damage physical cultural resources and diminish their value. Moreover, unregulated and careless excavation works may destroy potential buried archaeological remains. Damage to physical cultural resources constitutes a threat to social cohesion and eliminates the potential for their use in tourism. If properly planned and sited, developments related to the distribution components will have no impact on the country's physical cultural resources. However, to mitigate impacts on any cultural heritage that may be discovered during excavation and other civil works, a Chance Finds Procedure will be applied (see Annex 15: 19). Below are two tables summarizing potential adverse environmental and social impacts identified by project phase and per project component, and role and responsibilities for mitigation measures.

Table 6: Potentially Adverse Environmental and Social Impacts by Project Phase

Project Phase	Potential Impact Source	Potential Impact
Pre-construction phase	Land acquisition from members of the communities before the construction phase. Destruction of structures, economic trees, and cash crops Lack of Inclusive consultation of all stakeholders including vulnerable persons and groups	• Negative perception and discontent expressed by members of the community. • Loss of people's properties and farmlands; • Decrease in accruable income. • Hostile and unfriendly community attitudes. • Unresolved issues with land acquisition extending into the construction phase. • Exclusion of vulnerable groups from project activities or consultation process
	Gender based violence/Sexual exploitation and abuse/Sexual harassment (GBV/SEA/SH)	• Degraded physical and emotional health of those who have experienced it. • Acute injuries and chronic pain, • Gynecological problems, depression, trauma, and substance abuse. • Limit access to educational and economic opportunities, • Early marriage and adverse experience • Fear of physical or sexual abuse leads to high school dropout rates, • Curtailing of educational advancement and future economic opportunities. • Stigma and rejection associated with rape and other forms of sexual abuse.
	Waste from cleared vegetation	▪ Depletion of landfill resources; ▪ Air pollution and dust in air, climate change effects; ▪ Sedimentation and soil erosion, ▪ Disruption of waterways and drainage corridors

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Project Phase	Potential Impact Source	Potential Impact
Construction Phase, including civil, mechanical, and electrical works and installation of PV panels and associated components	Excavation, grading, compaction, filling, and other civil works.	▪ Excavation and compaction activities through construction works will alter the soil properties, including loss of valuable top soils,
	Construction waste generation and disposal, including excavated soil, general refuse, garbage, inert construction materials, metal scraps/ electronic wastes, concrete waste, food waste, and used packaging materials	▪ Depletion of landfill resources; ▪ Air pollution, dust, and climate change effects; ▪ Sedimentation and soil erosion, ▪ Disruption of waterways and drainage corridors ▪ Improper disposal of Scrap metals could leak toxins like lead, mercury, and arsenic into the soil and water supply, harming plants, animals, and humans alike
	Construction activities on or near agricultural lands/pastures are impacting land use	• Loss of agricultural land (arable land), pastures, or orchards if not properly managed • air pollution due to the emission of particulate matter, nitrogen oxides, and volatile organic compounds.
	Air pollution from fugitive dust and emissions from construction vehicles, plants, and equipment. Dust is generated by excavation and earth-moving operations. Exhaust emissions occur from poor maintenance of plant and equipment or over-revving of engines	• Impairment in the health of local residents of the community, especially cases of respiratory infection and respiratory disease symptoms. • Incidence of ocular disease symptoms. • Presence of suspended particulates exceeding acceptable limits • Complaints from members of the community. • Nuisance to residents and other sensitive receptors • Indirect effects on the surrounding population and ecosystems

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Project Phase	Potential Impact Source	Potential Impact
	Noise and Vibration from construction activities	• Complaints of disturbance from members of the community. • Damages to structures overtime as a result of the vibration caused by the heavy machinery.
	Toxicity to aquatic life resulting from spills of chemicals and hazardous materials during construction activities that reach the stream through surface loss	• Contamination of local waterways may cause harm to plants, fish, and wildlife, and degrade water quality and quantity.
	Disruption of infrastructure functioning in the community near the project areas	• Community health and safety at risk from infrastructure updating and expansion, including potential for loss of water, electricity, and access to roads
	Gender based violence/Sexual exploitation and abuse/Sexual harassment (GBV/SEA/SH due to labor influx)	• Complaints of violations from members of the community. • Degraded physical and emotional health of those who have experienced it. • Acute injuries and chronic pain, • Gynecological problems, depression, trauma, and substance abuse. • Limit access to educational and economic opportunities, • Early marriage and adverse experience • Fears of physical or sexual abuse leading to high school dropout rates, • Curtailing of educational advancement and future economic opportunities. • Stigma and rejection associated with rape and other forms of sexual abuse.

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Project Phase	Potential Impact Source	Potential Impact
	Water Quality changes resulting from construction works, seepage of fuel from powered machinery into the watershed, discharge of untreated effluent into water bodies, or effluent from workers in the campsites.	• Change in the water color. • Change in pH levels. • Eutrophication • Increased cases of disease, illnesses (especially waterborne diseases) • Smell • Alteration of aquatic life.
	Impact on flora and fauna resulting from mobilization of equipment and construction activities, etc. Weed invasion/ proliferation of opportunistic species (weeds & pests)	• Reduction of the richness in the number of available living species, including protozoans • Reduction in the number of native wildlife. • Alteration of various forms of plant and animal life • Presence of Wildlife species within community dwellings and corridors.
	Transportation & Traffic Impact: Existing travel patterns will be negatively impacted during the construction phase of the project in the states.	• Complaints from members of the community. • Increase in noise and air pollution. • Increase in roadside hazards and accidents.
	Accidents occur during the construction phase as a result of increased vehicular movements.	• Increase in total number of accidents during the construction phase.

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Project Phase	Potential Impact Source	Potential Impact
	Increased crime rates, Social Stress & Disruption Impact Source: • labor influx is used for civil work activities. •	• Crime rates and disputes amongst members of the communities. Including Sexual Abuse and Exploitation and Sexual Harassment (SEA/SH) • A collapse of the Laws, rules, and norms within the community. • Increased anti-social behavior.
	Human voluntary Displacement Impact following willing seller-willing buyer Sources including Civil works	• Relocation of people and their livelihoods after agreeing for land donation or following willing seller-willing buyer.
	Archeological & Cultural Loss Impact Sources	• Loss of valuable archaeological and historical artifacts • Complaints from members of the community
	Aesthetics Impact Source: Construction works.	• Diminished aesthetic levels.

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Table 7 : Role and responsibilities by component and phase

Operational Phase	Roles and responsibilities (RREA and private sector)		
	RREA	Private sector	Other key stakeholders
Component 1: Solar Mini grids			
1. Setting applicable E&S requirements	Sets applicable E&S requirements and includes them in the grant application process for mini grid developers (including applying (a) ***Exclusion Criteria for Mini-Grid Developers, SHS Companies, and Contractors*** and (b) ***Exclusion Criteria for Mini-Grid and Power Generation Sites***). Requires mini grid developers to prepare ESIAs to manage E&S risks across subprojects, each developer will design and implement. Integrates E&S requirements in legal agreements with mini-grid developers.	**Mini grid developers** incorporate applicable E&S requirements in their ESIAs to manage E&S risk consistently in subprojects and must have E&S management plans in place that are in line with the RFMs ESMS and the ESF requirements.	N/A
2. Screening for E&S risks and impacts	Validates / verifies developers' process and risk categorization	Determine key E&S risks and impacts of individual mini grids, apply ***Exclusion Criteria for Mini-Grid and Power Generation Sites,*** and assign E&S risk category (I or II)[19]. *Any subproject requiring*	N/A

19 Corresponding to high or medium / low risk.

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Operational Phase	Roles and responsibilities (RREA and private sector)		
	RREA	Private sector	Other key stakeholders
		resettlement must be category I. Submits a list of category I sites to RREA before construction for verification.	
3. E&S due diligence and risk management	Conducts site visits for all category I mini grids and for a sample selection of category II mini grids.	Prepare and integrate into design: • For category I, ESIA, as well as Livelihood Restoration Plan (LRP), as required. • For category II, ESMP • For both, Stakeholder Engagement Plan (SEP) and the grievance mechanism	World Bank reviews and provides clearance for ESIAs, [20] and LRPs as required. EPA provides environmental clearance, as required
4. Monitoring	Conducts monitoring activities during mini grid construction and operation (sample, risk-based checks, and site visits)	Conduct self-monitoring activities in line with their ESIAS, and maintain monitoring records	Communities participate in monitoring, as per SEP.
5. Reporting	Reviews annual E&S reports from developers and conducts follow-ups. Maintains records of developer screening, ESIAs, ESMPs, and other relevant documents	Prepare annual E&S reports to RREA. Report any incidents or accidents within several days of occurrence	N/A

20 First several ESIAs to ensure quality and consistency.

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Operational Phase	Roles and responsibilities (RREA and private sector)		
	RREA	Private sector	Other key stakeholders
6. Independent E&S audit	Engages an independent E&S auditor	Provide all relevant reports and documents to the independent E&S auditor	Independent E&S auditor conducts annual review of developers' E&S performance.
Component 2: Standalone Solar Systems for Homes, Enterprises, and Farms			
1. SHS company grant application	Incorporates E&S requirements (clean track E&S record, applies ***Exclusion Criteria for Min-Grid Developers, SHS Companies, and Contractors***) into application and grant agreements. Conducts a review of companies' SHS.	**SHS companies** prepare elements required for ESIAs in line with RREA's requirements. Submit a statement of current practice for battery disposal/ recycling	N/A
2. SHS company operations	Conducts sample performance checks, as needed	Remain in good compliance with all relevant requirements. Participate in battery disposal/recycling program	N/A
3. Monitoring	Oversees (under TOR for general monitoring of SHS companies) monitoring E&S compliance by an independent company.	Conduct self-monitoring, provide relevant documentation	N/A
1. Monitoring	Monitors contractor E&S performance before and during construction	Self-monitors against ESMPs	PIU in the monitoring process
2. Independent Verification Agent	Engages an independent E&S Verification Agent	Provide all relevant reports and documents to the independent E&S auditor	PIU

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6.3.1. Identification of Potential E&S Risks and Impacts by Project Component

Land acquisition, SEA/SH, inadequate stakeholder consultation, lack of a functional grievance resolution mechanism, and battery and panels waste are five issues that are likely to constitute critical, recurrent, and systemic E&S risks throughout the project. Land acquisition will be acquired through a willing buyer, willing seller agreement. Such agreements will be verified against land market prices or relevant methodologies if active land acquisition markets do not exist. However, there may be issues with voluntary land donation practices that do not comply with ESS5 requirements, particularly due to documentation. SEA/SH risks are inherently associated with the local influx of workers, who will sooner or later satisfy their sexual needs where they happen to occur. Inappropriate waste management of used batteries transpires as a short-term and medium-term risk, and possibly also a long-term risk with adverse impacts.

Inadequate consultation can imply exclusion of some people or groups of people who may not benefit from project positive outcomes or be exacerbately affected by the negative impacts of the Program. A fair, transparent and inclusive Grievance Resolution Mechanism is very important and key aspect for the smooth implementation of the Program because stakeholders feedback, complaints, suggestions will be heard and properly managed by the PIU.

These five risks are likely to manifest prominently and frequently across many subproject sites to be developed and implemented by the private sector. Stakeholder engagement has been identified as a key to managing not only the three risks, but also other potential E&S risks.

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Table 8: Key Environmental and Social Risks by Project Component

Component/ risk issue	1. Solar Hybrid Mini grids for Rural Economic Development	2. Standalone Solar Systems for Homes, Enterprises, and Farms	1.1. Power Systems for Interconnected Mini grids/Mesh grids
1. Land acquisition/ resettlement	It is expected that land will be acquired for mini grid sites using the following options: Purchase, Lease, or Voluntary Land Donation / VLD[21] (from individuals, families, or communities). Involuntary resettlement in the form of economic displacement is likely (e.g., cutting of economic trees). During stakeholder consultations, it was reported that communities are likely to appreciate the mini grid sub-projects and may offer to voluntarily donate land as required; nevertheless, the risk remains that people may be displaced, and land use changed, especially in unforeseen situations. In addition, it is not inconceivable that land donors may change their minds	Not expected for this component.	Major risk is expected to be encroached on land that may be used for interconnected mini-grids, which are allocated and traditionally used by communities. The main concern would be RREA's capacity for conducting stakeholder engagement, where needed.

[21] Voluntary land donation is strictly defined in international practice as the ceding of a property by an owner who is: a) fully informed; and b) can exercise free will, i.e., can refuse to sell or to donate. "Fully informed" means that the owner has complete information regarding the proposed activity and its impacts, its land requirements, and its alternate activity sites, as well as his or her rights to compensation. The owner has also been provided with sufficient time to consider his or her disposition of the property, and the owner has knowingly rejected the right to renege on his or her initial decision. "Free will" means that the owner can reject the possibility of giving up his or her land.

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Component/ risk issue	1. Solar Hybrid Mini grids for Rural Economic Development	2. Standalone Solar Systems for Homes, Enterprises, and Farms	1.1. Power Systems for Interconnected Mini grids/Mesh grids
	about donations, or pressure may be brought to bear on people to donate land against their will. As such, VLD by communities to mini-grid developers will not be encouraged except (a) it meets the criteria set out in the VLD guidelines (Annex 15.10) and (b) the process is verified and approved by the RREA prior to finalization of the donation.		
3. Labor and working conditions	Poor OHS practices exist among developers, although not expected to be high among international developers. There is a risk of poor OHS practices among engineering, procurement, and construction (EPC) contractors, including child labor. It must be ensured that labor conditions comply with national laws and the LMP.	Labor and working conditions practices are generally adequate and shall be maintained. Weak labor practices (e.g., use of child labor) may be possible but are not expected to be frequent or severe if the LMP is developed and implemented.	There is a risk of poor OHS practices among EPC contractors, including child labor. It must be ensured that labor conditions comply with Liberia regulation and international good practice.

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Component/ risk issue	1. Solar Hybrid Mini grids for Rural Economic Development	2. Standalone Solar Systems for Homes, Enterprises, and Farms	1.1. Power Systems for Interconnected Mini grids/Mesh grids
5. Resource consumption (water)	Stress in local water use and supply is possible due to the irrigation of support to be granted to agricultural activities and the need to wash solar panels frequently.	Not expected.	Same as component 1
4. Community health and safety issues	General construction impacts, as well as moderate labor influx, can be expected and may be associated with security and SEA/SH risks.	The installation of SHS generally has a low risk of community health and safety concerns, but the presence of workers with money to burn raises concerns.	Same as component 1.
4. Biodiversity impacts	Bird and bat mortality is noted as a possible risk due to the reflection / perception of solar panels as water bodies (collisions). Due to the small size of mini-grids, this risk is not expected to be high if the use of anti-glare coating on the panel and installation of rotary equipment, or LED lights are implemented after installation. Impacts on sensitive natural habitats are possible where mini-grids are constructed in such areas. Initial screening done	Not expected.	Bird and bat mortality is noted as a possible risk due to the reflection / perception of solar panels as water bodies (collisions).

Component/ risk issue	1. Solar Hybrid Mini grids for Rural Economic Development	2. Standalone Solar Systems for Homes, Enterprises, and Farms	1.1. Power Systems for Interconnected Mini grids/Mesh grids
	through electricity demand surveys indicates this is not to be a frequent case.		
5. Waste management	Risks associated with the disposal of lead-acid batteries and lithium batteries used in mini-grids will present a challenge for the project's long-term sustainability.[22] Disposal of used solar panels may also present a risk in the longer term. Waste generation from solar panel installation includes cardboard, plastic wrap, and wooden pallets from transporting panels and components; some construction debris (concrete, wiring and mounting structures). Poor OHS practices exist among developers, although not expected to be high among	Risks associated with the disposal of lead-acid batteries and lithium batteries used in mini-grids will present a challenge for the project's long-term sustainability.[23] Disposal of used solar panels may also present a risk in the longer term. Poor OHS practices exist among developers, although not expected to be high among international developers. There is a risk of poor OHS	Same as component 1.

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Component/ risk issue	1. Solar Hybrid Mini grids for Rural Economic Development	2. Standalone Solar Systems for Homes, Enterprises, and Farms	1.1. Power Systems for Interconnected Mini grids/Mesh grids
	international developers. There is a risk of poor OHS practices among Engineering, Procurement, and Construction (EPC) contractors. It must be ensured that labor conditions comply with national laws regulation and the LMP included in the POM.	practices among Engineering, Procurement, and Construction (EPC) contractors. It must be ensured that labor conditions comply with national laws regulation and the LMP included in the POM.	

6.4. Estimated Probability and Severity of E&S Risks and Impacts

The potential negative E&S impacts associated with the sub-projects are summarized in Table 4.4. Beyond the mitigation measures discussed below, it will be important to adopt waste management principles (Source reduction, reuse, and recycling) at all times so as to meet the World Bank-relevant ESS, including: 1, 3, 4, and 6.

Table 9: Potential E&S Risks, Impacts, and Magnitude Relative to Project Components1 & 2

Environmental Receptor/ Medium	Comment	Impact Indicators	Impact Level
Physical			
Air	Ambient air quality within the Project site and the surrounding environment	Increase in concentration of gaseous and particulate pollutants	Moderate to low
Soil	Soil environment within the Project site and its Area of Influence (AoI)	Changes in physical, chemical, and biological properties of the soil; loss of soil ecology and fertility; soil erosion, etc.	Moderate to low
Groundwater/ aquifers	Underground water resources in the Project's AoI	Decrease in underground water/aquifer reservoir level; groundwater contamination	Moderate to low
Landscape/ topography	The geomorphological landforms and terrain of the Project site and its surrounding environment	Alteration in drainage pattern; changes in landscape	Moderate to low
Biological			
Terrestrial flora and habitats	Plant species (vegetation) within the Project site and its AoI	Loss of terrestrial flora; introduction of new species	Moderate
Terrestrial fauna	Terrestrial fauna within the Project site and its surrounding environment	Loss of terrestrial fauna; involuntary migration	Moderate
Waste			
Battery disposal	End-of-life battery disposal remains the major risk	OHS impacts on workers handling battery recycling, uncertified facilities, and inadequate waste disposal practices	High
Socio-economic Environment			

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Environmental Receptor/ Medium	Comment	Impact Indicators	Impact Level
Land use	Existing land use within the Project site and its AoI	Changes to the existing land ownership/tenure arrangements	Moderate
Willing-buyer, willing-seller agreements	These agreements will be checked ex-post, and there may be a risk of the price market not being duly identified or put pressure on landowners to sell.	i) Relevant methodologies are used to identify market prices and to propose a relevant land acquisition cost when markets do not exist. ii) Methodologies are included in the POM of the Project.	Substantial
Land acquisition – Voluntary land donation (VLD)	Land donation is authorized by ESS5 and submitted to a series of conditions. Land donation will certainly not be the preferred option for land acquisition, but it may be relevant in certain scenarios. For instance, community-scale water and irrigation micro-infrastructure where land needs are tiny and benefits are direct. Another example is small pads for anchor stays, where the use of the plot is not impaired, and the household receives upgraded service.	i) ESS5 conditions are met, including: (a) donors are appropriately informed and consulted; (b) refusal is an option and donors confirm in writing; (c) the donated area is minor and does not reduce the donor's remaining land below what is needed to maintain livelihoods at current levels; (d) there is no household relocation; (e) the donor directly benefits from the project; and (f) for community/collective land, all users/occupants consent. ii) Transparent records must be kept of consultations and agreements VLD requires prior Bank approval - as per ESS5	Moderate
Visual impacts	The aesthetic quality of the Power Plant in the surrounding visual catchment	The compatibility of the Power Plant with the character of the locality, visual nuisance through the reflection of panels	Moderate
Utilities	The existing utilities (e.g., power supply, water, sewer services, etc.) in the Project's AoI	Changes in existing utilities; potential damage to public utilities	Moderate
Infrastructure	The existing infrastructure, such as	Potential damage to road infrastructure; road traffic and	Moderate

Environmental Receptor/ Medium	Comment	Impact Indicators	Impact Level
	roads, waste handling facilities, etc., within the Project's AoI	accidents; increased pressure on waste management facilities	
Employment/ income	The employment situation in the Project's AoI	Opportunities for local employment; changes in income level	Moderate
General public/ project communities	Labor influx grievances, and SEA/SH.	Increase in the demand for basic services due to a temporary local influx of workers. Increased crime (including SEA/SH, prostitution [, theft, and substance abuse) is expected to increase in the proposed sub-project areas as the influx of workers increases. Increased risk of communicable diseases, including STIs and Mpox. Increased safety, security incidents, and accidents.	Moderate
Other (Health and Safety)			
Construction workers	Health and safety of construction workers.	Accident, injury, fatality, exposure to nuisance (dust, noise), fire, etc.	Moderate
Workplace health and safety	Health and safety of employees involved in the Power Plant operation. Safety air traffic when a plant is near an airport.	Safety and security incidents, accidents, injury, fire, explosion, etc.	Moderate to substantial
General public/ communities	Health and safety of the general public	Safety and security incidents and accidents, fire, explosion, (construction camps), etc.	Moderate

6.4.1. Capacity Assessment of Key Project Implementers

Specific E&S risks for each project component are mainly linked to processes and the capacity of key stakeholders for E&S risk management. Capacity assessment aspects that may contribute to risks for each component are presented in Table 11.

Table 10 ：Identifying E&S Risks Due to Low E&S Management Capacity

Component 1	Key stakeholders	Capacity and Risks
Solar Hybrid Mini grids for Rural Economic Development	Mini grid developers	Mini grid developers are at varying levels of capacity regarding E&S standards that they are applying to prepare their projects. International companies, especially those that receive funding from development agencies (e.g., GIZ), are more compliant with the E&S requirements that come with the

Component 1	Key stakeholders	Capacity and Risks
		funding. However, domestic mini-grid developers are relatively unaware of such requirements and will need major effort in building their capacity to comply with the World Bank requirements that RREA will need to implement as part of the program. Differences in how developers approach site selection and interactions with communities must be bridged to ensure that communities can consistently benefit from electricity provision in an inclusive and sustainable manner. These range from full engagement, securing broad community support, reaching agreements with communities on how land would be acquired for the mini grids, and proactively conducting ESIAs as part of project design, to full reliance on the government processes for land expropriation and no E&S studies or exploring alternative site locations to reduce potential E&S risks and impacts.
1.2 Standalone Solar Systems for Homes, Enterprises, and Farm	SHS companies/distributors	The core issue with the SHS component is the potential long-term impacts of the increased number of energy storage units (containing batteries) that need to be recycled. Further, labor and OHS practices of SHS companies must comply with the Liberian laws and World Bank EHS guidelines and good practices.
Management of E&S Impacts	PIU	E&S capacity is weak in Liberia and there is a need to hire experienced E&S Specialists both at the level of the RCU and the PIU to make sure environmental and social issues are well managed by the contractors.

To ensure that private sector is adequately equipped to fulfill its role in E&S assessment and risk management for the project, PIU shall provide guidance and support to the private sector in the form of (i) assistance with developing internal E&S systems and capacity, including training; (ii) required adequate reporting from companies engaged; (iii) risk-based oversight function that will help allocate PIU's resources for review, monitoring, and supervision. The PIU will ensure that the budget is available for these activities.

7. PROPOSED IMPACT MITIGATION MEASURES

The potential adverse environmental risks and impacts identified are not expected to be large-scale, permanent, or irreversible. They are manageable and expected to be temporary, site-specific, and limited in scope.

The mitigation measures proposed in this ESMF seek to address adverse physical and socio-economic impacts. They are intended to reduce or eliminate, to the extent possible, potential adverse E&S impacts of project activities. It should be noted that the mitigation measures referred to are generic, as sub-project activities and sites are yet to be unknown. Site-specific mitigation measures will be assessed as part of the construction works to be carried out by contractors under the respective project. The bidding documents will be reviewed to ensure that the E&S recommendations set forth herein are included in the overall price of the works and are implemented. When sub-projects and their sites have been defined, the ESMF shall be updated to include sub-projects' sites, specific mitigation measures, and their estimated costs. Those measures and costs shall be incorporated in the subproject-specific ESIAs and EMPs.

7.1. Physical Mitigation Measures

Physical mitigation measures relate to issues such as the project site, re-vegetation, and include preventive measures such as bush clearing, erosion, sedimentation, and pollution control, good construction/farming practices, waste management, and the application of Environmental Guidelines for Contractors. Below are three mitigation measures seeking to address key impacts of the project.

Climate Change & Greenhouse Gas Emissions – Liberia submitted its Intended Nationally Determined Contributions to the United Nations Framework Convention on Climate Change (UNFCC) in November 2015. It is pertinent that we realize that women and households are central to any national plan to mitigate carbon emissions and deforestation. Therefore, there is a need for a holistic and well-thought-out plan, which DARES represents, aiming to provide clean, efficient electricity, thereby contributing to eradicating energy poverty, whilst bringing considerable health, developmental, and environmental benefits. The Project will facilitate moving to low-carbon energy sources and moving to non-fossil energy usage, which will enhance the reduction in CO_2 emissions. The DARES, when fully implemented, can mitigate deforestation, one of the major causes of global warming. Moreover, it can help reduce indoor and outdoor air pollution with its attendant health consequences. The Project is mainly of renewable sources with no soot and low NO_2, a principal ozone depletion gas.

Management of Hazardous Waste – The mitigation measures related to the treatment of hazardous waste include the use of off-site treatment methods and only delivering poles ready for fixing, proper disposal of any hazardous materials found on site, use of protective gear during work, appropriate disposal of construction materials and rubble in certified disposal sites, filling in and closing all latrines and septic systems. The mitigation measures for the use of heavy plant equipment, e.g., tippers for material delivery, include minimizing the use of heavy trucks, provision of drainage channels to guide surface liquid run-offs, use of mulching to minimize soil erosion, establishing protocols for vehicle maintenance on site, and interdiction of dumping of any oil.

Recycling of Lithium-Ion Batteries (LIBs) – The recycling of Lithium-Ion Batteries (LIBs) and other batteries reduces greenhouse gas emissions (GHG). Thus, for effective and best environmental practices, it will be essential that end-of-life batteries from the subprojects are recycled within Liberia instead of being shipped elsewhere, as this would

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save on carbon dioxide (CO_2) emissions, which is a major GHG.

Management of Potential Biodiversity Impacts - Due to the small size of mini-grids, this risk is not expected to be high. The use of anti-glare coating on the panel and installation of rotary equipment, or LED lights, are recommended to mitigate potential bird and bat mortality due to the reflection/perception of solar panels as water bodies (collisions).

7.2. Socio-economic Mitigation Measures

Socio-economic measures include education and awareness, hygiene and sanitation training, rules and regulations, institutional support (including skills training), and recruitment of qualified personnel, while socio-cultural measures could include allowing limited and monitored access to restricted areas for cultural reasons where applicable. The mitigation measures for the public health issues: explore options to accommodate crew off-site and avoid camps, and in the absence of that, educate the crew about preserving vegetation, and provide decent temporary sanitation facilities like toilets. Use local and regional labor as much as possible and provide Mpox awareness training to the workers and the community, provide guidelines on local culture, behavior, and social life to the workers, and create walkways and plant grass where necessary. Below are three mitigation measures seeking to address key social impacts of the project.

Collecting Data on Gender and Energy Priorities – Gender analysis should be part of the environmental and social screening and assessment at the sub-project level. The analysis shall focus on identifying gender specific queries during the primary data collection process and available secondary data. The findings shall be used to distill gender priorities, benefits, and opportunities, and design sub-projects that shall benefit, particularly women and children, who often are underserved, to improve their quality of life. Access to reliable electricity extends the effective day through lighting, enabling children to study in the evening and other household members to be more efficient. Likewise, it has enhanced social inclusion by facilitating access to information and communication technologies like smartphones, TVs, and radios, which help individuals and communities feel more connected to society.

The following actions have been identified to track sex-disaggregated data related to the household and business connections:

a) *Application Form*: Application form for connecting to the grid and off-grid energy services should require applicants to identify whether they are a male or female-headed household or businesses/enterprises.
b) *Pre-Electrification*: Ensure that pre-feasibility studies for electrification conducted should gather and present information about the target population by the gender of the head of household and business.

c) *Post-Electrification*: Validate if the final profile of the connections made by the selected contractor reflects the gender of the household/business head prevalent in the community as recorded in the completed feasibility studies. The task will also involve collecting, monitoring, and reporting sex-disaggregated data regarding beneficiaries for the project indicators.

Stakeholder Engagement and Consultations – Weather mitigating physical impacts or socio-economic impacts, stakeholder engagement is key to mitigating adverse E&S impacts. Stakeholder consultations shall be carried out throughout all project cycles, including monitoring and evaluation to inform subproject designs and implementation.

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Below is a table summarizing proposed mitigation measures, options, and guidelines**.** The mitigation measures are presented by project phase.

Table 11: Proposed Impact Mitigation Measures by Project Phase

No.	Potential impact	Mitigation Measures	Responsible	Time Frame
Project Design and Planning Phase				
1.	Discrimination in labor recruitment and poor working conditions	Apply relevant labor laws Implement the LMP and its GM Apply the code of conduct Penalize violators in line with the code of conduct and the law	Developers	Throughout the project lifecycle
		Mobilise the Independent Verification Agency (IVA) to carry out regular supervision Organize public consultations with relevant stakeholders	PIU	Throughout the project lifecycle
	Exclusion of vulnerable individuals/ beneficiaries	Clear selection criteria Consider positive differential treatment of vulnerable groups such as persons with disabilities, youth, women, and marginalized beneficiaries in remote areas. Penalize those excluding others, in line with the code of conduct and the law.	PIU	Pre-construction stage
	Work site selection without adequate attention to E&S risks and impacts	Screen any proposed subproject in accordance with the Environmental and Social Management Framework (ESMF) prepared for the Project	PIU	Pre-site specific/preconstruction stage (3 months)
	Preparatory Phase			
	Occupational health & safety	Workers/surveyors should wear appropriate PPE such as reflective jackets and safety boots. Use warning/caution signs to alert oncoming vehicles of the presence of workers.	Developers	Throughout the project lifecycle

No.	Potential impact	Mitigation Measures	Responsible	Time Frame
2.	Unwillingness/ to adopt E&S measures and disputes over land	Ensure proper acquisition and documentation of land for the project, only willing buying-willing seller or land donation are accepted. Put in place an effective grievance redress mechanism.	PIU/ Developers	Throughout the project life cycle
Construction Phase				
3.	Loss of vegetation and impacts on flora and fauna	Limit vegetation clearance to the width of the trenches. Allow regrowth of vegetation in per-urban areas after construction works. Burning should not be used for vegetation clearance anywhere prior to trenching. Tree planting is a way of replacing the cleared vegetation/trees within the area	Developers	2 months Re-vegetation (2 months)
4.	Impacts on soil and sediment transport	All concrete mixing will be undertaken on an impermeable plastic lining to prevent contamination of the surrounding areas.	Developers	Re-vegetation (2 months)
5.	Generation and disposal of waste	The contractor should develop and implement a waste management plan during the construction phase. (See sample WMP included in the ESMP Annexes 2 and 6) Excavated soil should be reused for backfilling. Concrete debris should be collected and disposed of at an approved dumpsite. Scrap metals will be collected for recycling in blue colored waste receptacles for non-hazardous waste Hazardous waste shall be stored in a manner that prevents the commingling or contact between incompatible waste, and stored in properly labelled closed containers for evacuation by a third-party waste contractor Plastic waste such as used polythene bags and drinking water sachets should be temporarily collected in bins on site and disposed of at approved dumpsites.	Developers	Throughout the project life cycle. 3 months on every cycle

No.	Potential impact	Mitigation Measures	Responsible	Time Frame
		For waste from solar panels, in case there is no recycling facility in Liberia, make sure that damaged or broken solar are collected and treated in suitable facilities outside of the country		
6.	Occupational Health & Safety (OHS) issues	The contractor should adopt a health & safety policy, which should be implemented during the construction work. All active construction areas should be marked with high-visibility tapes to reduce the risk of accidents involving pedestrians and vehicles Prepare an emergency response plan for work. Dedicated experienced personnel should be hired to managing and overseeing the OHS aspects of the project. Training/induction should be provided for all workers. Proper supervision and monitoring should be ensured at site. Provide first aid kits on site and train supervisors on administering first aid. Appropriate PPE should be provided for workers and its use enforced.	Developers	Throughout the project life cycle
7.	Public safety and traffic issues due to labor influx, GBV/SEA due to labor influx	Sensitize the public, especially traders within the RoW, of the upcoming works prior to construction activities. Organize work into sections and complete each section before the next section to ensure trenches are covered within the shortest possible time. Develop and implement a GBV action plan to mitigate the SEA/SH risks Cordon off all trenches and excavations with caution tapes and use warning signs at vantage points to indicate ongoing construction works. Prevent the entry of unauthorized persons to the construction site. Engage the staff of the Traffic Agency to direct traffic to reduce traffic congestion.	Developers	Throughout project lifecycle

No.	Potential impact	Mitigation Measures	Responsible	Time Frame
		Where necessary in extreme cases, provide alternative routes during road diversions with the assistance of the Liberia Police Force or the Road Safety Corps. Organize awareness creation and sensitization for workers and the public on the prevention of Mpox and other sexually transmitted diseases. Engage experienced drivers and machine operators and provide training, especially for less experienced drivers/operators. Ensure that all COVID-19 precautionary measures are duly observed by both workers and the public accessing the facility.		
8.	Sanitation and hygiene	Provide bins for temporary collection of litter (including polythene bags, drinking water sachets, etc.) for disposal at approved dumpsites. Provide toilet facilities for use by workers at every site. Separate toilets for women. Ensure availability of water to wash hand. Dissemination of information on health and hygiene practices.	Developers	
9.	Persons and properties affected by land acquisition or restrictions on land use	Engage affected persons prior to construction works to discuss and agree on affected property and reinstatement works after land donation or agreed price following willing seller-willing buyer. All affected properties should be reinstated immediately prior to the construction works to their original or improved state, and in the process, obtain photographs of all affected and reinstated properties (before and after status) for evidence. In cases where affected crops are affected, appropriate compensation should be paid. In cases of Voluntary land Donations, compile a report of the process as well as associated records and documents be prepared for Mini grids prior to commencement of civil works	PIU, Developers	3 months

No.	Potential impact	Mitigation Measures	Responsible	Time Frame
10.	Impacts from visual intrusion	Reinstate all trenched areas to their original or improved state. Proper housekeeping should be ensured at the construction sites. Non-reused waste should be collected and properly disposed of at an approved dumpsite.	Developers	5 months post-construction
11.	Dust and noise nuisance	Use dust abatement techniques such as wetting ground surfaces and untarred roads, covering soil delivery trucks, and limiting operations during windy periods. Ensure delivery trucks and other vehicles reduce speed on untarred roads to reduce air dust. Switched off vehicles/trucks' engines and earth-moving equipment when not in use. Install portable barriers to shield compactors, thereby reducing noise levels Use roadworthy vehicles and ensure regular maintenance of vehicles, equipment, and machinery to reduce noise. Keep work within working hours of the day.	Developers	2 months
12.	Disruption of utility service	Liaise with utility service providers and telecommunication companies with service lines within the RoW to prevent the destruction of their lines.	Developers	3 weeks
13.	Fire risks	Educate workers and the public on the effects of fire on the project and life safety for all workers. Prevent entry of unauthorized persons to construction sites, use caution tapes. Provide fire extinguishers at construction sites. Provide fire emergency contact numbers at construction sites. The contractor should prepare and implement a fire preparedness/emergency plan.	Developers	2 weeks
14.	Conflicts/public agitation	Continuously sensitize the public on the construction works and the availability of the GM throughout the construction period.	Developers	Term of the project

No.	Potential impact	Mitigation Measures	Responsible	Time Frame
		Reinstate any affected property immediately to its original or improved state. Provide alternative routes where necessary to ease the impact on road users. Engage the staff of the Road Safety Corps to direct traffic to avoid traffic congestion.		
15.	Disruption of livelihoods	Consult affected persons on suitable times to carry out construction works, which should be factored into the scheduling of construction works. Sensitize affected traders on the schedule of construction works. Reinstate affected properties immediately after work completion at the section. who may have to temporarily move their wares and stores. And provide livelihood restoration for loss of income in accordance with the LRP as needed. Consider undertaking certain construction activities on weekends (Sundays) when commercial activities are less intense	PCU, Developers	5 months
16.	Chance finds/ cultural heritage and archaeological interest, as well as on sociocultural norms	Identify cultural heritage resources including cemeteries/burial sites and existing ecologically sensitive areas and avoid them as much as practicable. Any antiquity found during the construction phase will be made known as required. Apply the Chance Finds procedures Where the observance of traditional and cultural norms about restricted noise-making during festivals will conflict with the timelines of the sub-projects, the PIU will engage the traditional authorities for exemptions if possible.	Developers	2 months
	Water Quality	The contractor should develop and apply measures for waste management to reduce risks to water bodies in the surrounding. Maintain Proper monitoring and supervision during construction activities.	Developers	# months
Operational Phase				

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No.	Potential impact	Mitigation Measures	Responsible	Time Frame
17.	Occupational health & safety	The operator should develop and implement an Environment, Health and Safety (EHS) Plan as a stand-alone document or part of the ESMP, both for construction and operation. The operator should adopt a health & safety policy, including an emergency response plan, which should be implemented. Health & safety induction should be carried out for all new employees, and periodic training should be conducted for all staff. Cordon off maintenance sites with caution tapes and use warning signs to alert the public of ongoing maintenance works. Proper supervision and monitoring should be ensured during maintenance activities. Provide first aid kits on-site and train supervisors on administering first aid. Provide health insurance for all staff. Appropriate PPE should be provided for workers and its use enforced.	Developers	Throughout the project life cycle
Decommissioning Phase				
18	Generation and disposal of waste	E-waste management plan is to be prepared prior to decommissioning and part of the POM that accounts for safe end-of-life disposal of equipment from solar installations Waste segregation onsite, and non-reusable/recyclable wastes are disposed of through an accredited third-party waste contractor		

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7.3. Challenges to the Mitigation Measures

E&S risks at the level of individual subprojects are limited in number and magnitude. However, the complexity of project design and capacity considerations contribute to the elevated E&S risk profile. The three project components have substantial differences in their design, technologies used, and scope. Components 1, which involves the development of solar mini grids and power systems, is comparatively riskier than Component 2, which involves SHS sales and installation.

The success of E&S risk management during project implementation will depend on the PIU's ability to adopt an approach that fully integrates it into RREA's overall project management processes. Through this approach, RREA is expected to be able to effectively manage risks associated with an emerging flow of hundreds of small mini-grids, as well as integrate relevant considerations into SHS companies' operations and effectively manage investors' and contractors' E&S performance for university power systems. Key E&S challenges and approach to their mitigation are presented in Table 12.

Table 12 : Key E&S Challenges and Mitigation

S/N	Challenges	Approach to Mitigation
1	Decentralized project design with many small subprojects prepared by private sector implementing entities	Mini grid developers are expected to develop and maintain an effective ESIA for self-assessment, managing and monitoring risks and impacts of the construction and operation of the beneficiary solar off-grid companies. The preparation of an ESIA and ESMP requirements based on E&S risk rating of proposed sub-project activities, detailed and step-by-step E&S responsibilities for key players for each project component
2	Land acquisition, resettlement, livelihood restoration	Willing buyer and willing seller be applied (See Annex 15.10). Engage affected persons prior to construction works to discuss and agree on affected property and reinstatement works All affected properties should be reinstated immediately prior to the construction works to their original or improved state, and in the process, obtain photographs of all affected and reinstated properties (before and after status) for evidence. In cases where affected crops are affected, appropriate compensation should be paid. In cases of Voluntary land Donations, compile a report of the process as well as associated records and documents be prepared for Mini grids prior to commencement of civil works
3	Lack of awareness on E&S risks and impacts (communities, SHS customers, universities)	Sensitization and dialogue via various methods of citizen and stakeholder engagement. Preparation of the Stakeholder Engagement Plan and GM will assist in identifying, informing, educating, empowering, and collaborating with the various stakeholders. GM will help to get feedback from various stakeholders, such as public universities and teaching hospitals, and PAPs, before, during, and after implementation.

S/N	Challenges	Approach to Mitigation
4	Lack of capacity among private sector implementing entities	Training for mini grid developers, SHS companies, and other responsible government agencies at all levels of Government.
5	Lack of recycling facilities	Development of a waste management plan during construction phases, construction waste, handling and disposal of hazardous chemicals and waste, and the disposal of end-of-life batteries containing hazardous materials during the operation phase (See Annex 15.6).

8.ESMF IMPLEMENTATION AND MONITORING PLAN

8.1. Objective of Monitoring

This section sets out requirements for monitoring the environmental and social impacts of the sub-project activities. Monitoring and evaluation are tools to ensure proper and timely implementation of environmental and social mitigation measures identified in the planning stage, based on the ESMF. The objective of monitoring is to:

- Ensure proper and timely implementation of environmental and social interventions proposed in this ESMF and other relevant documents to be prepared based upon the ESMF, such as the ESIA/ESMP.
- Alert project authorities by providing timely information about the success or otherwise of the environmental and social management process outlined in this ESMF in such a manner that appropriate decisions can be made to improve upon the process or avert any adverse impact.
- Make a final evaluation to determine whether the mitigation measures incorporated in the technical designs and the ESMP have been successful in such a way that the pre-project environmental and social condition has been restored, improved upon, or is worse than before, and to determine what further mitigation measures may be required.

Monitoring of environmental and social indicators will be mainstreamed into the overall monitoring and evaluation system for the project.

8.2. Types of Monitoring Required

8.2.1. Compliance Monitoring

The following activities should be conducted to ensure compliance with the ESCP and applied ESS and instruments, including the ESMF and subsequent ESIAs and ESMPs:

1. As part of the planning stage, ensure that relevant permits are obtained for specific subprojects.
2. Final designs should be completed and submitted to PIU
3. Confirm that all the design changes and design mitigation measures recommended by the ESIA/ESMP study have been incorporated into the final detailed design documents
4. During contract negotiations, confirm that the designs and working methods proposed by the contractors have taken into account the environmental and social considerations recommended in the ESIA/ESMPs

5. Following completion of the detailed designs, confirm that all mitigation measures recommended by the ESMF and confirmed by the ESIA study have been incorporated into the appropriate contract documents prior to signing.
6. During construction, confirm on a regular basis that all the agreed working conditions and procedures, regarding various environmental and social considerations, are followed satisfactorily.
7. During construction and upon completion of construction, ensure that all requirements regarding clean up and reinstatement have been satisfactorily met; and
8. During the operation of the project, ensure that all the mitigation measures recommended in the ESIA/ESMPs form part of the functions and mandate of the institution responsible for the management and operation of the project facilities.

8.2.2. Monitoring of Environmental and Social Impacts

The actual environmental and social risks and impacts caused by project implementation should be closely monitored during the construction and operation of the project to examine the effectiveness of the mitigation measures. The goals of monitoring are to measure the success rate of the project, determine whether interventions have resulted in dealing with negative impacts, and whether further interventions are needed, or monitoring is to be extended in some areas.

Table 13 : Monitoring and Evaluation Framework

S/N	PHASE	INSTITUTION RESPONSIBLE	PERFORMANCE INDICATORS	PERIOD TO BE CONDUCTED
1	Preparation/ Pre-Construction Phase	Contractor	Screening checklist, ESMF, ESIA, etc.	5 months
2	Construction Phase	PIU	E&S report and activities and instruments like LMP, Code of conduct and the SEP	Monthly throughout the construction phase
3	Operation And Maintenance Phase	PIU, EPA	ESMP and E&S instruments like LMP, Code of conduct and the SEP	Monthly throughout the project life cycle
4	Decommissioning Phase	PIU, EPA	Operational activities/E&S report like LMP, Code of conduct and the SEP	Monthly monitoring three months prior to decommissioning.

8.3. Environmental and Social Auditing

Environmental and social audits will be used as a management tool to enhance all the E&S management tools as captured in this ESMF. RREA, through its PIU, shall commit to a systematic, documented, periodic, and objective evaluation. RREA will facilitate periodic meetings with mini grid developers, SHS companies, contractors, and universities/communities with the aim of having a discussion surrounding good environmental and social practices and assessing compliance with Liberia environmental laws and WB ESSs, which includes meeting regulatory requirements and applicable standards.

There will be a cycle of audits built into specific areas of the project, such as land acquisition or waste management. The frequency of audits will be risk-based and will vary with the stage of the project, and will depend on the results of previous audits. In addition, periodic auditing of the different plants and operations shall be carried out as per governing Liberian regulations.

Further, audit results shall be used to improve the environmental and social screening procedures. Environmental and social auditing will be used towards the preparation of environmental and social screening, as well as in many circumstances in which the project activities carry a risk of harmful effects on the natural environment. All auditing strategies and programs for the projects shall have reasons and justifications, which will be designed to establish the current status of the environment or to establish trends in environmental parameters where the projects shall be implemented. In all cases, the results of auditing will be reviewed, analyzed, and published by the PIU for the purpose of improving project implementation.

An independent consultant will be hired to evaluate the project implementation arrangements for PIU, in line with the ToR template (Annex 15.8). The audit shall be conducted by qualified staff, and the results shall be reported to RREA to be addressed.

9. ENVIRONMENTAL AND SOCIAL RISK MANAGEMENT PROCESS

The environmental and social risk management approach is tailored to its national scope and organizational structure. The core principle of the approach is to expand and strengthen E&S systems and the capacity of the private sector. This will be achieved through the adoption of formal and relevant ESIAs with appropriate E&S assessment and risk management for individual mini-grids in Component 1 and SHS installation in Component 2. The process begins with stakeholder consultations and engagement at the national level, including potential DRE companies, and capacity building for companies interested in providing renewable energy services. The PIU will lead that effort with the support of the RCU.

9.1. Eligibility and E&S Requirements

The eligibility requirements of the DRE companies will incorporate E&S criteria, some of which will be met prior to contract signature, and others will be prepared and implemented during contract execution, for instance, Operational Health and Safety Conditions and construction-specific ESMPs. The DRE companies will carry out environmental and social screenings as part of their prospecting activities. The screenings and subsequent ESIAs and EMPs will be subject to reviews and approval by the PIU before contract negotiations begin. The PIU is responsible for verifying that adequate stakeholder consultations were conducted, including the management of grievances, and that national laws and market-appraised and validated willing-buyer, willing-seller agreements have been signed if relevant.

It is a mandatory requirement to qualify for the minimum subsidy that mini-grid developers establish and maintain an internal Environmental and Social Management System (ESMS) appropriate to the nature of their business and commensurate with the level of its environmental and social risks and impacts. The ESMS will incorporate the following elements: (i) Environmental and Social policy; (ii) process for identification of risks and impacts; (iii) risk management plans/ programs; (iv) organizational capacity and competency; (v) emergency preparedness and response; (vi) stakeholder engagement (including grievance mechanism); and (vii) monitoring and review.

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The Regional Fund Manager (RFM) will ensure that the environmental and social requirements are met and incorporated, as relevant, in the draft agreement and will recommend that the PIU enter into the grant agreement with the company. Such an agreement will include an annex specifying the E&S requirements that the company or consortium must fulfill. Before any grant disbursement, the IVA will verify that all environmental and social eligibility conditions outlined in the grant agreement and the POM are satisfied. The PIU will be responsible for regular supervision of activities at the national level. The IVA will also collect and monitor reports on the implementation of environmental and social risk management measures.

9.2. Competitive Tendering

The PIU/RREA and/or the RCU shall play a leading role during this stage. Before the tendering process starts, the PIU/RREA shall:

- Prepare the Lot Package, which contains all relevant information of each mini-grid community lot, including E&S information obtained during site surveys;
- Conduct a public advertising campaign for the Call for Expressions of Interest. The information made public during the campaigns should include: (i) E&S eligibility criteria as part of the overall criteria for developer selection, including a clean track record, such as no environmental fines in the past 3 years, etc.; and (2) site selection criteria, including ***E&S Exclusion Criteria for Mini Grid and Power Generation Sites*** that developers must apply; and
- Host bidders' workshop, which integrates E&S requirements.

9.3. Exclusion criteria for mini grid and power generation sites

The exclusion criteria for mini grid sites (component 1) and the interconnected mini grid sites will apply as follows:

1. Sites involving involuntary resettlement or where willing-buyer, willing-seller agreements have not been reached
2. Sites located on land associated with illegal forced evictions of previous owners or occupants
3. Sites that do not comply with relevant environmental and social national or state regulations of the participating countries of the first phase of the Regional DARES
4. Sites located in nationally recognized protected areas and sensitive ecosystems (e.g., national parks, conservation areas, forests, wetlands)
5. Sites located in nationally and internationally recognized areas and sensitive ecosystems (e.g., national parks, conservation areas, forests, wetlands)
6. Sites located in critical natural habitats
7. Sites in flood-prone zones
8. Sites in locations and/or developed in a manner that involves significant adverse impacts on physical cultural property.

9.4. Construction and Operation

As part of preparation for mini-grid construction, the winning developer(s) will:

- Conduct E&S screening and classify sites into E&S risk category (I, II);

- Inform RREA of outcomes of screening (consolidated report);
- In case any sites fall under the E&S Exclusion Criteria for Mini Grid and Power Generation Sites, inform RREA immediately upon this determination so that these sites can be removed from the lot;
- Prepare ESIA and ESMP (for category I) or ESMP (for category II),
- Obtain any E&S permits required by law;
- Conduct stakeholder engagement and establish a grievance redress mechanism; and
- Submit relevant documents to RREA (specifically, ESIAs and LRPs for category I) and keep documents for category II on file for verification by RREA as part of oversight and monitoring.

For E&S risk categorization, substantial will be assigned to sites with higher E&S risks as compared to sites with low or moderate risks. The decision will be made by developers based on the outcomes of E&S screening done by them, verified and confirmed by the PIU/RREA. Developers will classify sites as part of their environmental screening. Guidance on classification will be provided by the PIU/RREA as part of the ESMF. The PIU/RREA has the ultimate authority to decide whether a construction site should be categorized as low, moderate, or substantial. For example, sites requiring land acquisition could be rated as both low and moderate risk depending on the scope of the land acquisition. Substantial risk sites will require ESIAs and subsequent ESMPs, while sites with low and moderate risks will require ESMPs. In both cases, the developer will be required to conduct stakeholder consultations and engagement and establish a grievance redress mechanism. ESMPs will be kept by developers on file for verification by the PIU/RREA and/or the IVA during sample checks/ audits. ESIAs shall be sent to RREA for review and verification before construction can start, as those instruments present higher risks.

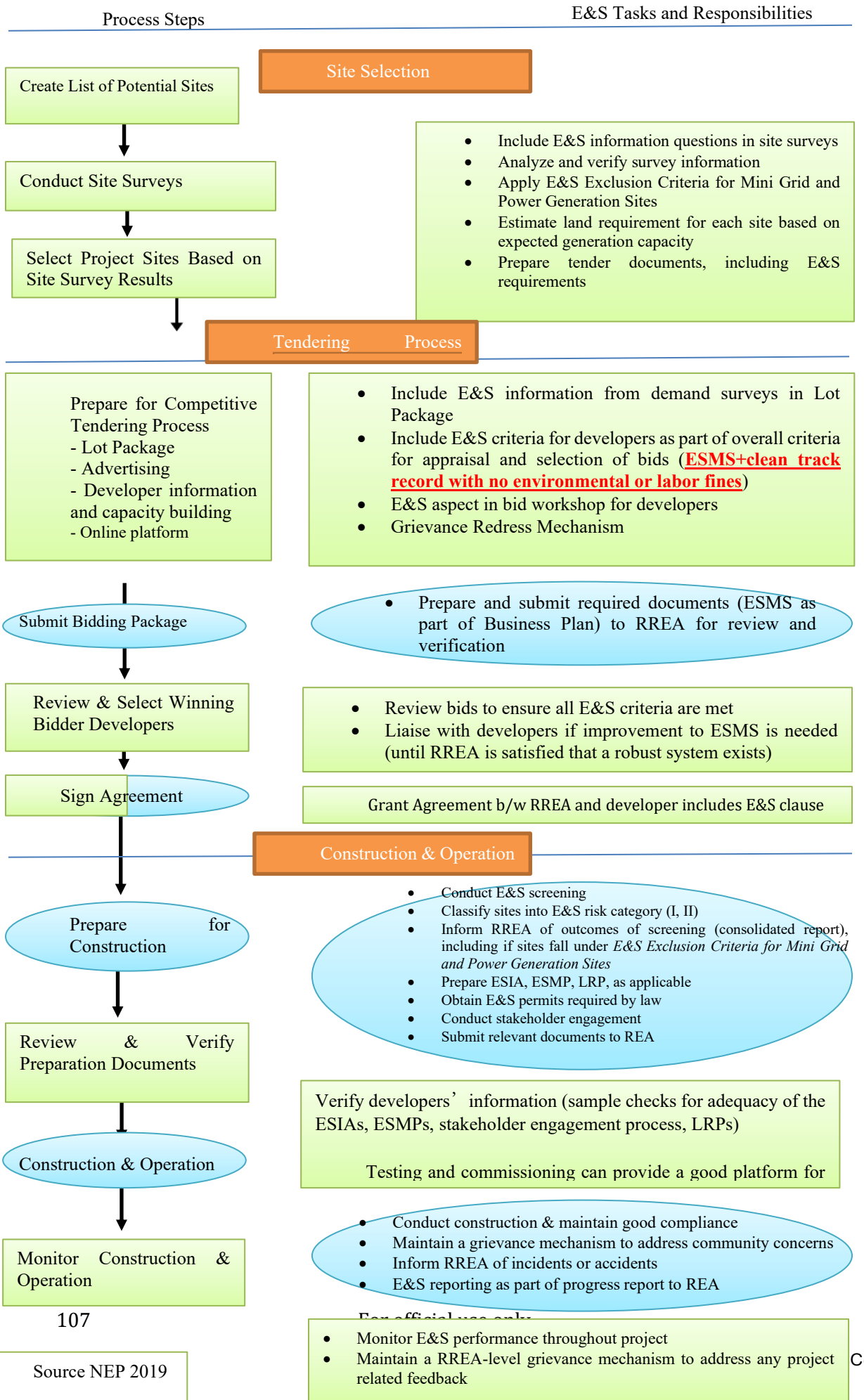
After the developer has submitted all required documents and RREA has completed verification, the developer can start mini-grid construction. During mini-grid construction and throughout its operating life, the developer needs to:

- Maintain compliance with E&S requirements;
- Maintain a grievance redress mechanism to address community concerns;
- Inform the PIU immediately of any incidents or accidents that can interfere with maintaining E&S compliance;
- Submit E&S reporting as part of regular progress reports to PIU, according to the template provided as part of the ESMS template in Annex 15.20.

Meanwhile, the PIU will:

- Monitor E&S performance through the project cycle on a sample basis; and
- Maintain a RREA-level grievance redress mechanism to address any project-related feedback in a timely and meaningful manner.

Figure 2 : E&S Workflow for Minimum Subsidy Tender for Mini-grid Development (Green: RREA; Blue: Mini-grid Developer)



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9.4.1. Performance-Based Grants

Under this subcomponent, mini grid developers submit a clean E&S track record as part of their application to be admitted into the program. Once accepted into the program, they screen and conduct E&S due diligence for one or more mini grids before submitting their proposals for funding, along with site-specific E&S documents. RREA reviews and evaluates each proposal and approves, returns for adjustment, or rejects the proposal. For approved proposals, a Grant Agreement will be signed between RREA and the mini-grid developer. The site-specific E&S documents must be verified by RREA before construction can commence (using sampling as part of a risk-based approach). During construction and operation, the developer must maintain E&S compliance while RREA continues to monitor its E&S performance.

In sum, the Performance-Based Grants program has 3 major stages: (1) Proposal–Acceptance into the Program; (2) Design Verification for Sites; and (3) Construction & Operation. Figure 5.1.1 shows the workflow of this component and the general E&S responsibilities of each key party. For further details, please refer to the Project Implementation Manual.

Stage 1: Proposal–Acceptance into the Program

At the beginning of the implementation period, RREA will publish a program announcement, which will include: i) E&S eligibility criteria as part of the overall criteria for developer selection, including a clean track record, such as no environmental or labor violations or fines in the past 3 years; and ii) site selection criteria, including ***E&S Exclusion Criteria for Mini Grid and Power Generation Sites***.

Mini-grid developers who meet all of RREA's eligibility criteria and thus qualify for entry into the performance-based grant program must prepare and submit an application package that includes the following:

- Documents establishing eligibility, including ESMS as part of a Business Plan for RREA to review and verify (ESMS template is provided in Annex 15.20); and
- Proven clean track record on E& S compliance (no environmental or labor violations or fines in past 3 years).

RREA would approve the developer for admission into the program after:

- Reviewing the proposal to ensure all E&S criteria are met; and
- Liaising with developers if improvements to ESMS are needed, until the developer has a robust system that RREA is satisfied with.

Stage 2: Design Verification for Sites

Once the developer has been admitted into the program, the developer shall start preparing site-specific documents, including E&S documentation, as follows:

- Conduct E&S screening and classify sites into E&S risk category (I, II);
- Inform RREA of outcomes of screening (consolidated report);
- In case any sites fall under the E&S Exclusion Criteria for Mini Grid and Power Generation Sites, inform RREA immediately;

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- Prepare ESIA and ESMP (for category I) or ESMP (for category II), ,[24] as applicable; in case where ESIAs and/or ESMPs have been prepared by mini grid developers in advance of their application for performance-based grants, such instruments should be updated – if necessary - to ensure they meet World Bank safeguard policies pursuant to guidance provided in the ESMS template (Annex 15.20);
- Obtain any E&S permits required by law;
- Conduct stakeholder engagement and establish a grievance redress mechanism; and
- Submit relevant documents to RREA (specifically, ESIAs for category I) and keep documents for category II on file for verification by RREA as part of oversight and monitoring.
- .

RREA will review and verify the site preparation documents through desk review of ESIA and ESMP, with sample site visits when feasible during design verification, with the aim of minimizing negative E&S impacts.

Once RREA is satisfied with the site-specific technical application, including E&S documents, it will sign a Grant Agreement with the developer, which shall include E&S clauses.

Stage 3: Construction and Operation

Once verification is completed, the developer can start mini-grid construction. During the construction and operation of the mini-grid, the developer needs to:

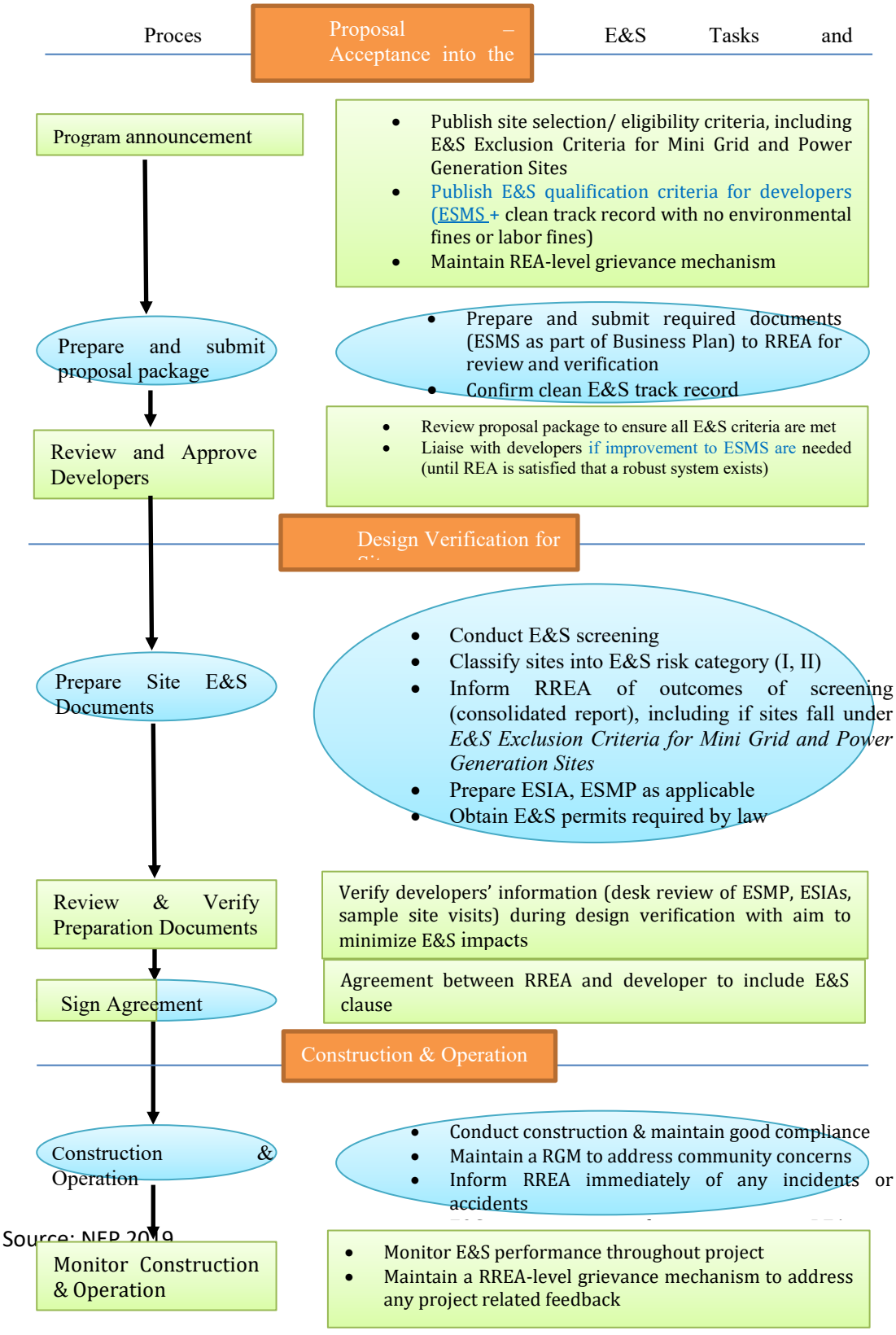
- Maintain compliance with E&S requirements;
- Maintain a grievance mechanism to address community concerns;
- Inform RREA immediately of any incidents or accidents that can interfere with maintaining E&S compliance;
- Submit E&S reporting as part of regular progress reports to RREA, according to the template provided as part of the ESMS template in Annex 15.20.

Meanwhile, the PIU will:

- Monitor E&S performance through project cycle; and
- Maintain a PIU-level grievance redress mechanism to address any project-related feedback in a timely and meaningful manner.

[24] Any site requiring involuntary resettlement or livelihood restoration must be classified as category I.

Figure 3: E&S Workflow for Performance-Based Grants for Mini-grid Development (Green: RREA; Blue: Mini grid Developer)



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9.5. E&S Management Process for Component 1:

9.5.1. Standalone Solar Systems for Homes, Enterprises, and Farms

The goal of this component is to help underserved Liberian households and micro, small, and medium enterprises (MSMEs) access better energy services at a lower cost than their current service, via stand-alone solar home systems provided by the private sector. This component will support the deployment of stand-alone solar systems ranging in different sizes and levels of service. SHS standards are described in the SHS Operations Manual in detail.

Based on the qualification criteria established by RREA, which include E&S requirements, SHS distributors will need to be qualified before they can apply for grants under this component. Once an SHS distributor becomes a qualified distributor, it can then submit a grant application, which, once approved, will cover a certain amount of SHS installation. Once the grant agreement has been signed, the distributor will start the installation and receive the grant based on the number of units of SHS installed, per the grant agreement. The distributor also needs to maintain good compliance and good customer service after installation. RREA is responsible for verifying distributors' qualification, installation performance, overall compliance, and maintaining a GM for project-related feedback.

In sum, the process has three main stages: (1) Distributor Qualification Process; (2) SHS Installation Stage; and (3) Post Installation Stage. Figure 4.3 shows the workflow of this component and the general E&S responsibilities of each key party.

Stage 1: Qualification Process

First, RREA will establish and publish the qualification criteria for SHS distributors to apply to become "Qualified Distributor" under this project component. Specific E&S requirements are:

- Have a good E&S track record, meaning no E&S-related fines, violation record, litigation, or pending litigations in the past three years;
- Have an ESMS that meets RREA's requirements and ESS9 requirements – ESMS for this component is defined as several key policies and procedures prepared and implemented by an SHS company
- Have the institutional capacity to implement such ESMS; and
- Be willing to participate in E&S capacity building activities hosted by RREA should RREA deem necessary.
- Interested distributors can submit their completed Qualification Application Form and supply all required documentation for the application, including E&S documents, as part of the application. RREA will review and verify the application before making the decision.
- Verify the adequacy of information submitted;
- Use questionnaire for lithium-ion battery management to assess practices of SHS companies (Annexes 15.6 and 15.7);
- Maintain RREA-level GM to address project-related issues (this is a common requirement for all three components).
- After verification, RREA and the SHS company would sign the Grant Agreement, which should include clear E&S requirements.
- SHS company's responsibility to maintain required policies in good standing; and
- SHS company will notify RREA of any E&S issues are affect its compliance.

Stage 2: SHS Company Operations

With the signed agreement, companies will start installing SHS per its terms and submit claims for grants, as long as its operation remains in good compliance with laws and all other E&S requirements. RREA will pay for qualified claims and maintain a RREA-level GM for any project-related issues.

Stage 3: Post-Installation

After the SHS has been installed and is in use, the SHS company is still responsible for maintaining good compliance with overall requirements, providing good customer service, and participating in the battery disposal/recycling program (as developed by RREA).

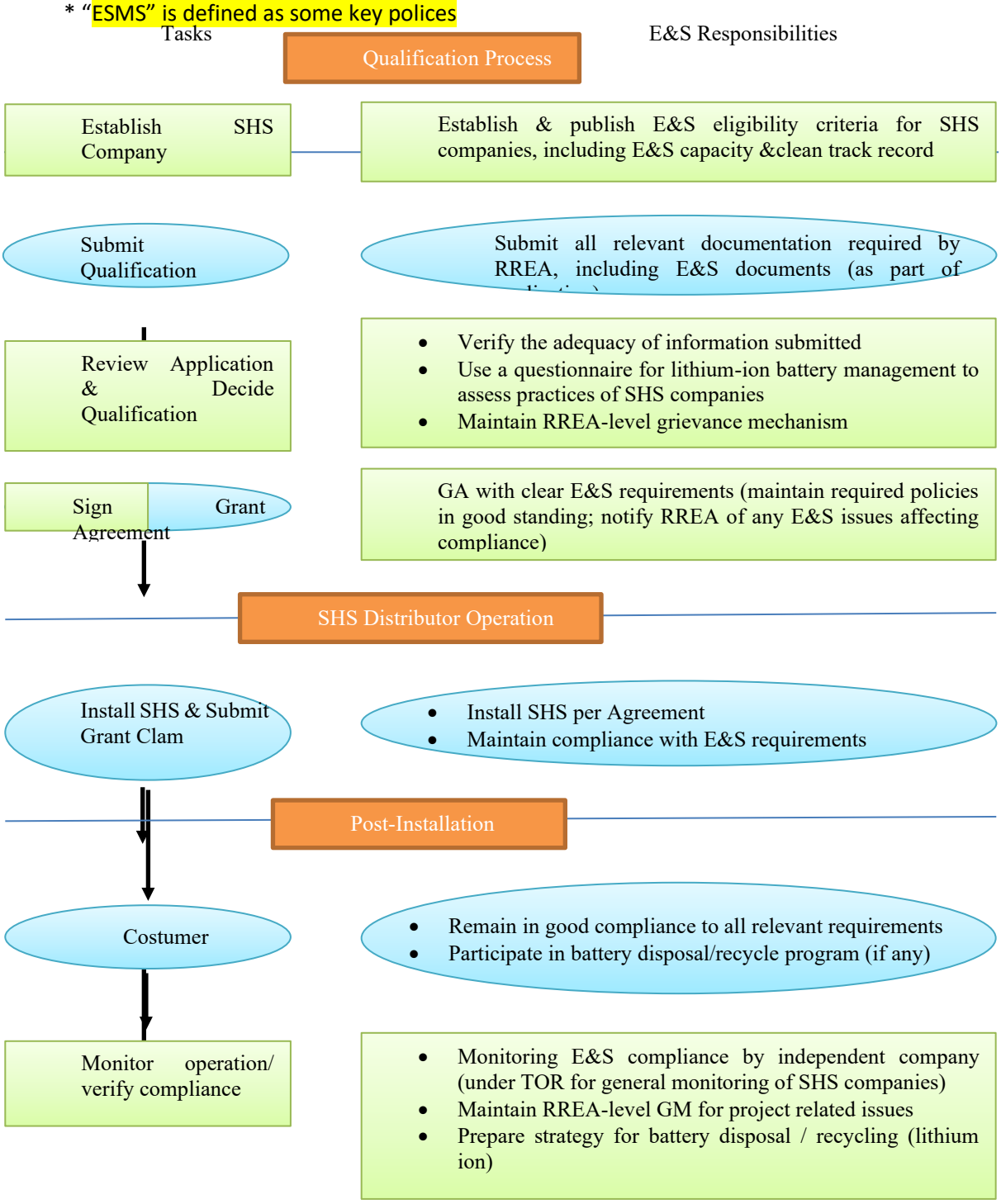
RREA's duty to monitor operation and verify compliance includes:

- Monitoring E&S compliance by an independent company (under TOR for general monitoring of SHS companies);
- Maintain RREA-level GM for project-related issues; and

Prepare a strategy for battery disposal/recycling (lithium-ion).

Figure 4 : E&S Workflow for Subcomponent 2: Standalone Solar Systems for Homes, Enterprises, and Farms (Green: RREA; Blue: SHS Distributor)

* "ESMS" is defined as some key polices



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10. INSTITUTIONAL ARRANGEMENTS AND FRAMEWORK

The key institutions with key responsibilities for environmental and social management of the DARES project are the Ministry of Mines and Energy (MME) and Rural and Renewable Energy Agency (RREA)/PIU, in collaboration with the Liberia Electricity Corporation (LEC). The LEC and the RREA have four experienced Environmental and Social Safeguard specialists who have already worked on other World Bank-funded projects, as well as similar projects funded by other donors.

10.1. Roles and Responsibilities of Implementing Entities

The PIU will have the primary responsibility for monitoring and reporting on the environmental and social performance of project activities, in conformity with the environmental and social commitment plan of the project (ESCP). Other relevant government agencies, particularly the Liberia Environmental Protection Agency (EPA), will do their due diligence. The reporting requirements will be included in the project Operation Manual. The project investors and/or contractors will implement this ESMF, including its subsequent ESMP and other environmental and social instruments related to project operations, as specified in the ESCP and in the contracts of the contractors. The following describes the detailed roles and responsibilities of the key institutions involved in the implementation of the ESMF and the POM.

Table 14: Main Implementing Agency

Institutions	Roles
PIU	Will provide overall coordination of the Project and lead in the implementation of the different components Overall responsibility for E&S due diligence and compliance monitoring. Will be responsible for the overall coordination of the project implementation and oversight. For the E&S risk management across project components, the PIU for the project will be responsible for: Overall oversight of the E&S risk assessment, management, and monitoring processes in line with this ESMF, for each component of the Project Implementing a reporting system from private sector entities to RREA on the implementation of E&S requirements Engaging an independent E&S auditor to ensure that private sector entities are implementing E&S requirements set out in the ESMF consistently. Responsible for citizen engagement, maintaining adequate stakeholder engagement and grievance redress mechanisms, and ensuring that private sector entities maintain the same at their level. Will establish a communication line between the RREA zonal offices and ensure project success in this aspect. Will also facilitate liaise with Ministries, Departments, and Agencies (MDAS), Community-Based Organizations (CBOS), NGOS, and project-affected communities; Organizing and implementing capacity building programs for mini grid developers and other key stakeholders

Institutions	Roles
	Defining, jointly with the respective states and local governments, the project priorities based on technical and policy development priorities; Resolving in consultation with the States/local governments, challenges requiring high-level intervention facing the project Engaging in preparing solutions for E&S strategic risks identified (battery recycling, land, and harmonization of standards); Monitoring the implementation of the project in consultation
EPA	Will provide environmental clearance as required by laws and regulations when the mini grid developer submits sufficient information and evidence of compliance
EPA	Will play the role of lead environmental regulator, overseeing compliance requirements, granting consent, and also monitoring or providing supervisory oversight for the PIU projects. Also, shall receive comments from stakeholders, public hearing of project proposals, and convening a technical decision-making panel, as well as provide approvals and clearances for ESIAs/EMPs and other E&S instruments.
Affected communities	Will participate in monitoring, subject to agreement with the mini grid developer and as outlined in the SEP
IVA	Hired by the PIU, the IVA will conduct an annual review of developers' E&S performance.
RCU	Consolidates GRM reports transmitted by national PIU and ensures consistency of GRM performance between countries.
World Bank Group	Will lay out, through the ESCP benchmarks, all environmental and social safeguard issues concerned with the development and implementation of DARES.

Table 15: Roles and Responsibilities by Project Component

Component 1.1: Mini grid

Institutions	**Roles**
PIU	Plays an essential role in setting the overall E&S standards and ensuring the requirements are met throughout the process, including *E&S requirement setting* Set applicable E&S requirements and include them in the grand application process for mini grid developers. Such as the exclusion list and requirements for ESIA/ESMP, LRP, consultation, clean E&S track records, etc. Require mini grid developers to prepare ESMPs. A sample mini-grid developer ESMP is available in Annex 15.20, and capacity building will be provided to help developers design and implement a suitable ESMP. Integrate E&S requirements in legal agreements with mini-grid developments.

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Institutions	Roles
	2. E&S due diligence: PIU will conduct sample site visits for low and moderate-risk mini-grids to validate that the risk categorization and risk management design/implementation are sufficient. 3. E&S monitoring: PIU will conduct monitoring activities during mini grid construction and operation, such as sampling, risk-based checks, and site visits. 4. E&S reporting: PIU will: Review E&S reports submitted by the developers and conduct follow-ups based on desk-top reviews and site visits. Maintain records of developer screening, ESIAs, ESMPs, and/ or LRPs, and other relevant documents 5. E&S auditing: PIU will hire an independent E&S auditor
EPA	Will provide environmental clearance as required by laws and regulations when the mini grid developer submits sufficient information and evidence of compliance
Mini grid Developers	E&S requirement setting: mini grid developers will incorporate application E&S requirements in their institutional ESMS, which include national and regional laws/policies and any requirement set by the PIU/RREA and other investors (if any). E&S screening: Conduct the actual E&S screening based on all relevant requirements, employing or hiring qualified E&S specialists, and provide sufficient resources for such activities. Determine key E&S risk and impacts of individual mini grids and assign E&S category (I or II), corresponding to high or medium/low risk. Submit a list of category I sites to RREA before beginning construction. E&S due diligence: mini grid developers will prepare and integrate into project design that: (1) for Category I projects, ESIA or LRP as needed; (2) for Category II projects, ESMP; and (3) for all projects: The Stakeholder Engagement Plan (SEP) and Grievance Mechanism. E&S monitoring: mini grid developers will conduct self-monitoring activities in line with their ESMS and maintain all monitoring records properly. E&S reporting: Prepare E&S reports to the PIU/RREA based on PIU/RREA's reporting requirements; Report any incident or accidents within several days of occurrence, including any E&S fines, litigation, or other administrative/legal issues. E&S audit: Mini grid developers will provide all relevant reports and documents to the independent E&S auditors in a timely manner upon request.
EPA	Same function above

Institutions	Roles
Affected Communities	Will participate in monitoring, based on the arrangement agreed with the mini grid developer and outlined in the SEP
Component 1.2: SHS	
PIU	Sets the E&S standards and ensures the requirements are met throughout the process. Its responsibilities include. 1. SHS company grant application stage Prepare elements required for an ESMS in line with RREA's requirements. Submit a statement of the current practice of battery disposal/recycling. SHS company operations stage Remain in good compliance with all relevant requirements. Participate in battery disposal/recycling program (if any). 3. Monitoring stage: Conduct self-monitoring to ensure compliance. Provide relevant documents to RREA in a timely manner when requested.
Component 2: Urban access/ Rooftop	
PIU	Same as 1.1 and 1.2
Interconnected Developers	Same as 1.1
EPA	Same as above

Table 16 : Overview of Relevant Institutions

Institution	Role
Ministry of Finance	The Ministry of Finance will function in the capacity of the Republic of Liberia (the borrower)
Ministry of Justice	The Ministry of Justice shall sign on behalf of the Government of Liberia as the borrower.
Ministry of Environment	The Ministry of Environment is mandated by the Republic of Liberia to ensure environmental protection and natural resources conservation for sustainable development in the country. They promote cooperation in environmental science and conservation technology with similar bodies in other countries and with international bodies connected with the protection of the environment and the conservation of natural resources. The Ministry also cooperates with other Ministries, Local Government, statutory bodies, and research agencies on matters and facilities relating to the protection of the environment and the conservation of natural resources. The EPA will ensure that all project/sub-project ESIAs meet international "best practices,"

Institution	Role
	and the PIU will regulate and enforce the implementation of all ESMPs developed for the project.
The Rural and Renewable Energy Agency (RREA)	This is the designated agency to handle all policy issues pertaining to rural electrification. It will be the primary representative in the execution of the project.

10.1.1. County Level Institutions

The Liberia Rural and Renewable Energy Agency (RREA) has yet to establish offices at the county level, but the EPA has. The Environmental Protection Agency (EPA) of Liberia is actively decentralizing and establishing its presence in counties by establishing county offices. The objective is to have a physical presence and serve the populations of the country's 15 counties. New offices have been established in 13 of the 15 counties: Bong, Nimba, Lofa, Margibi, Grand Bassa, Bomi, Grand Gedeh, Sinoe, Maryland, Montserrado, Grand Cape Mount, Gbarpolu, and Rivercess counties. The functions of the EPA District offices include:

- Enforcement of all environmental legislation in the districts;
- Compliance monitoring;
- Environmental awareness through information and education;
- Preservation, conservation, and restoration of biological diversity;
- Protection of air, water, land, forest, and wildlife;
- Pollution control and environmental health in the district.

EPA County officers will be continuously consulted prior to any project activities in the community and throughout project implementation.

10.1.2. District Level Institutions

Local districts are the government's institutions nearest to the people or the masses. For any meaningful development to take place, this level of government needs to be galvanized to execute people-oriented programs to lower the poverty level. District administrations are expected to serve as an interface between community members, the PIU, and investors/contractors planning and carrying out project activities in the District. Members of the local government are mostly people from the community and can easily win the trust of the people. Additionally, local community social infrastructure, such as schools and health clinics, is part of the targeted infrastructure of the project, making local government institutions part of the primary project beneficiaries. that may become project beneficiaries. Their staff can work together with the other MDAs. District councils will be continuously consulted prior to any project activities in the district and throughout project implementation. The Council should, in turn, engage and should be encouraged to support the awareness campaign for the proposed project to be designed by PIU, amongst the various relevant grassroots interest groups.

10.1.3. Community Level Institutions

This includes direct and other concerned stakeholders/groups. They will be continuously consulted prior to any project activities in the community and throughout project implementation. This may have complaints/views that need to be resolved in the choosing and execution of the various sub-projects.

10.1.4. Civil Society Organizations

Non-governmental organizations (NGOs), unions, and charities present in the counties at various levels can be direct and/or other concerned stakeholders. They can serve as an interface and can speak for the people. They will be continuously consulted as part of the project preparation and implementation before any project activities in the community where they work or have ties, historical, social, or technical.

11. STAKEHOLDER ENGAGEMENT AND GRIEVANCE MECHANISM

Early and continuous stakeholder engagement is very important because it will allow the communities and the potentially Project Affected Person(s) to contribute input and feedback information, aimed at strengthening the development project and avoiding negative impacts, or mitigating them where they cannot be avoided. It also reduces the possibilities of conflicts between the project and adjacent communities. Therefore, effective and close consultation with them is a prerequisite for the successful running and execution of the DARES.

As such, there is a need to utilize social development approaches (such as inclusive and continuous stakeholder participation in project implementation) as key accelerators to achieving results. The social sustainability program will support but also test what citizens can do to keep the government's investments through the project operating properly and yielding benefits to the citizenry as intended.

Stakeholder and citizen engagement will be built by:

- Setting up effective grievance redress and beneficiary feedback mechanisms;
- Ensuring an intensive program of engagement with project stakeholders;
- Deploying effective strategic communications and public education;
- Deepening the consultation process, which began during project preparation; and
- Monitoring social impact through annual stakeholder surveys.

The PIU will engage with stakeholders, including communities, groups, or individuals affected by the project, and with other interested parties, through information disclosure, consultation, and informed participation in a manner proportionate to the risk to and impacts on affected communities. Stakeholders' engagement shall take place at the inception of the planning stages, for example, when the potential mini grid project sites are being investigated, and as soon as the universities are identified. Public consultation will be made when potential resettlement and compensation concerns are involved.

11.1. Stakeholder Consultation and Engagement

Stakeholder consultations and engagement are sequenced in a three-stage process designed to progressively expand participation consistent with the evolution of project activities from design to implementation. Public stakeholder consultation and engagement will expand and deepen as project activities become spatially and socially more specific. This sequencing ensures that stakeholders are engaged at the point where decisions remain influenceable, and that consultation intensity increases as geographic footprints and potential impacts become clearer, consistent with the principles of meaningful consultation, inclusiveness, proportionality, and iterative feedback loops under ESS10.

Phase 1 Strategic, Regulatory, and Market Consultations – Technical meetings between the World Bank and institutional and market stakeholders, including relevant ministries, regulators, implementing entities, environmental authorities, and private sector actors, to address upstream technical, regulatory readiness, implementation arrangements, operational, legal, and regulatory issues critical to the feasibility and scalability.

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Phase 2: Regional, District Civil Society Stakeholder Consultations and Engagement. Public consultations to foster social cohesion and project appropriation at the regional and district levels through the engagement of national, regional, and district stakeholders, private stakeholders, and civil society, to deliberate on the proposed project operational approach, design, sites, institutional arrangements, economic conditionalities, dividends, and potential adverse environmental and social impacts.

Phase 3: Local Government, Community, and Citizens Consultations and Engagement. Public consultations between national, regional, district, private, and civil society stakeholders to foster social cohesion and project appropriation at the local government, community (including community leaders, vulnerable groups), and citizens' level, to deliberate on the proposed project operational approach, design, sites, institutional arrangements, economic conditionalities, dividends, benefits, and potential adverse environmental and social impacts. The three phases of consultations will be carried out throughout project implementation, and in line with the requirements of the Stakeholder Engagement Plan.

Three Bank-led technical meetings with selected institutional stakeholders and private stakeholders took place during project preparation. The meetings focused on strategic, regulatory, and market aspects of the project. Additional consultations will be carried out continuously throughout the project implementation in line with the three-phase approach, consistent with the Stakeholder Engagement Plan (SEP). The three meetings, of which one was physical (in Monrovia), and two were virtual, were organized by the World Bank Project Team. Nine (9) persons, including the World Bank team, took part in the meetings. Key issues discussed included: i) Regulations; ii) Private sector mobilization; iii) Ownership of mini-grids; iv) Licensing requirements; v) Construction permits; vi) Fiscal incentives for mini-grids; vii) Tariff regulations; viii) Applicability of stabilization clauses to DRE projects and EaaS contracts; ix) Sequencing of licensing and construction permits, and x) Sequencing of grant agreements, licensing, and financial close. The three meetings, of which one was held physically in Monrovia and two were conducted virtually, were organized by the World Bank Project Team. The in-person consultation was the Regional DARES Pre-appraisal Mission held at the RREA/MME Offices in Monrovia on 18 March 2026, beginning at 9:00 a.m. Representatives of the World Bank, the Ministry of Mines and Energy (MME), the Rural and Renewable Energy Agency (RREA) / Project Implementation Unit (PIU), the Ministry of Finance and Development Planning (MFDP), the Liberia Electricity Regulatory Commission (LERC), and the Liberia Electricity Corporation (LEC) participated in the Monrovia consultation. Key issues discussed across the consultation process included: (i) regulations; (ii) private sector mobilization; (iii) ownership of mini-grids; (iv) licensing requirements; (v) construction permits; (vi) fiscal incentives for mini-grids; (vii) tariff regulations; (viii) applicability of stabilization clauses to DRE projects and EaaS contracts; (ix) sequencing of licensing and construction permits; and (x) sequencing of grant agreements, licensing, and financial close. The outcomes of these consultations informed revisions to the institutional arrangements, E&S staffing provisions, screening arrangements, and grievance mechanism reflected in this ESMF.

Table 11.1: Stakeholder Consultations Conducted During ESMF Preparation

#	Event	Format / Date	Entities that Attended	Key E&S Issues Raised	Integration into ESMF
1	Regional DARES Pre-appraisal Mission	In-person, RREA/MME Offices, Monrovia, 18 March 2026, beginning at 9:00 a.m.	World Bank; Ministry of Mines and Energy (MME); Rural and Renewable Energy Agency (RREA) / Project Implementation Unit (PIU); Ministry of Finance and Development Planning (MFDP); Liberia Electricity Regulatory Commission (LERC); Liberia Electricity Corporation (LEC)	PIU structure and E&S staffing arrangements; component scope and sequencing; institutional responsibilities under MME, RREA, LERC, and LEC; and clarification of issues raised in the draft Compact Note regarding PIU structure	PIU E&S staffing requirements were updated; institutional arrangements were revised to reflect the agreed PIU structure; the roles of MME, RREA, LERC, and LEC were clarified; and component sequencing was reflected in the ESMF implementation plan
2	Regional DARES Bi-weekly Client Meetings	Online (MS Teams), multiple sessions, 2025–2026	World Bank; RREA / PIU; Ministry of Finance and Development Planning (MFDP); Liberia Electricity Regulatory Commission (LERC)	E&S screening process design and triggers; DRE company eligibility criteria; GRM design, access, and activation timing; battery and e-waste	E&S screening triggers and DRE eligibility criteria were incorporated into the ESMF; battery and e-waste were elevated as a cumulative, systemic risk requiring

				management as a systemic cumulative risk; SEA/SH risk in rural and peri-urban settings; labor influx management	national-level strategic attention; GRM activation was set at project effectiveness; SEA/SH risk management provisions were strengthened; and Labor Management Procedure requirements were reinforced
3	Bank-led Technical Meetings (×3)	In-person / Online, project preparation stage	Government regulators; private sector DRE companies; selected civil society representatives	Regulatory framework gaps affecting DRE market entry; OHS standards for DRE companies; market entry barriers; affordability and social exclusion risks for low-income households	Weak E&S practices among DRE companies were reflected as a key risk category; E&S eligibility criteria for grant agreements were strengthened; social exclusion risks were reflected in the risk and mitigation sections; and affordability barriers were considered in the design of project

					implementation arrangements

Public consultations and stakeholder engagement shall be carried out prior to the project's effectiveness date and maintained throughout the implementation of the project. The stakeholder engagement and public consultation entail the process of informing the institutions/communities on: (a) the need to carry out the sub-projects in their environment, (b) the scope, and (c) the need for the institution/community to own and safeguard the project as beneficiaries and stakeholders. Such engagement is important because it will give the institutions/communities and the potentially project-affected persons the opportunity to contribute input and feedback information, aimed at strengthening the development process and avoiding negative impacts or mitigating them where they cannot be avoided. Effective and close consultation with them is a prerequisite for the successful running and execution of the project. Public participation and consultation will take place through meetings, radio programs, requests for written proposals/comments, filling in questionnaires, explanations of the project to the locals, and making public documents available at the national and local levels.

At the local level, suitable locations will include the Village squares, church halls, and residences of traditional or recognized leaders. These measures would take into account the low literacy levels prevalent in these rural communities by allowing enough time for responses and feedback. Notwithstanding, the best guarantors for public interest are traditional authorities, such as the chiefs and other religious leaders who are responsible members of their local communities and can inadvertently be part of the potentially displaced (economically or physically) individuals/households, either in part or in whole.

The objectives of stakeholder engagement are:

The key issues and concerns identified during the consultations included, but were not limited to:

- Are these projects going to provide any benefits for the local people?
- Whether local people get better access to electricity?
- Whether solar panels have any impact on the health of the people and the crops growing in the area?
- What will the rate for land be payable to the landowners?
- What will be the fate of agricultural laborers who do not own land and are dependent on landowners for labor work on agricultural land owned by big farmers?
- How would the developer/constructor ensure that the noise/dust/labor camps setup during the construction phase of the project does not impact the local village community?
- Will the construction activity have any adverse impacts on our existing surface water resources?

11.1.1. Special Requirements for Subprojects with Potential Resettlement

The Project grievance mechanism (GM) incorporated in the SEP shall allow the general public in the project area, affected communities or individuals, and PAPs to file complaints regarding land

acquisition issues and to receive responses promptly. The system will also record and consolidate complaints and their follow-up. When a developer/contractor conducts construction on a site that might require land acquisition, the issue shall be addressed through a willing buyer and a willing seller arrangement, land lease, or land donation. DARES Liberia will not fund projects that require the preparation of RP/RAP.

Stakeholder Engagement for Mini Grid Construction

1. As part of the minimum subsidy tender process, early stakeholder engagement for this component will be conducted at the site investigation stage by RREA. RREA shall take into account the comments from such consultation in deciding whether a potential mini grid construction site should be selected for the lots. Subsequently, mini grid developers will continue to conduct stakeholder engagement as part of their ESMS.

2. The stakeholder engagement as part of the performance-based grants process will be conducted by the mini grid developer as part of their ESMS. Stakeholder engagement would start before they submit their proposals. A summary of findings, a detailed description of the process, and an engagement log should be included in the Proposal Package. Stakeholder engagement should continue throughout subproject construction and operation. If RREA deems the initial stakeholder engagement is not sufficient, it can ask the developer to conduct a further consultation before the construction or any preparation work begins.

11.2. Grievance Resolution Mechanism (GRM)

Through the SEP, the project will set up a GRM for people to report concerns or complaints if they feel unfairly treated or are affected by any of the subprojects. A separate GBV GRM shall also be established to address issues relating to GBV/SEA/SH and any victims. The GRM system will record and consolidate complaints and their follow-up.

While the GBV GRM is designed to exclusively and confidentially handle matters of GBV/SEA/SH nature, the project GRM system will be designed to handle complaints perceived to be generated by the subproject or its personnel. It may also include disagreements about compensation and other related matters. The mechanism will, amongst other things:

- provide information about project implementation;
- provide a forum for resolving grievances and disputes at the lowest level;
- resolve disputes relatively quickly before they escalate to an unmanageable level;
- facilitate effective communication between the project and affected persons;
- win the trust and confidence of project beneficiaries and stakeholders and create productive relationships between the parties.

The GRM should review any existing resolution systems (government/traditional) that are operative in the area and propose ways that the GRM may fit within these systems. Ideally, the subproject GRM should have second and third levels of appeal (including the court system, if appropriate, for legitimate claims that cannot be resolved at lower levels). The functioning of the GRM system, how to register complaints (written, by phone, or in person), where to go, and hours of service, all should be clearly explained in the local language during initial public consultations on the subproject. Local language brochures should be provided, reiterating the functioning of the GRM.

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The PIU is responsible for setting up and maintaining the GRM that allows the general public and affected communities or individuals to file complaints and to receive responses in a timely manner. The system will also record and consolidate complaints and their follow-up. This system will be designed for handling complaints perceived to be generated by the project or its personnel. It may also include disagreements about compensation and other related matters.

The GRM will be communicated to all stakeholders in the course of RREA's stakeholder engagement activities and will remain available throughout the project cycle. It is expected to address concerns promptly and effectively, in a transparent manner that is culturally appropriate and readily accessible to all project-affected parties, at no cost and without retribution. It will also allow for anonymous complaints to be raised and addressed.

The PIU will assign a specific staff member to ensure that it is functioning properly. The consultants should review any existing GRM systems (government/traditional) that are operative in the area and propose ways that the GRM may fit within these systems. Ideally, the GRM should have second and third levels of appeal (including the court system, if appropriate, for legitimate claims that cannot be resolved at lower levels). The functioning of the GRM system, how to register complaints (written, by phone, or in person), where to go, and hours of service, all should be clearly explained in the local language during initial public consultations on the project. For the purpose of a clear procedure table below presents a typical grievance redress process and modality.

The Grievance Management Process, as shown in Table 9.1, will include;

- Different ways in which users can submit their grievances, which may include submission in person, by phone, text message, mail, email, or via a website;
- A lot where grievances are registered in writing and maintained as a database;
- Publicly advertised procedures, setting out the length of time users can expect to wait for acknowledgement, response, and resolution of their grievances;
- Transparency about the grievance procedure, governing structure, and decision makers; and
- An appeals process (including the national judiciary) to which unsatisfied grievances may be referred when resolution of the grievance has not been achieved.

Table 17 : Grievance Management Process

Step	Description	Timeframe	Responsibility
Step 1: Uptake	Grievance received through CLOs, hotline, SMS/WhatsApp, email, website, written letter, or grievance box	Day 0	CLOs and PIU
Step 2: Registration and Acknowledgment	PIU logs the case into the GRM Information System (GMIS), assigns a tracking number, and acknowledges receipt to the complainant	Within 2 working days	PIU GM Focal Point
Step 3: Screening and Categorization	Complaint classified by type (service, land, labor, environment) and urgency	Within 2 working days	PIU GRM Focal Point

Step	Description	Timeframe	Responsibility
Step 4: Referral	PIU assigns the complaint to the responsible entity for resolution (DRE Company, Fund Manager, Fiduciary Agent, Contractor, Local Authority)	Immediately after screening	PIU GRM Focal Point
Step 5: Investigation and Resolution	The responsible entity investigates and proposes a resolution based on agreed standards and procedures	10 to 15 working days	Assigned entity
Step 6: Verification of Resolution	PIU contacts the complainant to confirm satisfaction before closing the case. If unresolved, escalation applies	Within 5 working days	PIU GRM Focal Point
Step 7: Closure or Escalation	Case closed if resolved; otherwise, escalated to PIU Management, RCU, or World Bank GRS	As needed	PIU / RCU / WB GRS
Step 8: Independent Verification	IVA conducts random verification and field validation to ensure fairness	Periodically	Independent Verification Agent

If complainants are not satisfied with the grievance process, even after arbitration, the affected persons will still have the right to present their complaint through the court system. Complaints related to GBV and Anti-Money Laundering / Countering the Financing of Terrorism will be managed separately, following respective procedures as set out in the GM Manual that the project will develop before implementation starts.

11.2.1. The DARES-PIU Grievance Redress Committee

The Grievance Redress Committees, GRC, will be mandated to deal with all types of grievances arising at the community level due to DARES and its subprojects except GBV/SEA/SH matters. As earlier indicated, a separate GBV GRC shall be established to address any grievances relating to any GBV/SEA/SH in accordance with the provisions of this ESMF under Section 9.5. The project GRC members will comprise qualified, experienced, and competent personnel who will be able to interact and gain the trust of the Affected Persons (APs) in their communities. The GRC should consist of both male and female representatives. They should be able to accept complaints, provide relevant information on the process, discuss the complainants' situations with APs, and explore possible approaches for resolution. The project Grievance Redress Committee will include the following members;

1. PIU Environmental Safeguards Specialist, Social Development Specialist, and GBV specialist.
2. PIU Communication Specialist
3. PIU M&E Specialist
4. Energy Gender Specialist (if available), supported by a nominee each from:
5. Office of the Head, PIU
6. PIU Procurement Unit

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7. Project Engineers
8. Office of the RREA Director of Promotions

The project Committee will be responsible for the following:

- Communicating with the Affected persons (AP's) and evaluating if they are entitled to recompense.
- Publicizing within the Communities, the list of affected persons, and the functioning of the established grievance redressal procedure;
- Recommending to the Social Officer of the PIU solutions to such grievances from affected persons;
- Communicating the decisions to the AP's;
- to acknowledge appeals from persons, households, or groups who rightfully will not be affected by the project or its sub-projects, but claim to be,
- Recommending to the PIU whether such persons should be recognized as AP's, and
- Communicating back the decisions to the Claimants.

This committee shall be the apex authority of the DARES GM, which will make recommendations for action to the Head of Project Management Unit in the case of issues of extreme importance, or make referral to the Citizens' Rights/Mediation Centre in the Ministry of Justice of an applicable state in the case of grievances that are either unresolvable at the committee level or found to be extraneous to the execution of the project.

11.3. Gender Based Violence (GBV) and Sexual Exploitation, Abuse and Harassment (SEAH)

All complaints related to GBV shall be treated in a private and confidential manner, limiting information to what the survivor or complainant is freely willing to provide. A separate register shall be opened for this category of cases and shall ONLY be accessed by the community-based GRC secretary, the GM coordinator at the PIU (and any female GRC member empowered to handle GBV cases where the Chairman and Secretary are all male). The complainant (if a survivor) shall be attended to with empathy, assurance of safety, and confidentiality. In the event that the complainant is not willing to divulge any information, the GM officer should respect this view, and the complainant should be referred to the appropriate nearest medical centre, approved with available GBV service provider or police, depending on the complainant's choice. Such a complaint should be reported to the World Bank Task Team as well by the PIU GRC.

Other considerations for the handling of GBV/SEA grievances include:
No GBV data on anyone who may be a survivor should be collected without making referral services available to support them. All GBV complaints should be referred to the right service provider and other relevant institutions. Information to be requested should be limited to: The nature of the complaint (what the complainant says in her/his own words without direct questioning), if, to the best of their knowledge, the perpetrator was associated with the project.

Upon receiving a complaint, the assigned representative must complete a complaint intake form, ensuring that the survivor provides written consent before proceeding. If the survivor has not yet been connected to support services, the intake officer must confirm their preferences and facilitate referrals to local medical, psychosocial, or legal assistance, either in person or remotely, as required. GM operators must protect confidentiality, document only essential details: the survivor's exact

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account, age, and any potential connection between the perpetrator and project activities and refer the matter promptly to the appropriate GBV committee/group. Survivors will be provided with clear, accessible information about the process, timelines, and available support, and retain full autonomy over participation and data sharing. The survivor's autonomy must be respected at all stages. This approach prioritises the safety, dignity, and access to essential support for survivors while maintaining rigorous accountability measures. Any information collected about a survivor or the alleged perpetrator should be stored separately from other grievance documentation, in a secure, lockable space, with strictly limited access.

To ensure proper handling of cases at the community level, Community Liaison Officers and other corresponding GM reporting points must receive training on:

- Active listening techniques to engage survivors with sensitivity,
- Secure referral procedures for SEA/SH incidents, and
- Confidential storage of intake documentation.

Complaints will be filed with written survivors' consent, and immediate referrals to support services will be made where necessary. The GM focal point will verify service provision, classify the case, notify project Social and GBV specialist **within 24 hours,** and strictly limit information sharing to protect identities. **SEA/SH cases must be reported to World Bank immediately when it becomes known to the project**.

The GM focal point at the PIU must provide a formal acknowledgement of the SEAH grievance within three (3) days of filing, depending on the initial complaint delivery method. If the complaint was received via a SEA/SH/ GBV service provider, all communication with the survivor may be managed through the provider.

The PIU Social and GBV Specialist (trained in survivor-centered approaches) will investigate within 10 days to examine the facts of each case and assess incidents to:

- establish any project linkage and
- recommend proportionate disciplinary actions to the accused's employer.

Final disciplinary decisions remain with employers, while legal determinations fall to judicial authorities. This process ensures accountability while respecting institutional boundaries and due process.

The Social and Gender-based Violence Specialist at the PIU will act to facilitate the survivor's access to this forum, and make appropriate referrals to GBV service providers, where needed.

Ongoing monitoring will ensure confidentiality, informed consent, and proper service referrals. Survivors will be informed of outcomes within fourteen (14) days and can appeal decisions through an established committee within the PIU responsible for ascertaining the facts of the case. All data gathering will prioritize respondent safety, confidentiality, and informed consent, with special safeguards for children and vulnerable groups and rigorous standards for team training and support.

The following guidelines will be followed in engaging stakeholders and affected parties on SEA/SH:

- Information gathering and documentation must be done in a manner that presents the least risk to respondents, is methodologically sound, and builds on current experience and good practice.

- In maintaining records, all details will be kept unidentifiable in individual cases, and the confidentiality and safety of GBV survivors will be protected above all. This means restricting access to case date and incidents' report in the data management system.

- The safety and security of all those involved in information gathering about SEA/SH cases of paramount concern and should be continuously monitored. The confidentiality of individuals who provide information about SEA/SH cases mut be always protected.

- Anyone providing information about SGBV must give informed consent before participating in the data gathering activity.

- All members of the data collection team must be carefully selected and receive relevant and sufficient specialized training and ongoing support.

- Additional safeguards must be put into place for children under 18 years, that are to be the subject of any direct incident information gathering, including mandatory presence of a trained professional adept at communicating with children safely and ethically.

Key provisions of SEA/SH within the project GM will include the following:

- Confidential reporting channels are available directly to the PIU SEA/SH Focal Point or partner GBV service provider.
- No personal data is recorded in the GMIS; only non-identifiable case codes are used.
- Consent of the survivor is required before any action is taken.
- No retaliation is tolerated; protection measures are activated immediately.
- Referral pathways include medical, psychosocial, legal, and security assistance.

DRE companies and contractors must sign and comply with the project's SEA/SH Code of Conduct.

12. CAPACITY BUILDING

RREA, together with the RCU, is committed to providing resources essential to the implementation of the ESMF. Resources include human resources and specialized skills, organizational infrastructure, technology, and financial resources. RREA will establish and maintain documentation as necessary to demonstrate conformity to its requirements of its ESMF and the results achieved, with a sound procedure to identify, store, protect, retrieve, retain, and dispose of such documentation. The ESMF documentation shall include:

- documents, including records, required by national or international laws;
- document, including records, determined by the organization to be necessary to ensure the effective planning, operation, and control of processes related to its significant E&S aspects.

Consistent with its commitment to compliance, RREA shall establish, implement, and maintain a procedure(s) for periodically evaluating compliance with applicable E&S requirements. RREA shall keep records of the results of the periodic evaluations.

RREA management shall review the ESMF at planned intervals to ensure its continuing suitability, adequacy, and effectiveness. Reviews shall include assessing opportunities for improvement and the need for changes to the environmental management system, including the environmental policy, environmental objectives, and targets. Records of the management reviews shall be retained.

For effective implementation of the ESMF, there will be a need for technical E&S capacity in the human resource base of RREA as the implementing institution, as well as key private sector entities responsible for the implementation of activities under project components. An appropriate understanding of the mechanisms for implementing the ESMF will need to be provided to the various stakeholders implementing RREA projects. It will also be important to ensure that RREA has sufficient capacity and systems for effective oversight of the fairly complex processes for E&S risk management with multiple parties involved. Table 19 summarizes the potential challenges faced by components 1, 2, and 3, and capacity building can help address them effectively.

Table 18: Off-grid components 1&2 challenges and mitigation measures

Challenges	Mitigation
1. Lack of awareness	Promotional program Training programs Community sensitization
2. Lack of access to financing	Select and strengthen the capacity of participating credit institutions. Capitalize a credit line. On-lend to: solar home system companies for working capital, mini grids for investment, or MFIs for on-lending to SHS customers
3. Untested business models	Public-private partnership enterprise model with the ultimate goal of commercialization The presence of multiple program partners ensures healthy competition. Phased reduction of grants Training for program partners in enterprise and financial management
4. Lack of institutional capacity	Institutional development grant Long-term concessionary credit Staff training program
5. High cost of quality SHS equipment and mini grids	Capital buy-down grant. Concessionary credit facility Consumer in-kind or cash equity Increased volume of business
6. Lack of quality assurance	Technical Standards Design assistance services Quality control by the Program Manager Training to Participant Organizations in good practices in design, installation, and service

In general, to enhance the respective roles and collaboration of the relevant stakeholders, the following broad areas (not limited to) for capacity building have been identified as deserving of attention for effective implementation of the ESMF:

- E&S management planning and monitoring systems, impact assessment tools, monitoring tools, and activities;
- Preparation and verification of reporting;
- Public participation techniques and citizen engagement, including public awareness creation / educational techniques (on environmental, social, and health issues); and
- Addressing systemic E&S risks in the Liberian off-grid solar market through developing targeted strategic solutions.

Capacity-building efforts are needed at different levels. It has to be ensured that all authorities, institutions, and organizations involved integrate their activities within appropriate co- coordinating mechanisms in order to give consistent signals for the management of RREA projects. The four E&S capacity building activities categories are:

- E&S capacity building for RREA;
- E&S training and support to mini grid developers;
- Training that empowers citizen engagement; and
- Capacity building that strengthens the development of strategic solutions for E&S risk management for the off-grid solar market.

12.1. E&S Capacity Building for RREA

Capacity building will support developing PIU and RREA's capacities to implement a robust E&S risk management approach in their activities, as well as enhance E&S benefits and opportunities, such as gender-related activities, green initiatives, etc. The implementing agency (RREA) have established a safeguard unit responsible for the training of individuals hired to work in the Unit, and the capacity building of those individuals will be key. The RREA should be able to provide adequate training for its E&S staff, as well as all other staff to whom this aspect is relevant. This support will also include a budget for conducting regular monitoring activities, as well as independent E&S audits.

Additionally, environmental issues are dynamic and differ between sectors. Although the EPA currently performs functions related to the ESMF roles mentioned above, the EPA staff are also in need of training and further capacity building. The objective of the training program is to ensure appropriate environmental awareness, knowledge, and skills for the implementation of environmental management plans as well as environmental and process monitoring. In an effort to strengthen institutional capacity and environmental awareness, training sessions will be opened for individuals from the EPA, the RREA, and other concerned governmental agencies and ministries. Appraisal will be conducted following a training session for feedback towards improving the training program. The typical scope of the training sessions will encompass:

- Defining relevant environmental laws, regulations, and standards for each of the targeted institutions based on their responsibilities as well as current and prospective projects in the energy sector. Reviewing and discussing the World Bank's Safeguard Policies.
- Conducting bid tenders where appropriate while ensuring that the World Bank's ESS and the applicable EPA legislation and GoL laws are respected.
- E&S screening: screening of investments for potential environmental and social impacts, scoping assessments, planning mitigation options, public consultation to assess feasibility and acceptability options; step-by-step implementation of the environmental and social screening process for projects.
- Environment: site selection to minimize environmental impacts and social disruption; restoration of drainage patterns, including mitigation matters in contracts; management of impacts during construction; monitoring of the effectiveness of measures.
- Reviewing Environmental Impact Assessment methodology (at both the sub-project and strategic levels) and environmental sampling and monitoring procedures (air, noise, water, etc.).

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- Introducing mitigation measures aimed at minimizing adverse environmental impacts associated with the construction and operation of energy-related projects with special emphasis on low-technology, affordable, and sustainable measures.
- Introducing the fundamentals of occupational health and safety procedures with emphasis on the risks associated with electricity production.
- Presenting case study EMPs of relevant projects (hydroelectric projects, thermoelectric projects, solar power energy production (such as thermal power generation, hydroelectric power generation, solar power generation, etc.)
- Conducting an open dialogue with the targeted audience, whereby individuals will be asked to share their experiences (success stories and shortcomings) in implementing EMPs and the main technical problems faced in the field.
- Monitoring and grievance redress: transparency and supervision responsibilities.

The training program is to consist of technical assistance, likely by individual consultants, and will be targeted at individuals within primarily the RREA and the EPA, whose main responsibilities currently or in the future will encompass environmental and social safeguards. It is proposed that the training program be implemented at least twice a year over a period of two years, roughly the period of the two current Bank-funded projects. Staff and operators of sub-projects may also be targeted as appropriate.

12.1.1. E&S Training and Support to Mini Grid Developers

This activity will build E&S capacity, as part of overall capacity strengthening, of existing mini grid developers and other private companies interested in entering the mini grid market, to identify sites viable for mini grid development. They will be provided with training and support to develop and enhance their ESMS to be able to comply with the applicable E&S requirements.

The mini grid developers should be trained in different aspects of the implementation of the ESMF and the proposed Project, including the interpretation and implementation of environmental impact management guidelines. The three major areas for anticipated training are:

- Awareness raising to fully appreciate the significance or relevance of environmental issues, as well as the sensitivity of certain issues, such as land use.
- Detailed technical training on analyzing potentially adverse environmental impacts, to prescribe mitigation approaches and measures, and to prepare and supervise the implementation of environmental and social management plans. This training will address such matters as environmental assessment, using the ESMF, and project supervision and monitoring.
- Capacity building on how to interact with host communities, such as community participation methods, both for conducting stakeholder engagement and for addressing conflicts/grievances caused by the proposed project.
- Monitoring & reporting: how to fulfill RREA's requirement on monitoring and reporting.
- Other training that will strengthen mini grid developers' ability to improve overall project quality, such as project management, occupational health and safety, monitoring and evaluation, waste management, etc.

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12.1.2. Citizen Engagement

This will support the education and awareness under the project's key delivery areas, namely households, small businesses, and universities. Different stakeholders affected by the project's implementation have different training needs or will be part of awareness raising activities by the project.

The target audience of such training activities include, but not limited to: people whose land and/or livelihood might be affected by the projects, buyers/potential buyers of the standalone solar system, students and faculties in the beneficiary universities and teaching hospitals, etc.

The activities here are proposed to address the following:

- Initial reservation in the adoption of a new technology for communities and households (for both solar mini-grids and SHS);
- Buyer's inability to make informed purchasing decisions and decipher quality in the market;
- Importance and advantages of conserving energy;
- Environmental and social awareness for solar technologies, such as recycling/ proper disposal of batteries.

The capacity-building activities will equally prioritize men and women as a prime target audience. It is in the project's interest to reach women who will be the end users of the proposed solar solutions. Capacity development for community facilitators and field-level staff will also be implemented because they are the ones who will reach out to the communities, and it becomes necessary for these staff and representatives to be well-grounded with adequate information on the project. They will be able to communicate effectively in the local languages, understanding community dynamics and processes, negotiation, and conflict resolution, and empathizing with communities and their needs. Building trust and maintaining good rapport with the people in the Project areas by providing relevant information on the project and responding effectively to their needs and concerns will help solve issues before they even become grievances. It is also important that the community facilitators and field-level staff provide feedback to the RREA.

12.1.3. Capacity Building that Strengthens the Developing Strategic Solution for E&S Risk Management for the Off-Grid Solar Market

This category of activities will support developing programmatic approaches to address key strategic challenges faced by players beyond the direct stakeholders of this project.

Beyond the specific E&S due diligence at the level of mini grid sites and developers, SHS distributors, and private sector contractors for the three program components, some of the identified E&S risks require strategic solutions at the market/ sector level. Therefore, capacity training targeting a broader scope of audience, including policy makers, industry practitioners, domestic and international financiers, and other key players in Liberia's solar energy sector.

- Land issues and competing land use challenges for mini grids;
- Waste management, and more specifically, battery storage and recycling; and
- Need for harmonization of E&S standards among private mini grid developers and their financiers.

In sum, capacity building should be viewed as more than training. It is human resource development and includes the process of equipping individuals with the understanding,

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skills, and access to information, knowledge, and training that enable them to perform effectively.

Given the nature of the environmental and social management requirements and provisions outlined in this ESMF, competencies and capacity building will be required in the following areas:

- Environmental Impact Assessment Process - Screening, scoping, impact analysis, mitigation measures, and monitoring, reviewing EIA Reports'
- Environmental Due Diligence - Types of due diligence, screening projects for liabilities, scoping due diligence investigations, and reviewing due diligence reports.
- Monitoring and Evaluation - Understanding the importance of M&E in project implementation, M&E requirements for environmental and social sustainability of projects.

Table 19 : E&S Capacity building activities and estimated costs

Activity	Description	When	Training to be conducted by who	Estimated Budget
Strengthening PIU and Rural Electrification Agencies' E&S capacity	This will support developing RREAs' capacity to implement a robust E&S risk management approach in its activities, as well as enhance E&S benefits and opportunities (such as gender-related activities, green initiatives, etc.). RREA should be able to provide adequate training for its E&S staff, as well as other staff to whom this aspect is relevant. This support will also include budget for: • training of RCU and PIUs E&S staff • hiring an E&S firm to assist in building E&S systems for the project. • conducting regular E&S monitoring activities (both directly by RCU, PIUs, and third-party monitoring by a specialized NGO or other similar entity) • commissioning independent E&S audits • hiring a gender expert.	During project implementation	External Consultant	$160,000
Design and implementation of a GM	Design and implementation of a GM at the RREA level and integrating it at various levels of the project.	Before project implementation	External Consultant	$100,000
Developing strategic solutions for E&S risk management for the off-grid solar market	This will support developing programmatic approaches to address key strategic challenges identified, which are (i) land issues and competing land use challenges for mini grids; (ii) waste management, and more specifically, battery storage and recycling; (iii) the need for harmonization of E&S standards among private mini grid developers and their financiers	Throughout the project lifecycle	RREA/Consultant	$160,000
4a. Battery recycling	Waste management, and more specifically, battery storage and recycling, and the need for harmonization of E&S standards among private mini grid developers and their financiers.			TBD
4b. Land acquisition and resettlement	Land issues would be addressed through building strategic engagements with relevant regulatory agencies and bringing them			TBD

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Activity	Description	When	Training to be conducted by who	Estimated Budget
	together with private sector mini grid developers to develop sustainable models for land acquisition, including stakeholder engagement with communities			
4c. Policy/ standards harmonization	Multi-stakeholder dialogue on harmonization of E&S standards and regulatory environment for mini grid developers			$25,000
Community engagement and sensitization campaigns	Support education and awareness under the project's key delivery areas: households, small businesses, and universities. The initiative will address the following: (i) initial reservation in the adoption of a new technology for communities and households (for both solar mini-girds and SHS); (ii) buyer inability to make informed purchasing decisions and decipher quality in the market; (iii) importance and advantages of conserving energy; and (iv) environmental and social awareness for solar technologies, such as recycling/ proper disposal of batteries. The initiative will equally prioritize men and women as a prime target audience. It is in the project's interest to reach women who will be the end users of the proposed solar solutions. This will also include citizen engagement surveys.	Throughout the project lifecycle	RREA	$60,000
Gender actions implementation	Implementing a gender strategy for the project, with the following core gender actions: For mini grid development, exploring entry points to enhance women's participation and productive uses of energy in mini-grid operations to increase the sustainability of operations. For SHS component, taking action for women to be engaged as valuable partners along the entire value chain—design, marketing, sales, and after-sales services. GBV prevention and mitigation, and monitoring.	During project implementation	Consultant	$70,000
Total				$ 575,000

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13. INFORMATION DISCLOSURE

13.1. Public Consultation Requirements of the ESIA Process

According to Sections 17 and 18 of the Environmental Protection and Management Law and World Bank ESS10, public consultations are an integral component of the ESFM and ESIA requirements, and the guidelines identify the following principal elements:

- Developers are required to conduct public consultation during the preparation of ESIAs.
- The formal ESIA document is made available for public review and comments.
- Documents to which the public has access include Project Briefs, ESIA terms of reference, draft and final ESIA reports, and decisions of the appropriate authorities regarding project approval.

The implementing agency (RREA) is required to conduct public consultations in beneficiary and affected communities in order to identify key issues and determine how the concerns of all parties will be addressed in response to the terms of reference for the ESIA. Hence, in keeping with the public consultation requirement of the ESIA process, stakeholder consultation meetings are to be conducted with various groups identified in the project area.

The main objectives of the consultation are to introduce the proposed project to stakeholders, solicit inputs from stakeholders on the design of the project, and gain their support for the project. Consultations will be continued throughout the project life cycle.

Stakeholders will be allowed to access public project information in Liberia (on the website of the RREA) and on the World Bank external website at any time. Stakeholders will also be consulted during the preparation of subsequent environmental and social instruments, such as the ESIA and the SEP, among others. Involvement of stakeholders in the preparation of ESIA will start with the launch of the ESIA process and continue throughout its preparation and implementation. Detailed below are the different requirements of stakeholder consultations throughout the ESIA process.

After the submission of an application for an environmental impact assessment permit, the project proponent should publish a “notice of intent” that states the information that may be necessary to allow the stakeholders or any interested party to identify their interest in the proposed project or activity. This information should include: the nature of the project, its related activities, its timeframe, and its site of operation, and the area that may be impacted.

Before preparing the ESIA document, the project proponent would conduct public consultations with the potential affected stakeholders. This procedure is called the “scoping process,” which aims to: 1) inform the stakeholders about the project’s details, its potential impacts on the physical, biological, and socio-economic environments, and the mitigation measures that can be taken to minimize these impacts, and 2) get the stakeholders’ input on the various related issues. By achieving this, the scoping process is also a guiding tool for the project proponent and its consultants. It helps them in identifying the project’s impacts, mitigation measures, and alternatives, which will form the essential part of the ESIA document. The scoping process consists of publishing the project’s details in the affected district’s media, holding public meetings to consult directly with the affected communities and stakeholders, and incorporating the views of these stakeholders in the scoping report, which is submitted to the EPA.

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On the completion of the ESIA study report, the public is invited again to participate in the ESIA review through public consultation meetings. The public's views on the ESIA are taken into consideration by the EPA when deciding whether to approve or reject the project. In some cases, the

EPA may also decide to hold a public hearing about the project in order to enhance public participation. Those cases may include, but are not limited to: requests by the public for a public hearing, controversy about the project, or expiry of the period stipulated for receipt of comments.

13.2. Process for Public Consultation in the ESMF

In view of the scope of interventions along with provisions under the Bank's ESS1 requirements, the proposed project's inherent environmental and social risks and impact are rated Substantial. As such, an inclusive draft Stakeholder Engagement Plan (SEP) has been prepared. The SEP includes a Grievance Resolution Mechanism (GRM) to ensure the inclusion and non-discrimination of vulnerable groups. The SEP shall identify all key existing and potential stakeholders, and will describe, among others, their level of interest, influence, and support for the project and in its planning and implementation. It describes means, timelines, and frequency of communication with each stakeholder/stakeholder group, grievance mechanisms to be deployed, and monitoring and reporting. The SEP shall be disclosed in-country and at the Bank prior to project Appraisal. Together with the ESIA/ESMPs and the LMP, the SEP will form part of the environmental and social management instruments of the project.

The SEP will ensure that the project carries out meaningful consultations with various stakeholders (including project-affected communities, women and youth groups, NGOs, line ministries, community-based groups, and other vulnerable and disadvantaged members of the communities throughout the project life cycle. Stakeholders will be provided with an accessible and inclusive GM to raise issues and grievances, which will allow RREA to receive, respond to, facilitate the resolution of concerns, and manage grievances. The RREA will ensure that all stakeholder consultations are accessible and inclusive (in format and location), and that these consultations will be appropriate for the local context. Such stakeholders will be provided with timely, relevant, and understandable information in a culturally appropriate format. Overall, the consultations would:

- Learn about the community needs and preferences with respect to the project objectives;
- Identify and agree on options that have relatively less impact on affected people
- Discuss the environmental and social risks and impacts that might be associated with the suggested options, along with the impact mitigation guidelines and measures adopted in the ESMF;
- Discuss compensation plans;
- Have the community identify grievance redress mechanisms for resolving project design and implementation concerns;
- Determine the main pillars of a communication/consultation strategy that will be adopted throughout the project phases, and
- Determine options for engaging the local community and NGOs in the operation.
- The public participation should also aim to increase general environmental awareness among the public and various stakeholders regarding the proposed project and thereby addressing their concerns. Additional reasons for involving the public include:

- Public participation is regarded as proper and fair in public decision-making activities.
- Public participation is widely accepted as a way to ensure that projects meet the stakeholders' needs and are suitable for the affected public.
- The project carries more legitimacy and less hostility if potentially affected parties can influence the decision-making process.
- The final decision is 'better' when local knowledge and values are included and when expert knowledge is publicly examined.
- The effectiveness of public participation is measured by the degree of communication, the intensity of contact, and the degree of influence on decision-making.

During the Project and the SEP, public consultations should be carried out with the following stakeholder groups.

13.2.1. Government and regulatory agencies

- Environmental Protection Agency
- Ministry of Mines and Energy
- Ministry of Public Works
- Ministry of Finance and Development Planning
- Liberia Land Authority
- Liberia Energy Regulatory Commission
- Liberia Water and Sewer Corporation
- Liberia Telecommunication Authority
- Ministry of Internal Affairs
- Ministry of Agriculture
- County and District Environmental Committees

13.2.2. Non-Governmental Organizations

- Civil society organizations
- Community-based organizations

13.2.3. Local stakeholders

- Local leaders
- People living near facilities to be constructed by the project
- People whose land is acquired by the project
- People whose livelihoods are affected by the project

13.2.4. Disadvantaged and vulnerable groups

- Elderly
- Individuals with chronic diseases and pre-existing medical conditions
- Persons with disabilities
- Children with special needs
- Women/girls
- Orphans

The SEP shall be disclosed in-country and at the Bank prior to project Appraisal. After the World Bank board project approval, the SEP is expected to be revised and updated within 30 days of the

project's effectiveness date, and continuously updated throughout the project implementation period when required.

13.3. 12.3 Proposed Disclosure Plan

Both the EPA and the World Bank procedures require that an ESIA be prepared and publicly disclosed prior to project appraisal or any other date set in the ESCP. This allows the public and other stakeholders to comment on the possible environmental and social impacts of the project, and the appraisal team to strengthen the frameworks as necessary, particularly measures and plans to prevent or mitigate any adverse environmental and social impacts. Toward this end, the documents will be publicly released through the World Bank external website and in public locations in Liberia (EPA or RREA is recommended). The documents would be made available in English in compliance with the World Bank's Public Consultation and Disclosure Policy. The documents to be disclosed include the ESMF, SEP, GM, and ESCP. Simplified summaries will be made available. A variety of methods of communication will be used to reach the majority of stakeholders. These could include project information brochures, newspaper publications, the project website, workshops, flyers, posters, public meetings, RREA local offices, etc.

1.[14] 1. Patience Awhavbera-National Environmental Assistant, LEC,
2.Dave Saah Sourie-National Gender and Social Safeguard Assistant, LEC.
3.Mathew F. Konai-Head of Environmental and Social Safeguard Management Unit (ESMU), LEC.
4.Abraham Bility-Social Development Officer, RREA.
5.Steve Payma, Business Development Officer, RREA
6.David L. Wiles-Environmental and Social Safeguard Specialist, RREA

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14. ESMF Implementation Budget

Environmental and social mitigation measures have a cost. Below is a preliminary cost estimate, based on a proxy energy project in Liberia and in Nigeria with similar E&S requirements. The scopes of subprojects and their sites are yet to be known, and that creates uncertainty in regard to estimating costs for E&S management and monitoring. The ESMF shall ideally be updated within three months of project effectiveness. The estimated budget is US$ 1,795,700.

Table 20: Estimated Budget to Implement ESMF

Activities	Unit	No. of Units	Unit Cost (US$)	Extended Cost (US$)	Comments
Salaries for three (3) E&S Specialists, including GBV at RREA	Months	60	12,000	720,000	Salaries will be subject to contract renewal based on satisfactory performance and adjusted yearly, taking into account inflation rates throughout project implementation.
Salaries for recruiting three (3) E&S support staff at RREA	Months	60	1,850	410,700	Salaries will be subject to contract renewal based on satisfactory performance
Capacity building for E&S staff of LEC, RREA, MME, EPA, DRE companies, and civil society	L/S	5	115,000	575,000	An estimated 30 trainees from the four institutions for a period of 5 years.
Preparation of the training manual, including the cost of reproduction	L/S	1	15,000	15,000	PIU
Disclosure, implementation & Monitoring of safeguards	L/S	1	15,000	75,000	PIU
Total Cost US$				1795,700	

15. ANNEX

15.1. Sample TOR for the Engagement of an ESIA Consultant

PROJECT TITLE

DATE

I. **Introduction and Background**

This part will be completed at the appropriate time and should provide the necessary information on the context and description of the Project and methodological approaches to be undertaken.

II. Objectives of the study

This section will show (i) the objectives and activities of the project under the Project, and (ii) identify activities that may have environmental and social impacts and require appropriate mitigation measures.

III. The Consultant's Terms of Reference

The consultant's mandate will be to:

Conduct a description of the biophysical characteristics of the environment in which the Project's activities will take place and highlight the major constraints that need to be taken into account at the time of site preparation, construction, and during the installation of equipment, and during the time of operation.

- Assess the potential environmental and social impacts due to project activities and recommend appropriate mitigation measures, including cost estimates.
- Assess the needs for solid and liquid waste collection, disposal, and management in infrastructure, and make recommendations.
- Conduct a review of environmental policies, legislation, and administrative and institutional frameworks; identify any gaps that may exist and make recommendations to address them in the context of the Project's activities
- To examine the conventions and protocols to which Liberia is a signatory in relation to the activities of the Project
- Identify the responsibilities and actors to implement the proposed mitigation measures.
- Assess the available capacity to implement the proposed mitigation measures, and make appropriate recommendations, including training and capacity-building needs and their costs.
- Prepare an Environmental Management Plan (ESMP) for the project. The ESMP shall identify (a) the potential environmental and social impacts resulting from the project activities, taking into account the mitigation measures contained in the ESMF Mitigation Checklist; (b) the proposed mitigation measures; (c) institutional responsibilities for the implementation of mitigation actions; (d) monitoring indicators; (e) institutional responsibilities for monitoring the implementation of mitigation actions; (f) the cost estimate for all such activities; and (g) the timetable for the implementation of the ESMP;
- Public consultations. The results of the environmental and social impact assessment and the proposed mitigation measures will be shared with the public, NGOs, local government and the

private sector working in the area where the activity will be carried out. The minutes of this consultation should be an integral part of the report.

IV. Outline of the report

For the drafting of the ESIA report and its content, the consultant will have to prepare:

- A presentation of the project and the developments, structures and works to be carried out, the justification for the choice of techniques and means of production, as well as its location.
- An analysis of the initial state of the site, and of its environment, including the natural resources of the soil and subsoil, the atmosphere, the agricultural, pastoral, maritime, coastal or leisure areas, the cultural sites and landscapes, and the socio-economic infrastructures and communities --affected by the project.
- This analysis of the initial state of the site, in the event of the existence of negative impacts on the environment linked to a previous activity that the former proponent has not remedied, must describe, quantify and evaluate these impacts prior to the activity that is the subject of the study or the impact notice and the conditions under which the site is in its current state. This assessment must be the subject of a second expert opinion by the Minister for the Environment and the Minister concerned by the activity.
- An analysis of the direct and indirect impacts on the site and its environment relating to the natural resources of the soil or subsoil, the atmosphere, agricultural, pastoral, maritime and coastal or recreational areas, cultural sites and heritage and landscapes, forest and hydraulic resources, safety, hygiene, sanitation and public health and biological balances and, where appropriate, the convenience of the neighborhood (noise, vibrations, odors, biological emissions, etc.) likely to be affected by the works, developments or structures.
- A description of the possible risks to the environment outside the national territory of the planned activity.
- A description of the gaps in technical and scientific knowledge as well as the uncertainties encountered in the development of the necessary information.

The Environmental and Social Management Plan outlining the necessary measures, to eliminate, reduce, and compensate for the harmful consequences of the project on the environment, as well as the estimate of the corresponding expenditure. This plan must necessarily include:

- A clear definition of the measures planned by the proponent to eliminate, reduce and compensate for the adverse environmental impacts of the project.
- Damage figures and pollutant emission rates into the ambient environment
- The execution schedule.
- An estimate of expenses.
- A numerical indication of the expected results in terms of pollution level or nuisance threshold, and at the same time, the legal standards or practices accepted in similar cases.

This Environmental and Social Management Plan must be the subject of an annual declaration by the promoter. This statement must cover the operation of the Plan, the internal audits and the corrective actions taken or to be taken to complete the Plan. This declaration is subject to the approval of the Minister for the Environment, who reports the results to the Minister concerned by the activity.

- A non-technical summary relating to the previous sections intended for the information of the public and decision-makers.

For the authorization of certain activities, a Site Rehabilitation Plan must be drawn up. This Plan must provide, in support of a financial guarantee from a bank represented in Liberian territory, the terms of the restoration and any special developments subsequent to the activity as well as the damage caused by an environmental accident in the event of technical failure or negligence on the part of the developer. This restoration can be considered either as the work progresses or at the end of the project. These activities are:

by order of the Minister for the Environment and the Ministers concerned.

A joint order from the Minister for the Environment and the competent Minister may establish a specific plan for certain works or operations if necessary.

V. Profile of the consultant

The consultant must have extensive experience in the environmental assessment of projects.

VI. Working hours and specialization

The duration of the study will be determined according to the type of investment

15.2. Annex 2: Template for Waste Management Plan

TEMPLATE FOR A WASTE MANAGEMENT PLAN FOR A RENEWABLE ENERGY PROJECT:

1. Introduction
- *Briefly explain the purpose and scope of the waste management plan for the renewable energy project.*
- *Identify the organization responsible for implementing the plan.*

2. Goals and Objectives
- *Define the goals and objectives of the waste management plan.*
- *Explain how the plan aligns with any relevant laws or regulations.*

3. Waste Streams
- *Identify the types of waste generated by the renewable energy project (e.g. construction waste, equipment waste, hazardous waste).*
- *Describe how each waste stream will be managed.*

4. Collection and Transportation
- *Describe the methods used for collecting quantifying, and transporting waste from the project site.*
- *Explain how the waste will be segregated and stored prior to collection.*

5. Treatment and Disposal
- *Describe the methods used for treating and disposing of the waste.*
- *Explain how the waste will be disposed of in compliance with relevant laws and regulations.*
- *Identify any opportunities for recycling or reusing materials generated by the renewable energy project.*

6. Monitoring and Reporting
- *Explain how the waste management plan will be monitored and evaluated for effectiveness.*
- *Describe the methods used for reporting on the progress of the plan.*

7. Education and Training
- *Describe the education and training programs that will be implemented to ensure compliance with the waste management plan.*
- *Identify the target audiences for these programs.*

8. Conclusion
- *Summarize the key points of the waste management plan for the renewable energy project.*
- *Provide any necessary acknowledgements.*

Note that this is just a basic template, and you may need to modify it to suit your specific needs and requirements. Also, depending on the complexity of your renewable energy project, you may need to provide additional details and sections to the plan.

15.3. Annex 3: Sample ToR for Development of a Health and Safety Template

1. INTRODUCTION

2. OBJECTIVES OF CONSULTANCY

The objectives of this consultancy are to:

- Create a template document to develop their own Health and Safety Plan
- Create this document in compliance with the relevant aspects of the World Bank ESS and the country National Environment Act
- Reporting responsibility
- The issues and mitigation to be covered in the plan
- The context for preparing this H&S Plan

3. SCOPE OF WORK

This Consultancy will require the engagement of a consultant with a background in Disaster Management, Business Management and Plan Development/Project Management. The use of digital conversion methods of the layout and production of the template are expected.

The Consultant will be required to:

a) Develop content for the Health and Safety Plan Template for Businesses

b) Provide appropriate formatting and simplified language that can be accessed and understood by a wide range of persons

c) Provide an easy-to-follow layout of the Template for business

d) Facilitate a local consultation with approved stakeholders to test and evaluate

the Health and Safety Plan Template for Businesses; and

e) Finalize the Health and Safety Plan and prepare for handover to PIU and RCU

More specifically, the Consultant will:

3.1 Prepare an Inception Report with a Work Implementation Plan that demonstrates a clear understanding of the assignment, detailing:

i. The Proposed Work Schedule with timelines and methodology

ii. Proposed Budget; and iii. List of materials or resources required for the Consultancy.

3.2 Review and research relevant literature to support the development of suitable content for the Health and Safety Plan

3.3 Prepare activities for inclusion in the Health and Safety Plan for the project with guidance and input from relevant stakeholders

3.4 Enhance and finalize the Health and Safety Plan for the project through a process that includes:

i. Consultation with all stakeholders, contractors, the EPA, the Ministry of Labor, local authorities, private sectors

ii. There should be direct referencing to the World Bank relevant ESS, the Labor Code of the country, Health, Safety and Welfare

iii. The selection of formatting that allows the plan to be processed and accessed by a wide variety of media/technology

iv. Testing of the plan using an Exercise/discussion/debate that challenges/examines the versatility of the plan by introducing a wide variety of possible approaches and clients

v. Presentation of the Final plan to the employer

4. DELIVERABLES

4.1 Inception Report with Work Implementation Plan

4.2 Pre-final Draft for testing

4.3 Comments coming out of the discussion designed to test the plan

4.4 Final Health and Safety Plan

5. **INPUTS OF THE EMPLOYER:** The Rural Electrification Agencies will provide:

i. Relevant literature or documentation that the Consultant may require

ii. Technical comments and feedback on the output of the Consultancy

iii. Logistical support for convening meetings

iv. General oversight in the roll out of the consultancy

6. CONSULTANT PROFILE

The Consultant should have the following skills:

Qualifications and Experience:

1. A minimum of Seven-Ten10 (7-10) years of experience in Emergency Response/Disaster Management

2. A minimum of five (5) years of experience in Safety, Environmental Management or a related field

3. A minimum of five (5) years of experience in Health and Safety, and Environment (HSE) Plan Development/Project Management, or a related field.

Knowledge and Skills:

1. Demonstrated knowledge and skills in the facilitation of stakeholder consultation

2. Demonstrated analytical and research skills in the field of Disaster Management/Emergency Response; 3. Demonstrated knowledge of the World Bank ESS and local labor procedures in general

4. Ability to manage assignments effectively – consistently ensuring timeliness and quality of work with minimum supervision

5. Strong communication, documentation and presentation skills. The Technical Proposal should indicate at minimum:

1. Proposed approach to be taken for the rollout of the consultancy

2. Evidence of stakeholder participation in the development of the proposed documents

3. Timelines and methodology

4. Curriculum Vitae of consultant and for each member of the team (if a team approach is utilized).

Note: The financial proposal should have a detailed budget breakdown with man days for each team member identified.

7. INDICATIVE TIMEFRAME

Health and Safety plans		**Time frame** (weeks/months) (w – weeks, m =month)
1	Inception report	2 weeks
2	Research/stakeholders' consultations	1.5 month
3	Content, Layout, Design of the plan	1 month
4	Consultation with employer and presentation	2 weeks
5	Draft report for comments?	2 weeks
5	Presentation of final Report	1 week
Total	3 months and 3 weeks	

Note: All other expenses are to be included in the financial report.

8. DURATION

The Consultancy is estimated to be no more than 4 months in total

9. APPLICATION

Interested persons should submit a proposal based on the Terms of Reference outlined.

above complete with:

i. Full Curriculum Vitae (with two professional references)
ii. Proposed work schedule and description of approach/methodology for performing the assignment.
iii. Demonstrated knowledge and skills in stakeholder participation techniques, as well as strong communication, documentation, and presentation skills.
iv. A Technical Proposal should be submitted to include at minimum the proposed approach to be taken to roll out the consultancy, evidence of stakeholder participation in the proposed documents, timelines, and Curriculum Vitae of the consultant and for each member of the team (if a team approach is utilized)

15.4 Annex 4: Sample Grievance Register Form

Name (Filer of Complaint): _____

ID Number: _____ (PAPs ID number)

Contact Information: _____ (Village; mobile phone)

Nature of Grievance or Complaint:

_____

_____

Date	**Individuals Contacted**	**Summary of Discussion**
_____	_____	

Signature: _____ Date: _____

Signed (Filer of Complaint): _____

Name of Person Filing Complaint: _____ (if different from Filer)

Position or Relationship to Filer: _____

Review/Resolution

Date of Conciliation Session: _____

Was Filer Present?: Yes No

Was field verification of complaint conducted? Yes No

Findings of field investigation: _____

_____

_____

Summary of Conciliation Session Discussion: _____

_____

_____ Issues _____

_____

Was agreement reached on the issues? Yes No

If agreement was reached, detail the agreement below:

_____

If agreement was not reached, specify the points of disagreement below:

_____

Signed (Conciliator): _____ Signed (Filer): _____

Signed: _____

Independent Observer

Date:_____

15.5 Annex 5: Environmental and Social Screening Checklist

The Environmental and Social Screening (ESSC) checklist has been designed using the World Bank Environmental and Social Standards, as checklist benchmarks to assist in the evaluation of proposed sub-projects under the RCU and PIUs. The checklist is designed to place information in the hands of reviewers so that mitigation measures, if any, can be identified and/or that requirements for further environmental analysis be determined. The ESSC also identifies potential socioeconomic impacts that will require mitigation measures.

Table III-1. Environmental and Social Screening Checklist

Issues		Site Sensitivity		Responsibilities
	Low	Medium	High	
Natural Habitats	No natural habitats are present	No critical natural habitats; other natural habitats occur	Critical natural habitats present	RCU, PIUs Contractors
Water quality and water resource availability and use	Water flows exceed any existing demand; low intensity of water use; potential water use conflicts expected to be low; no potential water quality issues	Intensity of water use; multiple water users; water quality issues are important	Intensive water use; multiple water users; potential for conflicts is high; water quality issues are important	RCU, PIUs Contractors
Natural hazards vulnerability, floods, soil stability/ erosion	Flat terrain; no potential stability/erosion problems; no known volcanic/seismic/ flood risks	Medium slopes; Some erosion potential; medium risks from volcanic/seismic/ flood/ hurricanes	Mountainous terrain; steep slopes; unstable soils; high erosion potential; volcanic,	RCU, PIUs and Independent Consultants

			seismic, or flood risks	
Cultural Property Involuntary resettlement	No known or suspected cultural heritage sites Low population density; dispersed population; legal tenure is well- defined water rights	Suspected cultural heritage sites; known heritage sites in broader area of influence tenure; well-defined water rights	Known heritage sites in projects are Land issues, High population density; major towns and villages; low-income families and/or illegal ownership of land; communal properties; unclear water rights	RCU, PIUs Contractors

1. Site Selection:

When considering the location of a sub-project, rate the sensitivity of the proposed site in the following table according to the given criteria. Higher ratings do not necessarily mean that a site is unsuitable. They do indicate a real risk of causing undesirable adverse environmental and social effects, and that more substantial environmental and/or social planning may be required to adequately avoid, mitigate, or manage potential effects

2. Checklist questions:

Physical data:	*Yes/No answers and bullet lists preferred except where descriptive detail is essential.*

Site area in ha

Extension of or changes to existing alignment

Any existing property to transfer to sub-project

Any plans for new construction

Preliminary Environmental Information:	*Yes/No answers and bullet lists preferred except where descriptive detail is essential.*		
State the source of information available at this stage (i.e., proponent's report, National Environment Agency, or other environmental study)			
Has there been litigation or complaints of any environmental nature directed against the proponent or sub-project?			
Identify types of activities and likely environmental impacts:	*Yes/No answers and bullet lists preferred except where descriptive detail is essential.*		
What are the likely environmental impacts, opportunities, risks, and liabilities associated with the sub-project?			
Determine environmental screening category:	*Bullet lists are preferred except where descriptive detail is essential.*		
After compiling the above, determine which category the subproject falls under based on the World Bank environmental categories (High, Substantial, Moderate and Low) and the National Environment Act of the countries of this phase of the Program.			
Mitigation of Potential Pollution:		*Yes*	*No*
Does the sub-project have the potential to pollute the environment or contravene any environmental laws and regulations?			
Will the sub-project require pesticide use?			

If so, then the proposal must detail the methodology and equipment incorporated in the design to constrain pollution within the laws and regulations and address pesticide use, storage, and handling		
Does the design adequately detail mitigating measures?		
Environmental and Social Assessment Report on environmental and social studies required:	*Yes/No answers and bullet lists preferred except where descriptive detail is essential*	
If screening identifies environmental and social issues that require an ESIA or a study, does the proposal include the ESIA or study?		
Indicate the scope and time frame of any outstanding environmental study.		
Required Environmental Monitoring Plan:		
If the screening identifies environmental issues that require long-term or intermittent monitoring (e.g., effluent, gaseous discharges, water quality, soil quality, air quality, noise), does the proposal detail adequate monitoring requirements?		
Public participation/information requirements:	*Yes/No answers and bullet lists preferred except where descriptive detail is essential.*	
Does the proposal require, under national laws, the public to be informed, consulted, or involved?		
Has consultation been completed?		
Indicate the time frame of any outstanding consultation process		
Land and resettlement:	*Yes/No answers and bullet lists preferred except where descriptive detail is essential.*	
What is the likelihood of land purchase for the sub-project?		
How will the proponent go about land purchase?		
What level or type of compensation is planned?		
Who will monitor actual payments?		

Actions:	
List outstanding actions to be cleared before sub-project appraisal	
Approval/rejection	*Yes/No answers and bullet lists preferred except where descriptive detail is essential.*
If proposal is rejected for environmental reasons, should the sub-project be reconsidered? What additional data would be required for re-consideration?	

15.4. Annex 6: Waste and Batteries Disposal Management Approach

In Africa, many countries and communities are already struggling with contaminated sites and soil pollution from unregulated car battery recovery and recycling. Unsound end-of-life management and recycling can cause severe and even fatal lead poisoning of people working in the battery recycling sector. The health of people living around small and industrial scale leads to smelters, in particular children, and is severely impacted on life. A recent report by the Lead Recycling Africa Project revealed that every year, more than 1.2 million tons of used lead-acid batteries and 800,000 tons of lead require sound management in Africa.

Environmentally, when disposed of alongside household trash, batteries end up in landfills/waste dumps. As the battery casing corrodes, chemicals leak into the groundwater from where they contaminate the water bodies. Acid and lead particulates also contaminate the soil and become airborne when dry. Health-wise, cadmium and nickel are known human carcinogens, lead has been linked to birth defects and to neurological and developmental damage, and mercury is also highly toxic, especially in vapor form. Excessive levels of lead can affect a child's growth, cause brain damage, harm kidneys, impair hearing and induce behavioral problems, and in adults, lead can cause memory loss and lower the ability to concentrate as well as harm the reproductive system.

To regulate waste management of such toxic substances, on the international level, the Basel Convention25 is very important. Furthermore, the Secretariat of the Basel Convention has set up guidelines for the safe treatment of used lead acid batteries. Drawing on the principles of environmentally sound management, the convention seeks to protect human health and the environment from the risk posed by hazardous waste. This will require changing the economic equation for waste in order to motivate the producers of hazardous waste and people who benefit from the associated goods to act. To do this, the convention sets out a three-steps strategy (UNEP 2002):

1. Minimizing the generation of waste.
2. Treating waste as near as possible to where it was generated.
3. Minimizing international movements of hazardous waste.

[25] http://www.worldwidehelpers.org/wwhweb/uploads/files/KnO-100398_Recycling%20batteries.pdf

The Technical Guidelines for the Environmentally Sound Management of Waste Lead-acid Batteries (source: www.basel.int) offer managers a set of best practices and principles for setting up effective systems for recycling batteries. They describe how to collect, transport and store used batteries; give specifications for the storage chambers and transport facilities; describe how batteries delivered to the recycling plant should be drained of their electrolytes, identified, segregated, and stored; explain how the recovered lead must be refined in order to remove unwanted contaminants; and address medical issues and public awareness. The Guidelines conclude that the most effective approach to collection is to rely on manufacturers, retailers, wholesalers, and service stations to retain old batteries at the time new ones are provided to the customer.

Generally speaking, good practice of lead-acid battery recycling includes:[26]

- Segregated work areas, so that process areas do not contaminate non-process or eating areas
- Comprehensive Health and Safety Polices
- Medical surveillance for all operating personnel exposed to lead operations.
- Waste water treatment facilities
- Emission control procedures
- Solid Waste Management of all smelting by-products and residues.
- A community outreach program that keeps the surrounding population aware of the secondary lead operations through effective two-way communications.

World Bank provides general guidance on waste recycling and reuse in its Environmental, Health, and Safety Guidelines. The following elements should be considered during battery recycling:

- Evaluation of waste production processes and identification of potentially recyclable materials
- Identification and recycling of products that can be reintroduced into the manufacturing process or industry activity at the site.
- Investigation of external markets for recycling by other industrial processing operations located in the neighborhood or region of the facility (e.g., waste exchange)
- Establishing recycling objectives and formal tracking of waste generation and recycling rates
- Providing training and incentives for employees in order to meet objectives.

The National Environment Agencies should formally certify battery recyclers, so the developers can bring used batteries to more regulated places. It should also provide a platform to connect the recyclers and the developers. Other suggested regulatory policies include:

- Enforce a ban on export of battery plates and crude lead ingots (scrap metals);
- Control indiscriminate processing of used batteries; and
- Control dumping of substandard batteries, especially Chinese ones.

Some developed countries and areas have comprehensive battery recycle regulations that can be learned form, such as:

[26] http://www.ilmc.org/Presentations/ABC/Recycling%20Used%20Lead%20Acid%20Batteries%3B%20A%20Model%20Life%20Cycle%20Approach.pdf

- Channel Islands: In early 2009 Guernsey took the initiative by setting up the Longue Hougue recycling facility which among other functions offers a drop-off point for used batteries so they can be recycled off island.
- United Kingdom: An EU directive on batteries that came into force in 2009 - Requires Producers to pay for the collection, treatment, and recycling of batteries.
- North America: The rechargeable battery industry has formed the Rechargeable Battery Corporation (RBRC), which operates a free battery recycling.
- European Union: In 2006 the EU passed the Battery Directive - one of the aims is a higher rate of battery recycling. The EU directive gave targets of 25% for 1st year, 45% after another 4 years.

For PIUs and RCU to better assist their National Environment Agencies and DARES participating in mini grid developers and SHS distributors to recycle used solar panel batteries, it should:

- Conduct research by administering questionnaire on the issue of solar panel lead-acid battery usage and recycling in the respective countries
- Actively engage with National Environment Agencies on the regulatory side to improve national level regulations/policies, more specifically, to establish safe/ certified recycling facilities, regulations for recyclers (in 2-3 years when first wave of batteries come)
- Establish RCU and PIUs' own standard / guideline for led acid battery recycling, including articulated standard for what is "safe recycling" based on international guidelines
- Develop a list of approved recyclers and request mini grid developers that are part of WB-supported program to use only those; and
- Articulate and support steps for capacity building of recyclers.
- RCU and PIUs must see that SHS batteries must be ISO certified by the Standard Organization
- Ensure SHS contractors must have ability to protect their workers, hence, make sure they show proper storage facilities for batteries and other solar components.

15.7 Annex 7: Sample Questionnaire for Lithium-Ion Batteries Management

Name of Respondent:

Location:

Phone Number:

1. **QUANTITIES AND COSTS OF LIBs:**

A. How many LI Batteries do you need to power a solar panel?
B. How do you intend to process used LI batteries?
C. How much do you buy?
D. Do you supply others in the sector?
E. How do you sell and to whom?
F. How are LI batteries delivered to you?
G. How are they Transported and what is your storage capacity?
H. How much does it cost to store LIB?

2. **END PRODUCT OF LIB RECYCLING:**

A. What products do you intend to extract from the LI battery?
B. Do you have an established process that could be applied?
C. Do you intend to sell the end product locally or internationally?
D. To whom do you intend to sell these end products?

3. **HEALTH, SAFETY AND POLLUTION CONTROL**

A. Would you consider this business dangerous to your health and environment?
B. How long have you been in this business?
C. Have you observed any health challenges?
D. What other waste does the business produce?
E. How do you intend to dispose of or manage the(se) other waste(s)?

4. **WILLINGNESS TO INNOVATE AND MODERNIZE**

A. Do you think your current practice meets international best practice?
B. Are you in discussion with your supplier about a buyback mechanism?
C. What aspects of your business, particularly the end-of-life battery management, do you think can be developed further to assist you?
D. In your estimation, how big do you think LIB recycling would become?
E. How many people do you employ currently?
F. What are your major challenges?

15.8 Annex 8: Sample TOR for Consultancy Services for an Environmental and Social Compliance Audit

1. INTRODUCTION/BACKGROUND

2. ENVIRONMENTAL AND SOCIAL COMPLIANCE AUDIT

Periodic audits of compliance with ESMPs and national law by RCU and PIUs and project contractors are needed to ensure adequate implementation of the mitigation measures for the E&S risks. The exact criteria used for the audit will be based on the content of the ESMPs that will be prepared by RCU and PIU as a result of E&S impact assessment process.

An E&S compliance audit shall be conducted through an independent external agency in accordance with these terms of reference. The audit shall be conducted by a qualified E&S auditor/ inspector/ firm with in-depth technical knowledge of the electricity transmission sector.

The objectives of E&S compliance audit will be to evaluate project activities, specially taking into account E&S regulatory frameworks, World Bank E&S standards, and environmental health and safety measures. Specifically, the objectives of the audit are:

i. To ensure compliance with the Liberia national and local laws/regulations, World Bank E&S requirements, and other requirements (if any) as set out in the ESMF;
ii. To assess progress by Contractors in implementing the ESMP;
iii. Provide expert opinion supported by field observations on the effectiveness of the measures that have been implemented;
iv. Identify mitigation or monitoring measures that don't achieve desired results and need to be modified or replaced;
v. To advise on the financial implications related to implementation of E&S mitigation measures in terms of additional capacity strengthening that may be needed to facilitate necessary improvements;
vi. Recommend changes or additions to the ESMF, if needed;
vii. Recommend measures that will ensure compliance with best practices required for ISO 14001, ISO18001 and ISO 9001 certification; and
viii. Monitor the implementation of the measures/actions above.

Based on the findings of the audit, REA will commit to systematic incorporation of suggested improvement into its E&S risk management model.

3. CONSULTANTS' QUALIFICATIONS

The prospective Consultant should demonstrate the ability to carry out this audit with proven capability of studying and producing consistent high-quality reports and also ensure that all specific tasks in this TOR are adequately addressed in the report, with a minimum of 15 years on the job experience in the field of the assignment. The Consultant will be responsible for the overall process and also ensure that all specific tasks of the ToR are addressed satisfactorily in the report.

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The eligible Consultant(s) must have the following qualifications of the personnel within the consulting team:

i. Master's degree in environmental sciences or any relevant science degree (PhD will be an added advantage)
ii. 10 years' experience in carrying out similar assignments with another World Bank financed project
iii. Certified Environmental Auditor
iv. Certified OHS Auditor
v. Experience in Health, Safety and Environmental Auditing of Electric Utility.
vi. Good knowledge of International and Local Environmental, Health and Social legislation for the Power Sector
vii. Certification with reputable international Environmental, Health/Safety and Social institutions e.g. (NEBOSH, IEMA, etc.)

4. DURATION OF WORK AND REPORTING

Duration: This assignment shall be completed within a period of 4 years commencing immediately after contract signing. The Consultant is expected to conduct semi-annual audits over the 4 years, and spend at least three weeks on the project sites each time and in consultations with all relevant stakeholders to gather all necessary primary information.

Reporting: The Consultant shall report to and work in close contact with E&S unit of the RCU and the PIUs and report to the Senior Environmental and Social Specialists of those institutions.

5. DELIVERABLES/PAYMENT PLAN

A comprehensive and fully referenced Report including detailed recommended actions for implementation, must be submitted at the end of the assignment. The Report must contain an in-depth analysis of the issues described in the objectives and should propose clear, implementable measures towards achieving the set goals of the assignment.

s/n	Activity	Timeline *(After contract signing)*	*Payment (% of Total Remuneration)*
1.	**Acceptable Inception Report: -** This should include methodology and work plan with clearly defined strategy for carrying out the assignment with timelines for the various outputs. The report should: a. indicate the objective, scope and criteria of the audit b. contain an audit plan for the on-site activities c. contain the audit questionnaires	Week 4	10

s/n	Activity	Timeline *(After contract signing)*	*Payment (% of Total Remuneration)*
	d. contain Audit Plan and logistics: - Audit scope - Audit schedule - Audit protocols - Allocated resources. This should be presented in person by the Consultant at the REA-PMU office. Consultant must submit (3) hard copies and a soft copy of the inception report.		
2.	**Institutional Framework Analysis Report: -** An update on the current status of the assignment. This should be presented in person by the Consultant at the RCU-PIU office. These reports should contain the Consultant's expert analysis of the following documents and outline the areas of conflict/lapses, while proffering the best options for compliance to achieve the objectives of the assignment: • RCU-PIUs internal environmental policies, procedures and guidelines • RCU-PIU's quarterly monitoring reports • Site layout plans for Subprojects and Transmission Lines • Site history, usage and activities • Organizational structure • DARES ESMF/ESMPs • DARES RPF • ESMPs for subprojects/transmission line project Review of Operational information: • Operational activities and process description • Management system policies, procedure and program documentation	Week 10	10

s/n	Activity	Timeline *(After contract signing)*	*Payment (% of Total Remuneration)*
	• Relevant records (compliance, monitoring, training etc.) • Other relevant information pertaining to environmental and social risk management practices.		
3.	**On-site Audit Activities** The on-site audit objectives should reflect those of the environmental and social compliance audit, and include: ***In-depth document review*** • Management policy • Management system documentation • Operational procedures • Records (utility, inventory, monitoring, calibration, transportation, training etc.) • Previous audit reports. ***Conduct on-site meetings:***	As determined by the Audit Plan (at least three weeks during each 6-month audit period)	10

s/n	Activity	Timeline *(After contract signing)*	*Payment (% of Total Remuneration)*
	• Present audit scope and objectives • Outline the audit approach and methodology • Address questions or concerns of site personnel ***Conduct detailed site inspections with the aid of on-site audit protocols to look for evidence of:*** • Legislative and regulatory compliance • Internal policy and procedural conformance • Establishment of current practice status • Identification of improvement opportunities • Status of operational practice • Staff participation in management system. ***Conduct staff interview at RCU-PIUs offices to obtain information on*** • Actual E&S practices (current and past) • Compliance with/or deviation from statutory and departmental requirements • Awareness of requirements and expectations. ***Review audit evidence to ensure its adequacy at the conclusion of on-site audits by:*** • Reviewing information gathered • Collecting additional information as needed		

s/n	Activity	Timeline *(After contract signing)*	*Payment (% of Total Remuneration)*
	• Substantiating audit findings • Summarizing and documenting all findings and observations • Identifying issues requiring immediate attention/mitigation • Noting outstanding issues require follow-up. ***Conduct closing meetings: The closing meetings provide an opportunity at the conclusion of on-site audit to:*** • Debrief relevant REA management • Summarize the audit activities and findings • Highlight system strengths and weaknesses • Discuss preliminary findings and recommended corrective actions • Bring up findings requiring immediate attention; and • Clarify any outstanding issues.		
4.	**Annual Audit Report:** The post audit activities aim to produce an audit report, according to the sample outline presented in section 10.2, with audit findings and recommendations and to contribute towards formulation of a corrective action plan for continual performance improvement. The activities will focus on collating the information and follow-up on outstanding issues, as follows: • Completed pre-audit questionnaire, operational document checklists	**Every 12 months**	**10x4**

s/n	Activity	Timeline *(After contract signing)*	*Payment (% of Total Remuneration)*
	• Completed on-site survey questionnaires, on-site audit protocols • All relevant correspondence, memoranda, reports, diagrams and drawings • Copies of records, photographs, and other information collected during the site visits • Detailed inspection and interview notes and summaries. • Detailed list of findings and recommendations for improvement.		
5.	**Final E&S Audit Report**: Final audit report will be produced at the end of the assignment and include a detailed summary of all findings, recommendations, and improvements achieved over the 4-year assignment.	**Year 4**	20

6. SCOPE OF THE AUDIT

The audit must be carried out on the ESMPs (where they were prepared, as needed) for the existing facilities and will focus broadly on two elements:

- Compliance of existing facilities and operations with relevant environmental (including ESMS, occupational health and safety) and social laws, regulations, and applicable World Bank E&S requirements and
- The nature and extent of environmental and/or social impacts as a result of past/on-going activities under the project.
- Result of consultation with stakeholders.
- Functioning of the GRM -----

The scope and depth of the audit or review should be commensurate with the E&S risks impacts. A corrective action plan will be developed if the E&S compliance audit finds that negative but manageable impacts may occur as a result of continuing implementation of on-going activities or implementation of new proposed investments. The action plan may call for improvements of existing ESMPs, as relevant, to address the impacts that are identified based on the audit.

The action plan should also include measures to inform potentially affected people of the nature of transactions, potential impacts, mitigation measures, and Grievance Mechanisms (GM) as necessary. The action plan should be subsequently incorporated in the investment agreement with Contractors and made a condition of the investment.

The statutory (legal and administrative) frameworks within which the consultancy activities shall be executed are provided in the following regulations, guidelines, and standards (Note: these regulations are not exhaustive):

- The World Bank Environmental and Social Standards and Environmental Health and Safety Guidelines.
- The regulations, guidelines, and standards of the National Environment Agencies.
- The regulations, guidelines, and standards of the EPA of Liberia concerning power generation and transmission activities in the participating countries.
- The regulations, guidelines, and standards of the Ministry of Gender and Social Welfare.
- All International Conventions/Treaties on Environmental Protection/Social Welfare to which countries are a party.

Throughout the duration of the Assignment, the Consultant shall maintain effective communication with relevant Regulatory Agencies/Stakeholders at the National and Local Government levels on the proposed Project. The Stakeholders shall include the following:

- Environmental Protection Agency (EPA)
- Liberia Land Authority (LLA)
- Ministry of Gender, Children and Social Protection
- Ministry of Labour
- Ministry of Mines and Energy
- Respective County Superintendencies and District Commissioners
- County and District Environmental Committees (EPA)
- Community Based Organizations, (Civil Society, NGOs) in the affected Counties.
- Project Affected Persons (PAPs)

The audit shall be divided into three phases: (i) pre-audit activities; (ii) on-site audit activities; and (iii) post-audit activities.

1. Pre-audit activities

The pre-audit activities aim to develop an audit plan for the on-site activities and make the necessary preparation and arrangements for the on-site audit. The tasks at this stage are to:

i. Indicate the objective, scope and criteria of the audit
ii. Develop an audit plan for the on-site activities
iii. Prepare audit questionnaires
iv. Review background information:
    a. RCU and PIUs internal environmental policies, procedures and guidelines
    b. RCU and PIUs quarterly monitoring reports
    c. Site history, usage and activities

d. Organizational structure
e. DARES ESMF
f. DARES ESIAs
g. ESMP for Subprojects

v. Review operational information:
   a. Operational activities and process description
   b. Management system policies, procedure and program documentation
   c. Relevant records (compliance, monitoring, training etc.)
   d. Other relevant information pertaining to environmental and social risk management practices.

vi. In close collaboration with the RCU and PIUs team, conduct initial site visits to a sample of Subprojects as part of determining the scope of the audit:
   a. Meet with Officers-in-charge to explain purpose of audit
   b. Assess whether background information gathered is up to date and accurate
   c. Follow-up on the list of preliminary audit impressions
   d. Identify and request additional site information as necessary
   e. Confirm adequacy and appropriateness of audit scope
   f. Establish adequacy of resources for audit.

vii. Develop on-site questionnaires and audit protocols

viii. Review Audit Plan and arrange logistics:
   a. Audit scope
   b. Audit schedule
   c. Audit protocols
   d. Allocated resources.

2. On-site Audit Activities

The on-site audit objectives should reflect those of the environmental and social compliance audit, and include:

a) In-depth document review

- Management policy
- Management system documentation
- Operational procedures
- Records (utility, inventory, monitoring, calibration, transportation, training etc.);
- Previous audit reports.

b) Conduct on-site meetings:

- Present audit scope and objectives
- Outline the audit approach and methodology
- Address questions or concerns of site personnel
- Rally staff support and assistance.

c) Conduct detailed site inspections with the aid of on-site audit protocols to look for evidence of:

- Legislative and regulatory compliance
- Internal policy and procedural conformance
- Establishment of current practice status
- Progress and quality of ESMP
- Identification of improvement opportunities
- Status of operational practice
- Staff participation in management system.

d) Conduct staff interview at REA regional offices to obtain information on

- Actual E&S practices (current and past)
- Compliance with/or deviation from statutory and departmental requirements
- Awareness of requirements and expectations.

e) Review audit evidence to ensure its adequacy at the conclusion of on-site audits by:

- Reviewing information gathered
- Collecting additional information as needed
- Substantiating audit findings
- Summarizing and documenting all findings and observations
- Identifying issues requiring immediate attention/mitigation
- Nothing outstanding issues require follow-up.

f) Conduct closing meetings: The closing meetings provide an opportunity at the conclusion of on-site audit to:

- Debrief relevant RCU and PIUs management
- Summarize the audit activities and findings
- Highlight system strengths and weaknesses
- Discuss preliminary findings and recommended corrective actions
- Bring up findings requiring immediate attention
- Clarify any outstanding issues.

3. Post-audit activities

The post audit activities aim to produce an audit report with audit findings and recommendations and to contribute towards formulation of a corrective action plan for continual performance improvement. The activities will focus on collating the information and follow-up on outstanding issues, as follows:

- Completed pre-audit questionnaires, operational document checklists
- Completed on-site Survey questionnaires, on-site audit protocols
- All relevant correspondence, memoranda, reports, diagrams and drawings
- Copies of records, photographs, and other information collected during the site visit
- Detailed inspection and interview notes and summaries.

7. SAMPLE OUTLINE OF THE ANNUAL AUDIT REPORT

An audit report shall include but shall not be limited to the following information:

a) An Executive Summary

b) Introduction and Background of the Audit

c) Audit Scope and Objective

d) Description of Audit Approach and Methodology

e) Summary of Audit Findings:

- The past and present impacts of the project
- The responsibility and proficiency of the operators of the project
- Existing internal control mechanisms to identify and mitigate activities with a negative environmental impact
- Existing internal control mechanisms to ensure the workers' health and safety; and
- The existence of environmental and social awareness and sensitization measures, including environmental and social standards, and regulations, law, and policy, for the managerial and operational personnel.

f) Recommendations and Conclusions

15.5. Annex 9: Indicative ESMP Table of Contents

ESMP Template

Title Page **Table of Contents** **List of Tables** **List of Figures** **List of Plates** **List of Acronyms and Abbreviations** **ESMP Preparers** **Executive Summary**	**Chapter One: Introduction** **Overview of the IPP (Independent Power Producer) Project** **ESMP Objectives** **Scope of the ESMP** **ESMP Study Approach** **Legal and Institutional Framework** **Institutional Arrangements for Environmental and Social Management** **Structure of the ESMP**
Chapter Two: Project Justification **Need for the Project** **Project Benefits** **Justification for Site Selection** **Envisaged Sustainability of the Project** **Alternatives Considered within the Context of the Project**	**Chapter three: Project Description** Introduction Project Location Health and Safety Emergency Preparedness Waste Management Project Schedule
Chapter four: Description of the Environmental and socio-economic conditions **Introduction** **Baseline Data Acquisition** **Description of Bio-Physical Environment** **Socio-economic and Health conditions**	**Chapter Five: Associated and Potential Environmental and Social Impacts** Introduction Impact Assessment Overview Determination of Impact Significance Impact Discussions Risk and Hazard Assessment Summary

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Stakeholder Engagement	
Chapter Six: Impact Mitigation Measures **Introduction** **Mitigation Measures Approach** **Mitigation Measures for the Identified Project Risks and** **Enhancement Measures for Identified Positive Impacts**	**Chapter Seven: Environmental and Social Management Plan** Introduction Roles, Responsibilities and Accountabilities for ESMP implementation Environmental Monitoring Program Implementation Schedule and Reporting ESMP Costing
Chapter Eight: Grievance Redress Mechanism **Chapter Ten: Conclusion**	Chapter Nine: Public Consultation and Information Disclosure References Appendices

15.9 Annex 10: Voluntary Land Donation Guidelines

Voluntary land donation is strictly defined in international practice as the ceding of a property by an owner who is: a) fully informed; and b) can exercise free will, i.e., can refuse to sell or to donate. "Fully informed" means that the owner has complete information regarding the proposed activity and its impacts, its land requirements, and its alternate activity sites, as well as his or her rights to compensation. The owner has also been provided with sufficient time to consider his or her disposition of the property, and the owner has knowingly rejected the right to renege on his or her initial decision. "Free will" means that the owner can reject the possibility of giving up his or her land.

VLD should only be authorized if they (a) have affected people as direct beneficiaries; (b) clearly document Informed Consent; (c) clearly document Power of Choice (option of refusal or to sell at prevailing market rate); and (d) meet the VLD guidelines of the project. The guidelines have been put into place to ensure that donations are indeed voluntary, that the donor is the legitimate owner of such lands, and that the donor is fully informed of the purpose of the donation and of the implications of donating the property.[27] If the land is donated on a conditional basis, the terms and conditions for the temporary use of the property must be clearly documented.

The following principles should be complied with when VLD is carried out:

Core principles:

- The land required to meet technical project criteria must be identified by the affected community through a participatory approach and not by the developer, line agencies or project authorities (nonetheless, technical authorities can help ensure that the land is appropriate for project purposes and that the project will produce no health or environmental safety hazards); mini-grids can be sited in any location within a community so long the location meets the technical criteria for the investment
- The proportion of land that may be donated cannot exceed 15 m2 per kW of the proposed generation capacity plus an additional 7.5m2 per kW for future generation capacity expansion.
- Land donation for a single mini-grid or power generation system shall not exceed 10% of the land donor's holdings in cases where land ownership is individual or family.
- Land required above 1,500 m2, whether for initial construction or future generation capacity expansion, can be either leased using a leasehold agreement (using ground rent scale set in Liberia) or bought on wiling-buyer-willing-seller basis at the current local market price in the community.
- Donated land can only be used for power plant construction and future expansion and be fenced off accordingly.

[27] Voluntary land donation is strictly defined in international practice as the ceding of a property by an owner who is: a) fully informed; and b) can exercise free will, i.e., can refuse to sell or to donate. "Fully informed" means that the owner has complete information regarding the proposed activity and its impacts, its land requirements and its alternate activity sites, as well as his or her rights to compensation. The owner has also been provided with sufficient time to consider his or her disposition of the property, and the owner has knowingly rejected the right to renege on his or her initial decision. "Free will" means that the owner can reject the possibility of giving up his or her land.

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- Shall the donated land not be used for power plant construction within three years, the unused land shall be returned to the donor.

Additional requirements:

- Impacts of proposed activities on donated land must be fully explained to the donor.
    - The potential donor is aware that refusal is an option, and that right of refusal is specified in the donation document the donor will sign.
    - The act of donation is undertaken without coercion, manipulation, or any form of pressure on the part of the developer, the public or traditional authorities.
    - The donor may request monetary or non-monetary benefits or incentives as a condition for donation.
    - Donation of land cannot occur if it requires any household relocation.
    - For community or collective land, donation can only occur with the consent of individuals using or occupying the land.
    - Verification must be obtained from each person/ family donating land (either through proper documentation or through confirmation by at least two witnesses)
    - The implementing agency or mini grid developers establish that the land to be donated is free of encumbrances or encroachment and registers the donated land in an official land registry.
    - Any portion of donated land that is not used for its agreed purpose is returned to the donor.
    - The land in question must be free of squatters, encroachers, or other claims or encumbrances.
    - Land thus donated is free from any dispute on ownership, squatters, encroachers, or other claims or any other encumbrances.

Procedure:

Step 1: Determining and Documenting the Appropriateness of VLD for the Subproject

In considering the relevance of VLD for the specific subproject, mini-grid developer will document:

- How much land the subproject would require on both a permanent and temporary basis.
- What the land would be used for
- What alternatives to donation exist (e.g., right of use, right of way, lease, or purchase)
- The proposed terms of any donation of land
- Any other details that are relevant to why donation of land may be appropriate.

Step 2: Official Notification to Landowners regarding the Option for VLD

If it is determined that VLD could be relevant for a subproject, the local authority (e.g., village head) will provide landowners with official written notification of the proposed construction of electricity infrastructure within their area and the associated opportunity for voluntary donation of land.

Step 3: Briefing to Interested Landowners of the Process of VLD

If the landowner indicates to the village head or similar authority that he or she is interested in VLD, they should brief the landowner/village about the process of VLD and explain the VLD form that

would be required to be completed and signed by the landowner/villager and his/her spouse, as relevant. Prior to briefing the interested landowner, the village head should confirm that:

- The interested landholder/villager would not lose more than 10% of his/her total productive assets.
- No physical relocation of the interested landowner/villager and/or his/her family would be necessary.

Step 4: Due Diligence Verification Process to Confirm Land Ownership and Use

If the interested landowner and his/her spouse confirm that they would like to proceed with VLD, the next step is to verify the ownership and use of the land proposed to be donated. The verification process should review available information and documentation regarding: Mini grid developer should:

- The owner or owners of the land
- The users of the land, or any parties that occupy the land (either physically or through ownership of an asset or conduct of livelihood or business activities on the land)
- Any competing claims of ownership or use.
- Structures and assets on the land
- Trees or crops on the land.
- Any encumbrance on the land.

It is important to: (i) identify the right that is being transferred (an ownership right, a use right, a right of way, etc.); and (ii) check whether the donor actually has the right s/he claims to have. In many circumstances where careful due diligence has not been carried out, significant conflict has arisen at a later stage when another party claims that they have the same or a competing right. In some circumstances – but not all – the transferee will have documentary evidence of such right. Where no such evidence exists, due diligence can establish rights by speaking with local community officials and neighbors.

Step 5: Public Consultations and Disclosure

The decision to voluntarily donate land must be taken on the basis of a full understanding of the specific subproject and the consequences of agreeing to donate land. Accordingly, the parties that will be affected by the donation (the owners and users of the land, and the neighbors to the land as appropriate) must be provided with accurate and accessible information regarding what the land will be used for, for how long, and the impact the donation may have on them and their families. Prior written notification indicating the location and amount of land that is sought must be provided and its intended use must be disclosed.

Where the intention is to deprive the parties affected by the donation of the land permanently, or for a significant length of time, this must be made clear. It should be noted that in many communities the concept of alienation of land is uncommon and difficult to understand, and care needs to be taken to ensure that the implications of this are fully understood. It is also important to decide who else, within direct and extended families, should be consulted about the proposed donation of land in advance of it taking place; for example, older children.

Further to this, there should be a clear agreement as to which party/ies will pay the costs associated with the donated land. This could include measurement costs, documentation and notarial fees, transfer taxes, registration fees. It should also include the costs of re-measuring/re-titling the transferee's remaining land and any new documentation relating to it.

Step 6: Establishing Informed Consent

Mini grid developer, in coordination with the village administration, would verify the informed consent or power of choice by landholders who had selected to donate land. In particular, the following would be verified and documented in the voluntary land donation form:

- That the donor has a right to refuse to donate of an option to sell at prevailing market rate
- What the land is going to be used for, by whom and for how long
- That the landowner donating the land would be deprived of the ownership or right to use the land, and what this really means.
- That the landowner has a right to refuse to donate the land
- Whether there are alternatives to using the land
- The process that would need to be followed to donate the land (e.g., execute documents, get spousal consents, pay taxes)
- The effect of the donation on the land donor's family, and what they can do if they (or their family or heirs) decide they want the land back.

The right to refuse must be a legitimate right, unconditional, and the potential transferee must be capable of exercising it in the local community and political context. For this reason, it is important to be sure that the decision to donate is undertaken without coercion, manipulation, or any form of pressure on the part of public or traditional authorities. For collective or communal land, donation must be based upon the informed consent of all individuals using or occupying the land.

Step 7: Preparation of Clear and Appropriate Documentation

While it is important to have evidence of an intention and agreement to donate land, it is equally important to ensure, where required and appropriate, that the land is legally transferred. While the process relating to the legal transfer of the land is frequently complicated and time-consuming, it must be addressed. *[In specific circumstances, for example where the land is being transferred to the community, it may not be necessary to legally transfer the land. However, experience indicates that lack of formal transfer can create significant uncertainty in the future, which impacts on the sustainability of the infrastructure and services and can have a negative effect on community relations.]*

Mini grid developer should:

- Identify the appropriate documentation, including the agreement to make the land transfer and any legal documentation that may be required.
- Ensure that the agreement: - Refers to the consultation has taken place; - Sets out the terms of the transfer; - Confirms that the decision to transfer was freely made, and was not subject to coercion, manipulation, or any form of pressure; - Attaches an accurate map of the land being transferred (boundaries, coordinates); - Sets out who will bear the costs of the transfer (e.g., notarial fees, taxes, title issues) and documents the residual land rights

- Ensure that all necessary parties sign the documents, including obtaining consent from spouses and children of legal age.
- Ensure that the transfer and title is registered or recorded; and
- Ensure that the land remaining after the donated land is excised is properly titled, registered, or recorded.

It is also important to maintain a record of the process that has been followed. Such documents could include the following:

- The notification indicating the location and amount of land that was sought from and its intended use for the project, with a record of when and where this was made public.
- Records of the consultations that were held and what was discussed.
- A copy of the due diligence that was conducted.
- Copies of each of the formal statements of donation, establishing informed consent as described above, and signed by each owner or user involved.
- Copies of all documents, registrations or records showing the legal transfer of the land.
- A map, showing each parcel of land.
- Appropriate documentation for reverting the land to the donor upon decommissioning from the site.

Step 8: Grievance redress arrangements

The project specifies the means by which donors (and, potentially, persons whose use or occupancy was not recognized in the transfer of land) may raise grievances, and measures to ensure consideration of, and timely response to, grievances raised. The grievance process includes participation of reviewers not directly affiliated with the village administration. The grievance process imposes no cost upon those raising grievances, and participation in the grievance process does not preclude pursuit of legal remedies under the laws of the country.

VOLUNTARY LAND DONATION (OR LAND LEASE) FORM

This form or an equivalent document is to be used to record the consent of landowners who offer private land for a good community activity. The essentials of voluntary donation are that the donors have been freely consulted prior to the donation, were not pressured, or coerced, that the donation will not affect a significant proportion (more than 10%) of their productive assets, and that they have the right to refuse and to lodge a complaint if they have a grievance about the process.

Consent Form for Voluntary Donation

I/We: _____ male household head _____female household head, and/or person(s) exercising customary rights over land described as (legal description, GPS coordinates if available) in

Village_____

Island_____

Province _____

Hereby declare that I/we/the group are the owners/users of the land required for (description): _____

I/we are voluntarily donating the use of land and or/ land-based assets (land area, type of assets /trees/crops, etc.) _____

_____

for the purpose of: (specify activity)

_____

_____

We agree to this purpose from (date)_____ for as long as the purpose is served *or* until (specify end date, typically the life expectancy of the facility) _____

I/we make this donation of My/Our own free will. I/We are waiving My/Our right to compensation of any kind for the specified duration of the activity.

I/We affirm that we have been fully and freely consulted and informed about the activity prior to agreement, have not been subject to any form of coercion, understand that I/we have the right to refuse, and to seek redress for any grievance concerning this transaction.

Signed:

Male household head _____ /Female household head_____

Chief or Local Custom Authority_____

15.10 Annex 11: Code of Conduct

Codes of Conduct and Action Plan For Implementing ESHS and OHS Standards, and Preventing Gender Based Violence and Violence Against Children

Background

The purpose of these *Codes of Conduct and Action Plan for Implementing ESHS and OHS Standards, and Preventing Gender Based Violence (GBV) and Violence Against Children (VAC)* is to introduce a set of key definitions, core Codes of Conduct, and guidelines that:

i. clearly define obligations on all project staff (including sub-contractors and day workers) with regard to implementing the project's environmental, social, health and safety (ESHS) and occupational health and safety (OHS) requirements, and;

ii. help prevent, report and address GBV and VAC within the work site and in its immediate surrounding communities.

The application of these Codes of Conduct will help ensure the project meets its ESHS and OHS objectives, as well as preventing and/or mitigating the risks of GBV and VAC on the project and in the local communities.

These Codes of Conduct are to be adopted by those working on the project and are meant to:

i. create awareness of the ESHS and OHS expectations on the project;

ii. create common awareness about GBV and VAC and:
(a) ensure a shared understanding that they have no place in the project; and,
(b) create a clear system for identifying, responding to, and sanctioning GBV and VAC incidents.

Ensuring that all project staff understand the values of the project, understand expectations for all employees, and acknowledge the consequences for violations of these values, will help to create smoother, more respectful and productive project implementation thereby helping ensure that the project's objectives will be achieved.

Definitions

The following definitions apply:

Environmental, Social, Health and Safety (ESHS): an umbrella term covering issues related to the impact of the project on the environment, communities and workers.

Occupational Health and Safety (OHS): Occupational health and safety is concerned with protecting the safety, health and welfare of people engaged in work or employment. The enjoyment of these standards at the highest levels is a basic human right that should be accessible by each worker.

Gender-Based Violence (GBV): is an umbrella term for any harmful act that is perpetrated against a person's will and **that is based on socially ascribed (i.e. gender) differences between males and females**. It includes acts that inflict physical, sexual or mental harm or suffering, threats of such acts, coercion, and other deprivations of liberty. These acts can occur in public or in private. The term GBV is used to underscore systemic inequality between males and females (which exists in every society in the world) and acts as a unifying and foundational characteristic of most forms of violence perpetrated against women and girls. The 1993 United Nations Declaration on the Elimination of Violence against Women defines violence against women as "any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women."[28] The six core types of GBV are:

- **Rape**: non-consensual penetration (however slight) of the vagina, anus or mouth with a penis, other body part, or an object.
- **Sexual Assault**: any form of non-consensual sexual contact that does not result in or include penetration. Examples include attempted rape, as well as unwanted kissing, fondling, or touching of genitalia and buttocks.

    - ***Sexual Harassment:*** is unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature. Sexual harassment is not always explicit or obvious; it can include implicit and subtle acts but always involves a power and gender dynamic in which a person in power uses their position to harass another based on their gender. Sexual conduct is unwelcome whenever the person subjected to it considers it unwelcome (e.g. looking somebody up and down; kissing, howling or smacking sounds; hanging around somebody; whistling and catcalls; in some instances, giving personal gifts).
    - ***Sexual Favors***: is a form of sexual harassment and includes making promises of favorable treatment (e.g. promotion) or threats of unfavorable treatment (e.g. loss of job) dependent on sexual acts—or other forms of humiliating, degrading or exploitative behavior.

- **Physical Assault**: an act of physical violence that is not sexual in nature. Examples include hitting, slapping, choking, cutting, shoving, burning, shooting or use of any weapons, acid attacks or any other act that re*sults* in pain, discomfort or injury.

- **Forced Marriage**: the marriage of an individual against her or his will.

- **Denial of Resources, Opportunities or Services:** denial of rightful access to economic resources/assets or livelihood opportunities, education, health or other social services (e.g. a

[28] It is important to note that women and girls disproportionately experience violence; overall 35 percent of women worldwide have faced physical or sexual violence (WHO, Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence, 2013). Some men and boys also face violence based on their gender and unequal power relationships.

widow prevented from receiving an inheritance, earnings forcibly taken by an intimate partner or family member, a woman prevented from using contraceptives, a girl prevented from attending school, etc.).

- **Psychological / Emotional Abuse:** Infliction of mental or emotional pain or injury. Examples include threats of physical or sexual violence, intimidation, humiliation, forced isolation, stalking, harassment, unwanted attention, remarks, gestures or written words of a sexual and/or menacing nature, destruction of cherished things, etc.

Violence Against Children (VAC): is defined as physical, sexual, emotional and/or psychological harm, neglect or negligent treatment of minor children (i.e. under the age of 18), including exposure to such harm,[29] that results in actual or potential harm to the child's health, survivor, development or dignity in the context of a relationship of responsibility, trust or power. This includes using children for profit, labor[30], sexual gratification, or some other personal or financial advantage. This also includes other activities such as using computers, mobile phones, video and digital cameras or any other medium to exploit or harass children or to access child pornography.

Grooming: are behaviors that make it easier for a perpetrator to procure a child for sexual activity. For example, an offender might build a relationship of trust with the child and then seek to sexualize that relationship (for example by encouraging romantic feelings or exposing the child to sexual concepts through pornography).

Online Grooming: is the act of sending an electronic message with indecent content to a recipient who the sender believes to be a minor, with the intention of procuring the recipient to engage in or submit to sexual activity with another person, including but not necessarily the sender.[31]

Accountability Measures: are the measures put in place to ensure the confidentiality of survivors and to hold contractors, consultants and the client responsible for instituting a fair system of addressing cases of GBV and VAC.

Contractors Environmental and Social Management Plan (CESMP): the plan prepared by the contractor outlining how they will implement the works activities in accordance with the project's environmental and social management plan (ESMP).

Child: is used interchangeably with the term 'minor' and refers to a person under the age of 18. This is in accordance with Article 1 of the United Nations Convention on the Rights of the Child.

[29] Exposure to GBV is also considered VAC.
[30] The employment of children must comply with all relevant local legislation, including labor laws in relation to child labor and World Bank's safeguard policies on child labor and minimum age. They must also be able to meet the project's Occupational Health and Safety competency standards.
[31] For example, the Vanuatu Criminal Code Act 1995, Division 474 (telecommunications offences, subdivision C).

Child Protection (CP): is an activity or initiative designed to protect children from any form of harm, particularly arising from VAC.

Consent: is the informed choice underlying an individual's free and voluntary intention, acceptance or agreement to do something. No consent can be found when such acceptance or agreement is obtained using threats, force or other forms of coercion, abduction, fraud, deception, or misrepresentation. In accordance with the United Nations Convention on the Rights of the Child, the World Bank considers that consent cannot be given by children under the age of 18, even if national legislation of the country into which the Code of Conduct is introduced has a lower age.[32] Mistaken belief regarding the age of the child and consent from the child is not a defense.

Consultant: is as any firm, company, organization or other institution that has been awarded a contract to provide consulting services for the project and has hired managers and/or employees to conduct this work.

Contractor: is any firm, company, organization or other institution that has been awarded a contract to conduct infrastructure development works for the project and has hired managers and/or employees to conduct this work. This also includes sub-contractors hired to undertake activities on behalf of the contractor.

Employee: is any individual offering labor to the contractor or consultant within country on or off the work site, under a formal or informal employment contract or arrangement, typically, but not necessarily (e.g. including unpaid interns and volunteers), in exchange for a salary, with no responsibility to manage or supervise other employees.

GBV and VAC Allegation Procedure: is the prescribed procedure to be followed when reporting incidents of GBV or VAC.

GBV and VAC Codes of Conduct: The Codes of Conduct adopted for the project covering the commitment of the company, and the responsibilities of managers and individuals with regards to GBV and VAC.

GBV and VAC Compliance Team (GCCT): a team established by the project to address GBV and VAC issues.

Grievance Mechanism (GM): is the process established by a project to receive and address complaints.

Manager: is any individual offering labor to the contractor or consultant, on or off the work site, under a formal or informal employment contract and in exchange for a salary, with responsibility to

[32] For example, under Article 97 Criminal consolidation act for age of legal consent in Vanuatu, sexual activity with any child under the age of 15 years for heterosexual conduct and 18 years for same sex conduct is prohibited (http://tinyurl.com/vu-consent). However, the World Bank follows the United Nations for the age of consent (18 years) so this applies on World Bank financed projects.

control or direct the activities of a contractor's or consultant's team, unit, division or similar, and to supervise and manage a pre-defined number of employees.

Perpetrator: the person(s) who commit(s) or threaten(s) to commit an act or acts of GBV or VAC.

Response Protocol: is the mechanisms set in place to respond to cases of GBV and VAC (see Section 4.7 Response Protocol).

Survivor/Survivors: the person(s) adversely affected by GBV or VAC. Women, men and children can be survivors of GBV; children can be survivors of VAC.

Work Site: is the area in which infrastructure development works are being conducted, as part of the project. Consulting assignments are considered to have the areas in which they are active as their work sites.

Work Site Surroundings: is the 'Project Area of Influence' which are any area, urban or rural, directly affected by the project, including all human settlements found on it.

Codes of Conduct

This chapter presents three Codes of Conduct for use:

i. **Company Code of Conduct:** Commits the company to addressing GBV and VAC issues;
ii. **Manager's Code of Conduct:** Commits managers to implementing the Company Code of Conduct, as well as those signed by individuals; and,
iii. **Individual Code of Conduct:** Code of Conduct for everyone working on the project, including managers.

Company Code of Conduct

Implementing ESHS and OHS Standards

Preventing Gender Based Violence and Violence Against Children

The company is committed to ensuring that the project is implemented in such a way which minimizes any negative impacts on the local environment, communities, and its workers. This will be done by respecting the environmental, social, health and safety (ESHS) standards, and ensuring appropriate occupational health and safety (OHS) standards are met. The company is also committed to creating and maintaining an environment in which gender-based violence (GBV) and violence against children (VAC) have no place, and where they will not be tolerated by any employee, sub-contractors, supplier, associate, or representative of the company.

Therefore, to ensure that all those engaged in the project are aware of this commitment, the company commits to the following core principles and minimum standards of behavior that will apply to all company employees, associates, and representatives, including sub-contractors and suppliers, without exception:

Strictly Confidential

General

1. The company—and therefore all employees, associates, representatives, sub-contractors and suppliers—commits to complying with all relevant national laws, rules and regulations.
2. The company commits to full implementing its 'Contractors Environmental and Social Management Plan' (CESMP).
3. The company commits to treating women, and men, children (persons under the age of 18), with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status. Acts of GBV and VAC are in violation of this commitment.
4. The company shall ensure that interactions with local community members are done with respect and non-discrimination.
5. Demeaning, threatening, harassing, abusive, culturally inappropriate, or sexually provocative language and behavior are prohibited among all company employees, associates, and its representatives, including sub-contractors and suppliers.
6. The company will follow all reasonable work instructions (including regarding environmental and social norms).
7. The company will protect and ensure proper use of property (for example, to prohibit theft, carelessness or waste).

Health and Safety

8. The company will ensure that the project's occupational health and safety (OHS) Management Plan is effectively implemented by company staff, as well as sub-contractors and suppliers.
9. The company will ensure that all persons on-site wear prescribed and appropriate personal protective equipment, preventing avoidable accidents and reporting conditions or practices that pose a safety hazard or threaten the environment.
10. The company will:

i. prohibit the use of alcohol during work activities.

ii. prohibit the use of narcotics or other substances which can always impair faculties.

11. The company will ensure that adequate sanitation facilities are available on site and at any worker accommodations provided to those working on the project.

Gender Based Violence and Violence Against Children

12. Acts of GBV or VAC constitute gross misconduct and are therefore grounds for sanctions, which may include penalties and/or termination of employment, and if appropriate referral to the Police for further action.

13. All forms of GBV and VAC, including grooming are unacceptable, regardless of whether they take place on the work site, the work site surroundings, at worker's camps or within the local community.

i. Sexual Harassment—for instance, making unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct, of a sexual nature, including subtle acts of such behavior, is prohibited.

ii. Sexual favors —for instance, making promises or favorable treatment dependent on sexual acts—or other forms of humiliating, degrading or exploitative behavior are prohibited.

14. Sexual contact or activity with children under 18—including through digital media—is 7prohibited. Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.

15. Unless there is full consent[33] by all parties involved in the sexual act, sexual interactions between the company's employees (at any level) and members of the communities surrounding the workplace are prohibited. This includes relationships involving the withholding/promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex—such sexual activity is considered "non-consensual" within the scope of this Code.

16. In addition to company sanctions, legal prosecution of those who commit acts of GBV or VAC will be pursued if appropriate.

17. All employees, including volunteers and sub-contractors are highly encouraged to report suspected or actual acts of GBV and/or VAC by a fellow worker, whether in the same company or not. Reports must be made in accordance with project's GBV and VAC Allegation Procedures.

18. Managers are required to report and act to address suspected or actual acts of GBV and/or VAC as they have a responsibility to uphold company commitments and hold their direct reports responsible.

Implementation

To ensure that the above principles are implemented effectively the company commits to ensuring that:

19. All managers sign the project's 'Manager's Code of Conduct' detailing their responsibilities for implementing the company's commitments and enforcing the responsibilities in the 'Individual Code of Conduct'.

20. All employees sign the project's 'Individual Code of Conduct' confirming their agreement to comply with ESHS and OHS standards, and not to engage in activities resulting in GBV or VAC.

[33] **Consent** is defined as the informed choice underlying an individual's free and voluntary intention, acceptance or agreement to do something. No consent can be found when such acceptance or agreement is obtained using threats, force or other forms of coercion, abduction, fraud, deception, or misrepresentation. In accordance with the United Nations Convention on the Rights of the Child, the World Bank considers that consent cannot be given by children under the age of 18, even if national legislation of the country into which the Code of Conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defense.

21. Displaying the Company and Individual Codes of Conduct prominently and in clear view at workers' camps, offices, and in public areas of the workspace. Examples of areas include waiting, rest and lobby areas of sites, canteen areas and health clinics.
22. Ensure that posted and distributed copies of the Company and Individual Codes of Conduct are translated into the appropriate language of use in the work site areas as well as for any international staff in their native language.
23. An appropriate person is nominated as the company's 'Focal Point' for addressing GBV and VAC issues, including representing the company on the GBV and VAC Compliance Team (GCCT) which is comprised of representatives from the client, contractor(s), the supervision consultant, and local service provider(s).
24. Ensuring that an effective GBV and VAC Action Plan is developed in consultation with the GCCT which includes as a minimum:

i. **GBV and VAC Allegation Procedure** to report GBV and VAC issues through the project Grievance Redress Mechanism (Section 4.3 Action Plan);
ii. **Accountability Measures** to protect confidentiality of all involved (Section 4.4 Action Plan); and,
iii. **Response Protocol** applicable to GBV and VAC survivors and perpetrators (Section 4.7 Action Plan).

25. That the company effectively implements the agreed final GBV and VAC Action Plan, providing feedback to the GCCT for improvements and updates as appropriate.
26. All employees attend an induction training course prior to commencing work on site to ensure they are familiar with the company's commitments to ESHS and OHS standards, and the project's GBV and VAC Codes of Conduct.
27. All employees attend a mandatory training course once a month for the duration of the contract starting from the first induction training prior to commencement of work to reinforce the understanding of the project's ESHS and OHS standards and the GBV and VAC Code of Conduct.

I do hereby acknowledge that I have read the foregoing Company Code of Conduct, and on behalf of the company agree to comply with the standards contained therein. I understand my role and responsibilities to support the project's OHS and ESHS standards, and to prevent and respond to GBV and VAC. I understand that any action inconsistent with this Company Code of Conduct or failure to act mandated by this Company Code of Conduct may result in disciplinary action.

Company name: _____

Signature: _____

Printed Name: _____

Title: _____

Date: _____

15.11 Annex 12: Manager's Code of Conduct

Implementing ESHS and OHS Standards

Preventing Gender Based Violence and Violence Against Children

Managers at all levels have a responsibility to uphold the company's commitment to implementing the ESHS and OHS standards, and preventing and addressing GBV and VAC. This means that managers have an acute responsibility to create and maintain an environment that respects these standards and prevents GBV and VAC. Managers need to support and promote the implementation of the Company Code of Conduct. To that end, managers must adhere to this Manager's Code of Conduct and sign the Individual Code of Conduct. This commits them to supporting the implementation of the CESMP and the OHS Management Plan and developing systems that facilitate the implementation of the GBV and VAC Action Plan. They need to maintain a safe workplace, as well as a GBV-free and VAC-free environment at the workplace and in the local community. These responsibilities include but are not limited to:

Implementation

1.To ensure maximum effectiveness of the Company and Individual Codes of Conduct:

i.Prominently displaying the Company and Individual Codes of Conduct in clear view at workers' camps, offices, and in public areas of the workspace. Examples of areas include waiting, rest and lobby areas of sites, canteen areas and health clinics.

ii.Ensuring all posted and distributed copies of the Company and Individual Codes of Conduct are translated into the appropriate language of use in the work site areas as well as for any international staff in their native language.

1. Verbally and in writing explain the Company and Individual Codes of Conduct to all staff.
2. Ensure that:

i.All direct reports sign the 'Individual Code of Conduct', including acknowledgment that they have read and agree with the Code of Conduct.

ii.Staff listed and signed copies of the Individual Code of Conduct are provided to the OHS Manager, the GCCT, and the client.

iii.Participate in training and ensure that staff also participate as outlined below.

iv.Put in place a mechanism for staff to:

(a) report concerns on ESHS or OHS compliance; and,

(b) confidentially report GBV or VAC incidents through the Grievance Mechanism (GM)

v.Staff are encouraged to report suspected or actual ESHS, OHS, GBV or VAC issues, emphasizing the staff's responsibility to the Company and the country hosting their employment, and emphasizing the respect for confidentiality.

3. In compliance with applicable laws and to the best of your abilities, prevent perpetrators of sexual exploitation and abuse from being hired, re-hired or deployed. Use background and criminal reference checks for all employees.

4. Ensure that when engaging in partnership, sub-contractor, supplier or similar agreements, these agreements:

i. Incorporate the ESHS, OHS, GBV and VAC Codes of Conduct as an attachment.

ii. Include the appropriate language requiring such contracting entities and individuals, and their employees and volunteers, to comply with the Individual Codes of Conduct.

iii. Expressly state that the failure of those entities or individuals, as appropriate, to ensure compliance with the ESHS and OHS standards, take preventive measures against GBV and VAC, to investigate allegations thereof, or to take corrective actions when GBV or VAC has occurred, shall not only constitute grounds for sanctions and penalties in accordance with the Individual Codes of Conduct but also termination of agreements to work on or supply the project.

5. Provide support and resources to the GCCT to create and disseminate internal sensitization initiatives through the awareness-raising strategy under the GBV and VAC Action Plan.

6. Ensure that any GBV or VAC issue warranting Police action is reported to the Police, the client and the World Bank immediately.

7. Report and act according to the response protocol (Section 4.7 Response Protocol) any suspected or actual acts of GBV and/or VAC as managers have a responsibility to uphold company commitments and hold their direct reports responsible.

8. Ensure that any major ESHS or OHS incidents are reported to the client and the supervision engineer immediately.

Training

9. The managers are responsible to:

i. Ensure that the OHS Management Plan is implemented, with suitable training required for all staff, including sub-contractors and suppliers; and,

ii. Ensure that staff have a suitable understanding of the CESMP and are trained as appropriate to implement the CESMP requirements.

10. All managers are required to attend an induction manager training course prior to commencing work on site to ensure that they are familiar with their roles and responsibilities in upholding the GBV and VAC elements of these Codes of Conduct. This training will be separate from the induction training course required of all employees and will provide managers with the necessary understanding and technical support needed to begin to develop the GBV and VAC Action Plan for addressing GBV and VAC issues.

11. Managers are required to attend and assist with the project facilitated monthly training courses for all employees. Managers will be required to introduce the trainings and announce the self-evaluations, including collecting satisfaction surveys to evaluate training experiences and provide advice on improving the effectiveness of training.

12. Ensure that time is provided during work hours and that staff prior to commencing work on site attend the mandatory project facilitated induction training on:

i. OHS and ESHS; and,

ii. GBV and VAC required of all employees.

13. During civil works, ensure that staff attend ongoing OHS and ESHS training, as well as the monthly mandatory refresher training course required of all employees to combat increased risk of GBV and VAC.

Strictly Confidential

Response

14. Managers will be required to take appropriate actions to address any ESHS or OHS incidents.

15. With regard to GBV and VAC:

i. Provide input to the GBV and VAC Allegation Procedures (Section 4.2 Action Plan) and Response Protocol (Section 4.7 Action Plan) developed by the GCCT as part of the final cleared GBV and VAC Action Plan.

ii. Once adopted by the Company, managers will uphold the Accountability Measures (Section 4.4 Action Plan) set forth in the GBV and VAC Action Plan to maintain the confidentiality of all employees who report or (allegedly) perpetrate incidences of GBV and VAC (unless a breach of confidentiality is required to protect persons or property from serious harm or where required by law).

iii. If a manager develops concerns or suspicions regarding any form of GBV or VAC by one of his/her direct reports, or by an employee working for another contractor on the same work site, s/he is required to report the case using the GM.

iv. Once a sanction has been determined, the relevant manager(s) is/are expected to be personally responsible for ensuring that the measure is effectively enforced, within a maximum timeframe of 14 days from the date on which the decision to sanction was made

v. If a Manager has a conflict of interest due to personal or familial relationships with the survivor and/or perpetrator, he/she must notify the respective company and the GCCT. The Company will be required to appoint another manager without a conflict of interest to respond to complaints.

vi. Ensure that any GBV or VAC issue warranting Police action is reported to the Police, the client and the World Bank immediately

16. Managers failing to address ESHS or OHS incidents, or failing to report or comply with the GBV and VAC provisions may be subject to disciplinary measures, to be determined and enacted by the company's CEO, Managing Director or equivalent highest-ranking manager. Those measures may include:

i. Informal warning.
ii. Formal warning.
iii. Additional Training.
iv. Loss of up to one week's salary.
v. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
vi. Termination of employment.

17. Ultimately, failure to effectively respond to ESHS, OHS, GBV and VAC cases on the work site by the company's managers or CEO may provide grounds for legal actions by authorities.

I do hereby acknowledge that I have read the foregoing Manager's Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to ESHS, OHS, GBV and VAC requirements. I understand that any action inconsistent with this Manager's Code of Conduct or failure to act mandated by this Manager's Code of Conduct may result in disciplinary action.

Signature: _____

Printed Name: _____

Title: _____

Date: _____

15.13 Annex 13: Individual Code of Conduct

Implementing ESHS and OHS Standards

Preventing Gender Based Violence and Violence Against Children

I, _____, acknowledge that adhering to environmental, social health and safety (ESHS) standards, following the project's occupational health and safety (OHS) requirements, and preventing gender-based violence (GBV) and violence against children (VAC) is important.

The company considers that failure to follow ESHS and OHS standards, or to partake in GBV or VAC activities—be it on the work site, the work site surroundings, at workers' camps, or the surrounding communities—constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or potential termination of employment. Prosecution by the Police of those who commit GBV or VAC may be pursued if appropriate.

I agree that while working on the project I will:

1. Attend and actively partake in training courses related to ESHS, OHS, HIV/AIDS, GBV and VAC as requested by my employer.
2. Will always wear my personal protective equipment (PPE) when at the work site or engaged in project related activities.
3. Take all practical steps to implement the contractor's environmental and social management plan (CESMP).
4. Implement the OHS Management Plan.
5. Adhere to a zero-alcohol policy during work activities, and refrain from the use of narcotics or other substances which can always impair faculties.
6. Consent to Police background check.
7. Treat women, children (persons under the age of 18), and men with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
8. Not use language or behavior towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
9. Not engage in sexual harassment—for instance, making unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct, of a sexual nature, including subtle acts of such behavior (e.g. looking somebody up and down; kissing, howling or smacking sounds; hanging around somebody; whistling and catcalls; giving personal gifts; making comments about somebody's sex life; etc.).
10. Not engage in sexual favors—for instance, making promises or favorable treatment dependent on sexual acts—or other forms of humiliating, degrading or exploitative behavior.
11. Not participate in sexual contact or activity with children—including grooming or contact through digital media. Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.

12. Unless there is the full consent[34] by all parties invoLVed, I will not have sexual interactions with members of the surrounding communities. This includes relationships invoLVing the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex—such sexual activity is considered "non-consensual" within the scope of this Code.
13. Consider reporting through the GM or to my manager any suspected or actual GBV or VAC by a fellow worker, whether employed by my company or not, or any breaches of this Code of Conduct.

With regard to children under the age of 18:

14. Wherever possible, ensure that another adult is present when working in the proximity of children.
15. Not invite unaccompanied children unrelated to my family into my home, unless they are at immediate risk of injury or in physical danger.
16. Not use any computers, mobile phones, video and digital cameras or any other medium to exploit or harass children or to access child pornography (see also "Use of children's images for work related purposes" below).
17. Refrain from physical punishment or discipline of children.
18. Refrain from hiring children for domestic or other labor below the minimum age of 14 unless national law specifies a higher age, or which places them at significant risk of injury.
19. Comply with all relevant local legislation, including labor laws in relation to child labor and World Bank's safeguard policies on child labor and minimum age.
20. Take appropriate caution when photographing or filming children.

Use of children's images for work related purposes

When photographing or filming a child for work related purposes, I must:

21. Before photographing or filming a child, assess and endeavor to comply with local traditions or restrictions for reproducing personal images.
22. Before photographing or filming a child, obtain informed consent from the child and the parent or guardian of the child. As part of this I must explain how the photograph or film will be used.
23. Ensure photographs, films, videos and DVDs present children in a dignified and respectful manner and not in a vulnerable or submissive manner. Children should be adequately clothed and not in poses that could be seen as sexually suggestive.
24. Ensure images are honest representations of the context and the facts.

[34] **Consent** is defined as the informed choice underlying an individual's free and voluntary intention, acceptance or agreement to do something. No consent can be found when such acceptance or agreement is obtained using threats, force or other forms of coercion, abduction, fraud, deception, or misrepresentation. In accordance with the United Nations Convention on the Rights of the Child, the World Bank considers that consent cannot be given by children under the age of 18, even if national legislation of the country into which the Code of Conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defense.

25.Ensure file labels do not reveal identifying information about a child when sending images electronically.

Sanctions

I understand that if I breach this Individual Code of Conduct, my employer will take disciplinary action which could include:

1. Informal warning.
2. Formal warning.
3. Additional Training.
4. Loss of up to one week's salary.
5. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
6. Termination of employment.
7. Report to the Police if warranted.

I understand that it is my responsibility to ensure that the environmental, social, health and safety standards are met. That I will adhere to the occupational health and safety management plan. That I will avoid actions or behaviors that could be construed as GBV or VAC. Any such actions will be a breach this Individual Code of Conduct. I do hereby acknowledge that I have read the foregoing Individual Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to ESHS, OHS, GBV and VAC issues. I understand that any action inconsistent with this Individual Code of Conduct or failure to act mandated by this Individual Code of Conduct may result in disciplinary action and may affect my ongoing employment.

Signature: _____

Printed Name: _____

Title: _____

Date: _____

15.14 Annex 14: GBV and VAC Action Plan

4.1 The GBV and VAC Compliance Team

The project shall establish a 'GBV and VAC Compliance Team' (GCCT). The GCCT will include, as appropriate to the project, at least four representatives ('Focal Points') as follows:

i. A safeguards specialist from the client;
ii. The occupational health and safety manager from the contractor[35], or someone else tasked with the responsibility for addressing GBV and VAC with the time and seniority to devote to the position;
iii. The supervision consultant; and,
iv. A representative from a local service provider with experience in GBV and VAC (the 'Service Provider').

It will be the duty of the GCCT with support from the management of the contractor to inform workers about the activities and responsibilities of the GCCT. To effectively serve on the GCCT, members must undergo training by the local service provider prior to the commencement of their assignment to ensure that they are sensitized on GBV and Child Protection.

The GCCT will be required to:

i. Approve any changes to the **GBV and VAC Codes of Conduct** contained in this document, with clearances from the World Bank for any such changes.
ii. Prepare the **GBV and VAC Action Plan** reflecting the Codes of Conduct which includes:
   (a) **GBV and VAC Allegation Procedures** (See 4.2)
   (b) **Accountability Measures** (See 4.4)
   (c) An **Awareness raising Strategy** (See 4.6)
   (d) A **Response Protocol** (See 4.7)
iii. Obtain approval of the GBV and VAC Action Plan by the contractor's management;
iv. Obtain client and World Bank clearances for the GBV and VAC Action Plan prior to full mobilization;
v. Receive and monitor resolutions and sanctions regarding complaints received related to GBV and VAC associated with the project; and,
vi. Ensure that GBV and VAC statistics in the GM are up to date and included in the regular project reports.

The GCCT shall hold quarterly update meetings to discuss ways to strengthen resources and GBV and VAC support for employees and community members.

4.2 Making Complaints: GBV and VAC Allegation Procedures

All staff, volunteers, consultants and sub-contractors are encouraged to report suspected or actual GBV or VAC cases. Managers are required to report suspected or actual GBV and/or VAC cases as

[35] Where there are multiple contractors working on the project, each shall nominate a representative as appropriate.

they have responsibilities to uphold company commitments and they hold their direct reports accountable for complying with the Individual Code of Conduct.

The project will provide information to employees and the community on how to report cases of GBV and VAC Code of Conduct breaches through the GM. The GCCT will follow up on cases of GBV, VAC and Code of Conduct breaches reported through the GM.

GM

The project operates a GM which is managed by a designated GM operator with the project implementation unit. Reports of GBV or VAC, other complaints, or other concerns may be submitted online, via telephone or mail, or in person.

All complaints regarding GBV and VAC must immediately be reported to the World Bank task team by the GM operator.

The GM operator will refer complaints related to GBV or VAC to the GCCT to resolve them. In accordance with the GBV and VAC Action Plan, the GCCT, through the Service Provider and Focal Point(s) will investigate the complaint and ultimately provide the GM operator with a resolution to the complaint, or the Police if necessary. The victim's confidentiality should also be kept in mind when reporting any incidences to the Police.

The GM operator will, upon resolution, advise the complainant of the outcome, unless it was made anonymously. Complaints made to managers or the Service Provider will be referred by them to the GM for processing.

If the complaint to the GM is made by a survivor or on behalf of a survivor, the complainant will be directly referred to the service provider to receive support services while the GCCT investigates the complaint in parallel.

Service Provider

The Service Provider is a local organization which has the experience and ability to support survivors of GBV or VAC. The client, the contractor(s) and consultant must establish a working relationship with the Service Provider, so that GBV and VAC cases can safely be referred to them. The Service Provider will also provide support and guidance to the GBV and VAC Focal Points as necessary. The Service Provider will have a representative on the GCCT and be involved in resolving complaints related to GBV or VAC.

GCCT GBV and VAC Focal Points

The GCCT shall confirm that all complaints related to GBV or VAC have been referred to the World Bank by the GM operator.

The GCCT shall consider all GBV and VAC complaints and agree on a plan for resolution. The appropriate

Focal Point will be tasked with implementing the plan (i.e. issues with contractor's staff will be for the contractor to resolve; consultant's staff the consultant; and client staff the client). The Focal Point will advise the GCCT on resolution, including referral to the Police if necessary. They will be assisted by the Service Provider as appropriate.

All the Focal Points on the GCCT must be trained and empowered to resolve GBV and VAC issues. It is essential that all staff of the GM and GCCT understand the guiding principles and ethical requirement of dealing with survivors of GBV and VAC. All reports should be kept confidential and referred immediately to the Service Provider represented on the GCCT[36]. In GBV and VAC cases warranting Police action, the Focal Points must appropriately refer to the complaint to: (i) the authorities; (ii) the Service Provider; and, (iii) management for further action. The client and the World Bank are to be immediately notified.

4.3 Accountability Measures

All reports of GBV or VAC shall be handled in a confidential manner to protect the rights of all involved. The client, contractor and consultant must maintain the confidentiality of employees who notify any acts or threats of violence, and of any employees accused of engaging in any acts or threats of violence (unless a breach of confidentiality is required to protect persons or property from serious harm or where required by law). The contractor and consultant must prohibit discrimination or adverse action against an employee because of survivor's disclosure, experience or perceived experience of GBV or VAC.

To ensure that survivors feel confident to disclose their experience of GBV or VAC, they can report cases of GBV or VAC through multiple channels: (i) online, (ii) phone, (iii) in-person, (iv) the local service provider, (v) the manager(s), (vi) village councils; or, (vii) the Police. To ensure confidentiality, only the service provider will be privy of information regarding the survivor. The GCCT will be the primary point of contact for information and follow up regarding the perpetrator.

4.4 Monitoring and Evaluation

The GCCT must monitor the follow up of cases that have been reported and maintain all reported cases in a confidential and secure location. Monitoring must collect the number of cases that have been reported and the share of them that are being managed by Police, NGOs etc.

These statistics shall be reported to the GM and the Supervision Engineer for inclusion in their reporting.

For any GBV and VAC cases warranting Police action, the client and the World Bank are to be immediately notified.

4.5 Awareness-raising Strategy

[36] Survivors of GBV and VAC may need access to Police, justice, health, psychosocial, safe shelter and livelihood services to begin on a path of healing from their experience of violence.

It is important to create an Awareness-raising Strategy with activities aimed to sensitize employees on GBV and VAC on the work site and its related risks, provisions of the GBV and VAC Codes of Conduct, GBV and VAC Allegation Procedures, Accountability Measures and Response Protocol. The strategy will be accompanied by a timeline, indicating the various sensitization activities through which the strategy will be implemented and the related (expected) delivery dates. Awareness-raising activities should be linked with trainings provided by the Service Provider.

4.6 Response Protocol

The GCCT will be responsible for developing a written response[37] protocol to meet the project requirements, in accordance with national laws and protocols. The response protocol must include mechanisms to notify and respond to perpetrators in the workplace (See 4.9 for Perpetrator Policy and Response). The response protocol will include the GM process to ensure a competent and confidential response to disclosures of GBV and VAC. An employee who discloses a case of GBV or VAC in the workplace shall be referred to the GM for reporting.

4.6.1 Protocol for Written Recording of GBV/VAC Cases and GCCT Record-Keeping

Purpose

This protocol establishes standards for the written recording of Gender-Based Violence (GBV) and Violence Against Children (VAC) cases raised under the DARES Liberia project, and for the documentation of all activities undertaken by the GBV and VAC Compliance Team (GCCT). It is designed to protect survivor confidentiality, ensure accountability, and comply with applicable Liberian law, the World Bank Environmental and Social Framework (ESF), and the GBV and VAC Codes of Conduct adopted for the project.

Legal Context — Liberia

GBV and VAC case records maintained under this project may be subject to judicial subpoena in the course of criminal or civil proceedings under the following applicable Liberian legal instruments:

- Penal Code of Liberia — under which sexual assault and rape are prosecutable criminal offences.
- An Act to Amend the Rape Law 2005 — which strengthens criminal penalties for sexual offences and provides for prosecution procedures.
- Children's Act of Liberia 2012 — which governs the protection of children from abuse, exploitation, and violence, and mandates reporting of child abuse to the Family Court.
- An Act Adopting a New Penal Law for Liberia — provisions governing protection from harassment, assault, and exploitation.

In the event that GCCT case records are subpoenaed by a court of competent jurisdiction in Liberia, the PIU GBV/GM Focal Point shall immediately:

[37] Develop appropriate protocol for written recording of GBV issues and VAC raised in case the notes are subpoenaed. Develop processes for record keeping including activities undertaken by the GCCT.

- Notify the World Bank Task Team Leader within 24 hours of receiving the subpoena.
- Seek legal guidance from the Ministry of Justice of Liberia before any records are disclosed to the court.
- Request the assistance of the Public Defense Office or the Liberia Legal Aid Program to provide legal support to the survivor, where the survivor consents.
- Seek the survivor's informed consent before any disclosure wherever legally permissible under the applicable court order.
- Disclose only the minimum information required by the court order — not the entire case file.

For each GBV or VAC case, the PIU GBV/GM Focal Point shall record only the minimum information necessary for case management, referral, and reporting. A non-identifiable alphanumeric case code shall be used throughout — the survivor's name shall never appear in the case file. The following table specifies what is recorded, what is prohibited, and the rationale:

Case code and date of report	Survivor's full name, address, or photograph	Use an alphanumeric case code assigned at intake — never the survivor's name
Nature of complaint in survivor's own words — no leading questions	Graphic details of the incident beyond what is necessary for referral	Record only what the survivor freely volunteers
Whether alleged perpetrator is associated with the project	Names of witnesses unless separately consented in writing	Limit to project-linkage determination only
Referral services offered and survivor's decision	Medical or clinical findings — these are kept by the health provider only	Record outcome of referral offer, not clinical content
Follow-up actions taken and dates	Any information the survivor has not consented to record	Obtain verbal consent before recording any detail
Case status: open, referred, closed, or escalated	Speculation about the perpetrator's identity where unconfirmed	Record only confirmed associations

Storage and Access Restrictions

All GBV and VAC records shall be stored in strict accordance with the following access restrictions:

Individual survivor case files	Locked physical cabinet at PIU office; password-protected electronic copy accessible only to PIU GBV/GM Focal Point and PIU GBV Specialist	PIU GBV/GM Focal Point

GCCT meeting minutes and decisions	Secure PIU filing system — separate from survivor case files	PIU GBV Specialist
Referral records	Maintained with case file under case code — no survivor name used	PIU GBV/GM Focal Point
Disciplinary action records	Maintained separately by PIU Coordinator — accessible to RREA Director for GRC oversight purposes only	PIU Coordinator
Quarterly anonymized case statistics	Submitted to RREA Director and World Bank as part of regular E&S progress reporting cycle; stored in PIU project files	PIU GBV Specialist
Training and awareness records	Maintained in PIU project files — not confidential	PIU GBV Specialist

IMPORTANT — PIU Coordinator and RREA Director access: The Project Coordinator and RREA Director are members of the GRC under Section 11.2.1 of this ESMF. In that capacity, they may access anonymized case summaries and GCCT institutional records (meeting minutes, referral records, disciplinary decisions) where necessary to fulfil their GRC oversight responsibilities. They shall not access individual survivor case files unless the survivor has given explicit written consent or a court order requires disclosure.

GCCT Institutional Record-Keeping

Separate from individual survivor case files, the GCCT shall maintain an institutional record of all GCCT activities. These institutional records are not confidential and shall be available to RREA management, World Bank supervision missions, and the Independent Verification Agent (IVA). The institutional record shall document:

- Minutes of all GCCT meetings, including decisions taken, members present, and date.
- All referrals made to external service providers, including the institution referred to, the date, and the outcome where known.
- Disciplinary actions recommended to employers, the nature of the sanction, and the outcome.
- Training sessions and awareness campaigns conducted for workers and community members on GBV and VAC prevention, including dates, locations, number of participants disaggregated by sex, and topics covered.
- Any incident reported to the World Bank under the 24-hour immediate notification requirement, including the date of notification and the World Bank's acknowledgement.
- Quarterly anonymized case statistics as described under Reporting below.

Reporting

The PIU GBV Specialist shall prepare a quarterly anonymized GBV and VAC case summary as part of the regular E&S progress reporting cycle submitted to the RREA Director and the World Bank Task Team. The summary shall include:

- Total number of cases received during the reporting period, by category (GBV, VAC, SEA, SH).
- Number of cases referred to external service providers, by type of service.
- Number of cases resolved, pending, escalated, or referred to the Police or Family Court.
- Any cases reported to the World Bank under the 24-hour immediate notification requirement during the period.
- Any systemic issues identified — such as recurring incident types, gaps in service provider availability, or breakdown in referral pathways — with recommended corrective actions.

Liberia-Specific Referral Pathway

When a survivor requires referral, the PIU GBV/GM Focal Point shall use the following referral pathway, which has been localized to Liberia's institutional landscape. The PIU shall maintain and update a county-level service provider register at least annually, given that provider availability and capacity vary by county and may change over the project implementation period.

Medical care	Any government health facility at county level; referral to the nearest county hospital for serious cases. In Montserrado County, referral to John F. Kennedy Medical Center.	Immediate — within 24 hours of disclosure
Psychosocial support	Ministry of Gender, Children and Social Protection — county offices; Women NGO Secretariat of Liberia (WONGOSOL); any accredited NGO service provider in the project county.	Within 48 hours of disclosure
Legal assistance	Public Defense Office, Ministry of Justice; Liberia Legal Aid Program; Timap for Justice (where operational in the project county).	Within 72 hours or as requested by survivor
Police protection	Liberia National Police — Women and Children Protection Section (WACPS). Note: WACPS coverage is strongest in Monrovia; in rural counties, report to the nearest police detachment and flag to county superintendent.	Immediately where risk of ongoing violence
Child protection	National Child Welfare System — Ministry of Gender, Children and	Immediately for any case involving a minor

	Social Protection. Cases involving minors must also be reported to the nearest Family Court.	
Criminal prosecution	Sexual and Gender-Based Violence (SGBV) Crimes Unit, Ministry of Justice of Liberia.	Where survivor consents to prosecution
Emergency accommodation	Ministry of Gender, Children and Social Protection County office; local women's shelters where available. PIU to maintain updated county-level shelter register.	Where survivor safety is at risk

Rural county service provider coverage — important caveat: The Women and Children Protection Section (WACPS) of the Liberia National Police has historically had limited county-level presence outside Monrovia. In counties where WACPS is not operational, the PIU GBV/GM Focal Point shall liaise with the nearest police detachment and notify the County Superintendent. Similarly, WONGOSOL and other NGO service providers may not be present in all 15 counties. The PIU must complete a county-level service provider mapping exercise within 60 days of project effectiveness and update the referral pathway table accordingly. This mapping shall be reviewed annually.

4.7 Survivor Support Measures

It is essential to appropriately respond to the survivor's complaint by respecting the survivor's choices to minimize the potential for re-traumatization and further violence against the survivor. Refer the survivor to the Service Provider to obtain appropriate support services in the community—including medical and psychosocial support, emergency accommodation, security including Police protection and livelihood support—by facilitating contact and coordination with these services. The client, contractor or consultant may, where feasible, provide financial and other supports to survivors of GBV or VAC for these services.

If the survivor is an employee, to ensure the safety of the survivor, and the workplace in general, the client, contractor or consultant, in consultation with the survivor, will assess the risk of ongoing abuse to the survivor and in the workplace. Reasonable adjustments will be made to the survivor's work schedule and work environment as deemed necessary. The employer will provide adequate leave to survivors seeking services after experiencing violence.

4.8 Perpetrator Policy and Response

Encourage and accept notification through the GM from employees and community members about perpetrators in the workplace. Through the GCCT and/or the Service Provider, oversee the investigation of these grievances, ensuring procedural fairness for the accused, and within the local laws. If an employee has breached the Code of Conduct, the employer will act, which could include:

i. Undertake disciplinary action up in accordance with sanctions in the GBV and VAC Codes of Conduct;
ii. Report the perpetrator to the Police as per local legal paradigms; and/or
iii. If feasible, provide or facilitate counselling for the perpetrator.

5.0 Sanctions

In accordance with the Code of Conduct, any employee confirmed as a GBV or VAC perpetrator shall be considered for disciplinary measures in line with sanctions and practices as agreed in the Individual Code of Conduct. It is important to note that, for each case, disciplinary sanctions are intended to be part of a process that is entirely internal to the employer, is placed under the full control and responsibility of its managers, and is conducted in accordance with the applicable national labor legislation.

Such a process is expected to be fully independent from any official investigation that competent authorities (e.g. Police) may decide to conduct in relation to the same case, and in accordance with the applicable national law. Similarly, internal disciplinary measures that the employer's managers may decide to enact are meant to be separate from any charges or sanctions that the official investigation may result into (e.g. monetary fines, detention etc.).

15.15 Annex 15: Potential Procedures for Addressing GBV and VAC

Accountability Measures to maintain confidentiality can be achieved through the following actions:

1. Inform all employees that the confidentiality of GBV/VAC survivors' personal information is of utmost importance.
2. Provide the GCCT with training on empathetic and non-judgmental listening.
3. Take disciplinary action, including and up to dismissal, against those who breach survivor's confidentiality (this is unless a breach of confidentiality is necessary to protect the survivor or another person from serious harm, or where required by law).

GBV and VAC Allegation Procedures should specify:

1. Who survivors can seek information and assistance from.
2. The process for community members and employees to lodge a complaint through the GM should there be alleged GBV or VAC.
3. The mechanism for how community members and employees can escalate a request for support or notification of violence if the process for reporting is ineffective due to unavailability or non-responsiveness, or if the employee's concern in not resolved.

Financial and Other Supports to survivors can include:

1. No/low interest loans.
2. Salary advances.
3. Direct payment of medical costs.
4. Coverage of all medical costs related specifically to the incident.
5. Upfront payments for medical costs to later be recouped from the employee's health insurance.
6. Providing or facilitating access to childcare.
7. Providing security upgrades to the employee's home.
8. Providing safe transportation to access support services or to and from accommodation.

Based on the rights, needs and wishes of the survivor, survivor support measures to ensure the safety of the survivor who is an employee can include[38]:

1. Changing the perpetrator or survivor's span of hours or pattern of hours and/or shift patterns.
2. Redesigning or changing the perpetrator or survivor's duties.
3. Changing the survivor's telephone number or email address to avoid harassing contact.
4. Relocating the survivor or perpetrator to another work site/ alternative premises.
5. Providing safe transportation to and from work for a specified period.

[38] It is critical that a survivor centered approach be adopted. The survivor should be fully involved in the decision making. Except for exceptional circumstances the perpetrator should be required to take appropriate actions to accommodate the survivor (e.g. move, change hours, etc.), rather than the survivor changing.

6. Supporting the survivor to apply for an Interim Protection Order or referring them to appropriate support.
7. Taking any other appropriate measures including those available under existing provisions for family friendly and flexible work arrangements.

Leave options for survivors that are employees can include:

1. An employee experiencing GBV should be able to request paid special leave to attend medical or psychosocial appointments, legal proceedings, relocation to safe accommodation and other activities related to GBV.
2. An employee who supports a person experiencing GBV or VAC may take care givers leave, including but not limited to accompanying them to court or hospital, or to take care of children.
3. Employees who are employed in a casual capacity may request unpaid special leave or unpaid care givers leave to undertake the activities described above.
4. The amount of leave provided will be determined by the individual's situation through consultations with the employee, the management and the GCCT where appropriate.

Potential Sanctions to employees who are perpetrators of GBV and VAC include:

1. Informal warning
2. Formal warning
3. Additional Training
4. Loss of up to one week's salary.
5. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
6. Termination of employment.
7. Referral to the Police or other authorities as warranted.

15.16 Annex 16: Voluntary Land Donation or Lease Form

This form or an equivalent document is to be used to record the consent of landowners who offer private land for a good community activity. The essentials of voluntary donation are that the donors have been freely consulted prior to the donation, were not pressured or coerced, that the donation will not affect a significant proportion (more than 10%) of their productive assets, and that they have the right to refuse and to lodge a complaint if they have a grievance about the process.

Consent Form for Voluntary Donation

I/We: _____ male household head _____female household head, and/or person(s) exercising customary rights over land described as (legal description, GPS coordinates if available) in

Village_____

Island_____

Province _____

Hereby declare that I/we/the group are the owners/users of the land required for (description): _____

I/we are voluntarily donating the use of land and or/ land-based assets (land area, type of assets /trees/crops, etc.) _____

_____

for the purpose of: (specify activity)

_____

_____

We agree to this purpose from (date)_____ for as long as the purpose is served *or* until (specify end date, typically the life expectancy of the facility) _____

I/we make this donation of My/Our own free will. I/We are waiving My/Our right to compensation of any kind for the specified duration of the activity.

I/We affirm that we have been fully and freely consulted and informed about the activity prior to agreement, have not been subject to any form of coercion, understand that I/we have the right to refuse, and to seek redress for any grievance concerning this transaction.

Signed:

Male household head _____ /Female household head_____

Chief or Local Custom Authority_____

15.17 Annex 17: Detailed ESMP Checklist for Sub-Projects Screening

Inspection Items	YES/NO	Remarks (Specify location, good practices, problem observe, possible causes of non-conformity and proposed corrective/preventative actions, etc.)
A. Environmental Management		
1.0 Regulatory Compliances		
1.1 Appropriate permissions/ approvals/ clearances obtained before commencement of construction	[ ] Yes/ [ ] No	Attach copies during the assessment period
1.2 EPA permit obtained for construction works?	[ ] Yes/ [ ] No	Attach copy
1.3 Construction Environmental Management Plan developed prior to construction works	[ ] Yes/ [ ] No	
1.3. Intimation given about the distribution line project to relevant institutions and agencies?	[ ] Yes/ [ ] No	
2.0 Air & Water Quality		
2.1 Regular sprinkling of water to suppress dust emissions during dry season?	[ ] Yes/ [ ] No	
2.2 Idling construction vehicles are shut-down/ switched-off to arrest vehicular exhaust fumes and mitigate air pollution?	[ ] Yes/ [ ] No	
2.3 Appropriate measures taken to prevent oil/ lubricants/ wastewater/ cement/ other contaminants from entering into water bodies?	[ ] Yes/ [ ] No	
2.4 Excavated area has been backfilled and compacted properly?	[ ] Yes/ [ ] No	
2.5 Excavated topsoil properly stored and covered to prevent erosion during the rainy season	[ ] Yes/ [ ] No	

2.6 Excess soil removed and disposed from the site	[ ] Yes/ [ ] No	
3.0 Waste Management		
3.1 Waste Management Procedure is developed for management of both hazardous and non-hazardous waste?	[ ] Yes/ [ ] No	Attach copy of waste management plan

3.2 Installation of garbage bins for bio-degradable, recyclable and unrecyclable?	[ ] Yes/ [ ] No	
3.3 Disposal of segregated construction waste at designated disposal sites?	[ ] Yes/ [ ] No	
3.4 All waste and construction materials from worksite are removed from working areas	[ ] Yes/ [ ] No	
All waste and construction materials from worksite are stacked in designated storage areas	[ ] Yes/ [ ] No	
4.0 Noise		
4.1 Construction site properly barricaded?	[ ] Yes/ [ ] No;	
4.2 Only well-maintained mechanical equipment is operated on-site?	[ ] Yes/ [ ] No;	
4.3 Shut down or throttle down to a minimum equipment that may be intermittent in use?	[ ] Yes/ [ ] No;	
4.4 Scheduled noisy activities during the morning hours informing the locals when noisy activities are planned?	[ ] Yes/ [ ] No;	
4.5 Provide ear plugs or mufflers for workers to reduce vibration on construction equipment?	[ ] Yes/ [ ] No;	
5.0 Occupational Health and safety		

5.1 Risk assessment is conducted and analyzed for the given task?	[ ] Yes/ [ ] No	
5.2 If high risk involved, has the Standard Working Procedure been followed?	[ ] Yes/ [ ] No	
5.3 Occupational Health and Safety Standards are in Place?	[ ] Yes/ [ ] No	
5.4 Occupational Health and Safety Standards are met?	[ ] Local; [ ] International; [ ] Company	
5.5 Installation of Road Signs to warn pedestrians/ motorists?	[ ] Yes/ [ ] No	
5.6 Installation of Diversion Signs to warn pedestrians/ motorists?	[ ] Yes/ [ ] No	
5.7 Installation of Danger Signs to warn pedestrians/ motorists?	[ ] Yes/ [ ] No	

5.8 Safety Officer is available onsite and knowledgeable of associated risks/hazards?	[ ] Yes/ [ ] No	
5.9 Standard Operating Procedure for the given task available onsite?	[ ] Yes/ [ ] No	
5.10 Daily Tool Box Talk is conducted and recorded?	[ ] Yes/ [ ] No	
5.11Construction Crew is equipped with appropriate Safety Gear or Personal Protective Equipment (PPEs)?	[ ] Yes/ [ ] No	
5.12 Safety precaution are adhered while working at heights?	[ ] Yes/ [ ] No	
5.13 Trained First Aider available to administer first aids?	[ ] Yes/ [ ] No	

5.14 Emergency Response/Vehicles/Contact details available?	[ ] Yes/ [ ] No	
5.15Any accident/incident/Near miss occurred during construction works?	[ ] Yes/ [ ] No	
Accident/Near miss recorded and reported?	[ ] Yes/ [ ] No	Attach records/photographs
5.16 Construction Vehicles maintain speed limits?	[ ] Yes/ [ ] No	
5.17 Construction workers are aware about Health and Hygiene?	[ ] Yes/ [ ] No	
5.18 Construction workers are provided with safe drinking water?	[ ] Yes/ [ ] No	
5.19 Construction workers are provided with appropriate resting area/shed during lunch/rest time?	[ ] Yes/ [ ] No	
6.0 Flora and Fauna		
6.1 Critical biodiversity areas avoided during construction works	[ ] Yes/ [ ] No	
6.2 Right-of ways utilized to avoid important natural areas such as wild lands and sensitive habitats.	[ ] Yes/ [ ] No	
7.0 Social Management		
7.1 Public sensitization conducted?	[ ] Yes/ [ ] No	attach public sensitization plan
7.2 Information of working hours and type of work shared with community members?	[ ] Yes/ [ ] No	

7.3 Local Un-skilled workers have been engaged?	[ ] Yes/ [ ] No	
7.4 Their payment is made on?	[ ] Daily; [ ] Weekly; [ ] Monthly basis	
7.5 Reported cases of Child Labor?	[ ] Yes/ [ ] No	
7.6 Reported cases of sexual exploitation?	[ ] Yes/ [ ] No	
7.7 Construction workers are aware about Communicable diseases, including Mpox, STD, Venereal diseases?	[ ] Yes/ [ ] No	
7.8 Places/ Spaces/ Objects of Historic, Cultural, and Religious Sites found in/around the RoW and working areas?	[ ] Yes/ [ ] No; If Yes, To whom and How it was reported	
379 Is Grievance Mechanism (GM) in place?	[ ] Yes/ [ ] No	**Document grievances** (Workforce, Project Affected Persons) and conflict resolution activities;
7.10 Number of Grievances Redressed?		Specify:
7.11 Any case of dissatisfied recipient?	[ ] Yes/ [ ] No;	Reasons for dissatisfaction:
7.12 Number of Grievance Redressals Pending?		Specify:

7.13 Reasons for pending cases		State Reason (s): 1._____ _____ _____ 2._____ _____
Attach copies of the GM Register for the reporting duration		

Signed by Environment Specialist:

Name: _____

Title: _____

_____

Signed by Project Manager:

Name: _____

Title: _____ Date:

Date: _____

15.18 Annex 18: ESHS Clauses for Construction Contractor

Adequate selection of project site and right of way and appropriate project design can have a significant influence on the magnitude of the associated environmental impacts and the proper environmental management of energy and electricity distribution projects in Liberia. As such, the EA for projects involving any new constructions should provide information on screening criteria for site selection and design, including the following:

- Site selection
- Sites should be chosen based on community needs for additional projects, with specific lots chosen based on geographic and topographic characteristics. The site selection process involves site visits and studies to analyze:
- The site's urban, suburban, or rural characteristics;
- National, counties, or municipal regulations affecting the proposed lot;
- Accessibility and distance from inhabited areas; o Land ownership, including verification of absence of squatters and/or other potential legal problems with land acquisition;

o Determination of site vulnerability to natural hazards (i.e., intensity and frequency of floods, earthquakes, landslides, hurricanes, volcanic eruptions);

- Suitability of soils and subsoils for construction;
- Site contamination by lead or other pollutants;
- Flora and fauna characteristics;
- Presence or absence of natural habitats (as defined by OP 4.04) and/or ecologically important habitats on site or in vicinity (e.g., forests, wetlands, coral reefs, rare or
- endangered species); and
- Historic and community characteristics.

After choosing an appropriate site and design, the contractor needs to prepare his own EMP including health and safety at construction site, a traffic management plan, a waste management plan, chance-find procedures for physical cultural resources, etc. The EMP needs to be approved by the EPA and the World Bank. The contractor is responsible for the implementation of the EMP and is supervised by an independent consultant.

As construction activities could cause significant impacts on and nuisances to surrounding areas, careful planning of construction activities is critical. These are generally consistent for all power generation activities due to the similarity of the works involved. The following rules (including specific prohibitions and construction management measures) should be incorporated into all relevant bidding documents, contracts, and work orders.

Prohibitions:

The following activities are prohibited on or near the project site:

(1) Cutting of trees for any reason outside the approved construction area;
(2) Hunting, fishing, wildlife capture, or plant collection;

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(3) Use of unapproved toxic materials, including lead-based paints and asbestos;
(4) Disturbance to anything with architectural or historical value;
(5) Building of fires;
(6) Use of firearms (except authorized security guards); and
(7) Use of alcohol by workers.

Construction management measures:

Dust and other air pollution emissions:

(1) Watering of surfaces and/or chemical stabilization
(2) Reduction of surface wind speed with windbreaks or source enclosures
(3) Covering the road surface with a new material of lower silt content
(4) Grading of gravel roads
(5) Proper site enclosure through appropriate hoarding and screening;
(6) Maintaining minimal traffic speed on-site and on access roads to the site;
(7) Covering all vehicles hauling materials likely to give off excessive dust emissions;
(8) Ensuring adequate maintenance and repair of construction machinery and vehicles;
(9) Avoiding burning of material resulting from site clearance;
(10) Covering any excavated dusty materials or stockpile of dusty materials entirely by impervious sheeting;
(11) The provision of water troughs at entry and exit points to prevent the carryover of dust emissions, beyond the construction site
(12) Proper truck maintenance
(13) Turning off equipment when not in use ***Noise****:*
(1) Enclosing the site with barriers/fencing
(2) Effectively utilizing material stockpiles and other structures to reduce noise from on- site construction activities
(3) Choosing inherently quiet equipment
(4) Operating only well-maintained mechanical equipment on-site
(5) Maintaining all construction-related traffic at or below 15 mph on streets within 200 m of the site.
(6) Maintaining all on-site vehicle speeds at or below 10 mph.
(7) To the extent possible, maintaining noise levels associated with all machinery and equipment at or below 90 db.
(8) Keeping equipment speed as low as possible
(9) Shutting down or throttling down to a minimum equipment that may be intermittent in use
(10) Utilizing and properly maintaining silencers or mufflers that reduce vibration on construction equipment
(11) Restricting access to the site for truck traffic outside of normal construction hours
(12) Proper site logistics and planning

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(13) Limiting site working hours if possible
(14) Scheduling noisy activities during the morning hours
(15) Informing the locals when noisy activities are planned

Solid waste management:

(1) Use of generated construction debris materials for reclamation purposes whenever applicable, after ensuring the absence of contamination and the adequacy of the physical and chemical properties of such material
(2) Minimization of construction and demolition wastes through careful planning during the design stage, whereby reducing or eliminating over-ordering of construction materials
(3) Sorting of construction and demolition wastes into various categories and adopting reuse/recycle on site whenever deemed feasible.
(4) Segregating chemical wastes and properly storing and disposing of it as hazardous waste.
(5) Storing chemical wastes in a separate area that has an impermeable floor, adequate ventilation and a roof to prevent rainfall from seeping
(6) Clearly labeling all chemical waste in English and Liberian, storing it in corrosion resistant containers and arranging so that incompatible materials are adequately separated
(7) Securing a prior agreement with the EPA for the disposal of hazardous waste generated on-site
(8) Drafting an agreement with the solid waste collector in the county where the project is being implemented to identify collection sites and schedule the removal to minimize odor, pest infestation and litter buildup
(9) Prohibiting the burning of refuse on the construction site
(10) Promoting recycling and reuse of general refuse. ***Wastewater management***
(1) Provide channels, earth bunds or sand bag barriers to properly direct storm water to silt removal facilities
(2) Use adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins before discharge into the surrounding waters
(3) Maintain silt removal facilities by regularly removing deposited silt and grit
(4) Discharge rainwater pumped out from trenches or foundation excavations into storm drains via silt removal facilities and not directly to the aquatic environment
(5) Cover open stockpiles of construction materials on site with tarpaulin or similar fabric during rainstorm events to prevent the washing away of construction materials
(6) Compact earthworks as soon as the final surfaces are formed to prevent erosion especially during the wet season
(7) Collect and connect water used in vehicle and plant servicing areas to foul sewers via an oil/grease trap. Oil leakage or spillage should be contained and cleaned up immediately
(8) Collect spent oil and lubricants and store them for recycling or proper disposal

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(9) Prepare guidelines and procedures for immediate clean-up actions following any spillages of oil, fuel or chemicals.

(10) Contain sewage from toilets, kitchens and similar facilities in sanitary cesspools before being transported by trucks to a nearby wastewater treatment plant

Health and safety

(1) Restriction of access to the construction site by proper fencing

(2) Establishment of buffering areas around the site

(3) Provision of guards on entrances and exits to the site

(4) Installation of warning signs at the entrance of the site to prohibit public access

(5) Provision of training about the fundamentals of occupational health and safety procedures

(6) Provision of appropriate personal protective equipment (PPE) (impermeable latex gloves, working overalls, safety boots, safety helmets, hearing protecting devices for workers exposed to noise levels exceeding 90 dBA, and lifesaving vests for construction sites near water bodies) that workers can swim and that lifesaving rings are available at the worksite, near water

(7) Ensuring that the protective material is being used wherever it is required

(8) Ensuring that especially sensitive or dangerous areas (like areas exposed to high noise levels, areas for especially hazardous work etc.) are clearly designated

(9) Ensuring that all maintenance work necessary for keeping machines and other equipment in a good state will be regularly carried out.

(10) Ensuring that the workers are qualified, well trained and instructed in handling their equipment, including health protection equipment.

(11) Provision of adequate loading and off-loading space

(12) Development of an emergency response plan

(13) Provision of on-site medical facility/first aid

(14) Provision of appropriate lighting during night-time works

(15) Implementation of speed limits for trucks entering and exiting the site

(16) Ensuring that hazardous substances are being kept in suitable, safe, adequately marked and locked storing places

(17) Ensuring that containers of hazardous substances are clearly marked, and that material safety data sheets are available

(18) Ensuring that all workers dealing with hazardous substances are adequately informed about the risks, trained in handling those materials, and trained in first aid measures to be taken in the case of an accident

(19) Designating an area where contaminated materials and hazardous waste can be stored for proper disposal according to environmental guidelines

(20) The adoption of good housekeeping practices for ensuring hygiene on site

(21) The elimination of pools of stagnant water, which could serve as breeding places for mosquitoes

(22) The provision of bed nets for workers living on site.

(23) The appropriate elimination of waste of all types, including wastewater

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(24) The provision of a safety specialist responsible for the preparation, implementation and maintenance of a comprehensive safety program

(25) For the construction of fuel supply facilities, provision of fire-fighting equipment such as dry powder extinguishers

(26) Conducting fire-fighting and leak checks training drills for the construction staff

(27) Prohibition of smoking as well as litter or weed build-up in the area as these may pose fire risks

Environmental Supervision during Construction

The bidding documents should indicate how compliance with environmental rules and design specifications would be supervised, along with penalties for non-compliance by contractors or workers. Construction supervision requires oversight of compliance with the manual and environmental specifications by the contractor or his designated environmental supervisor. Contractors are also required to comply with national and municipal regulations governing the environment, public health, and safety.

15.19 Annex 19: Chance Find Procedure

Chance finds are defined as physical cultural resources encountered unexpectedly during project implementation. Chance Find Procedures includes provisions for managing the aforementioned encountered chance finds. These include the following:

- In the case of a chance find of any sites or artifacts of historical, cultural, archeological or religious significance, all construction activity in the vicinity of the find/feature/site will cease immediately.
- The discovery will be clearly delineated and secured, and all found remains will be left in situ.
- An LEC assigned archaeological consultant will assess, record and photograph the find/feature/ site.
- In consultation with the Ministry of Information, Culture and Tourism, the assigned Archaeologist will complete a report on the findings and determine the appropriate course of action to take.
- An on-site finds storage area will be provided, allowing storage of any artifacts or other archaeological material recovered during the process.
- A conservator will be made available to the project, if required, and will decide on the disposition of any found samples or relics.
- Once authorization has been given by the Ministry of Information, Culture and Tourism, the proponent will be informed when works can resume.

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15.20 Annex 20: DRE Companies ESMS - Basic Requirements

The ESMS is a set of principles, requirements, processes, and tools that help integrate environmental and social risk management into a mini-grid developer's core business process. It is a set of actions and procedures that are implemented with the developer's existing risk management procedures.

The ESMS ensures that the mini grid developer's activities comply with its own environmental and social commitments, national regulations of the country where they operate, and environmental and social standards of international lenders and investors. It helps the developer to avoid and manage projects with potential environmental and social risks by conducting due diligence during design, construction, and operation of mini grids, and adequate monitoring of projects during construction and operation

Human Resources Policy

DRE companies will have in place an HR policy that expresses its commitments, at a minimum to: (1) comply with all relevant national labor laws and regulations; (2) promote the fair treatment, non-discrimination, and equal opportunity for workers; (3) establish, maintain, and improve the worker-management relationship; (4) allow workers' organizations and collective bargaining; (5) have in place a grievance mechanism for workers; (6) not to employ forced labor or child labor, including not hiring workers below minimum age, as defined by national law and not employ children in hazardous work.[39]

DRE companies will adopt and implement human resources policies and procedures appropriate to its size and workforce that set out their approach to managing workers consistent with the requirements of national law. It will provide workers with documented information that is clear and understandable, regarding their rights under national labor and employment law and any applicable collective agreements, including their rights related to hours of work, wages, overtime, compensation, and benefits upon beginning the working relationship and when any material changes occur. It will provide and inform workers of an internal grievance process to raise their workplace concerns.

Occupational Safety & Health Policy/ Guideline

DRE companies will provide a safe and healthy work environment, taking into account inherent risks in its particular sector and specific classes of hazards in the work areas, including physical, chemical, biological, and radiological hazards, and specific threats to women. It will take steps to prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by minimizing, as far as reasonably practicable, the causes of hazards. OHS Guideline will also include steps, as relevant, for Mpox prevention. It will also include a concrete plan for monitoring compliance with the Guideline in the SHS company operations.

Battery Collection/Recycling Policy

[39]Employees may only be taken if they are at least 15 years old, as defined in the ILO Minimum Age Convention (C138, Art. 2). Children under the age of 18 will not be employed in hazardous work. Children will not be employed in any manner that is economically exploitive, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health, or physical, mental, spiritual, moral, or social development.

If the DRE company has an existing battery collection and/or recycling policy, this should be submitted with the application.

It is preferred that batteries are recycled to potentially reuse some of their components, where economically and technically feasible. This would be equally applicable for expired batteries and the batteries that will be replaced within the warranty period due to a manufacturing fault or reasons outlined in the warranty conditions.

The company shall systematically collect used battery units and engage with communities on the importance of recycling if such a program is in place. The suggested options that can be considered are:

A. Collection of Batteries by SHS Companies: SHS company representatives will make arrangements to collect the battery units from the consumer and store them in the local offices. SHS company will take necessary measures to ensure the safe storage of the batteries. It may be feasible for the DRE company to send the warranty-expired batteries to a central location.

B. Potential battery disposal/recycling options can be as follows:

- Buy-back arrangements with manufacturers: DRE company can put in place buy-back arrangements with the battery manufacturers and ensure safe transportation of the batteries to the manufacturer. DRE company and manufacturers can mutually decide on cost sharing of collection and transportation of expired batteries, for example, sign a Memorandum of Understanding signed between them.

- Recycling at own facilities: DRE companies may consider establishing their own recycling facilities. Recycling of lithium-ion batteries is possible, but according to research and practice, it makes little economic sense. Lithium-ion batteries can be recycled, but only at specified locations. Projects are currently underway in Europe, the United States, and Japan to develop effective and feasible recycling technologies with a complete life cycle analysis of recycling.

- Recycling at centralized locations in the country: If recycling facilities for lithium-ion batteries exist, DRE companies must use those that are inspected by RREA and the EPA and are considered safe and compliant with national regulations and World Bank standards;

- Disposal: Lithium-ion batteries are qualified as household hazardous waste.[40] SHS company will ensure that the batteries are disposed of in a particular designated area, ensuring environmental and occupational health and safety in line with World Bank E&S standards and Environmental, Health, and Safety Guidelines of the World Bank Group. DRE companies will also comply with the government regulations, if any, regarding the disposal of any of the components used in the battery units.

[40] In some countries, they are classified as non-hazardous waste.