Appraisal Environmental and Social Review Summary

Appraisal Stage

(ESRS Appraisal Stage)

Date Prepared/Updated: 05/15/2024 | Report No: ESRSA03507

I. BASIC INFORMATION

A. Basic Project Data

Country	Region	Project ID	Parent Project ID (if any)
Liberia	WESTERN AND CENTRAL AFRICA	P180498	
Project Name	Liberia Electricity Sector Strengthening And Access Project (lessap) Phase 2		
Practice Area (Lead)	Financing Instrument	Estimated Appraisal Date	Estimated Board Date
Energy & Extractives	Investment Project Financing	5/27/2024	6/24/2024
Borrower(s)	Implementing Agency(ies)	Estimated Decision Review Date	Total Project Cost
		5/22/2024	51,500,000

Proposed Development Objective

The PDO is to expand the access to electricity services, and enhance the operational performance of the Liberia Electricity Corporation (LEC).

B. Is the project being prepared in a Situation of Urgent Need of Assistance or Capacity Constraints, as per Bank IPF Policy, para. 12?

No

C. Summary Description of Proposed Project Activities

[Description imported from the PAD Data Sheet in the Portal providing information about the key aspects and components/sub-components of the project]

The investments proposed under the second phase of the LESSAP MPA will help address the poor operational and commercial performance of LEC leading to a financial turnaround of LEC as well as the low access to electricity to allow for achieving universal access to electricity within a reasonable timeframe. These include rehabilitation and expansion of the electricity infrastructure and systems, enhancement of LEC financial performance, off-grid electrification of households and public facilities and stimulation of productive uses in rural areas. The second phase will have the following components:

Component 1: Rehabilitation and Expansion of Electricity Infrastructure and Systems and Enhancement of LEC Revenue Protection: This will expand the supply and installation of the Supervisory Control and Data Acquisition (SCADA) System initiated under the first phase the MPA to ensure oversight, proactive network problem detection and resolution, adequate network reliability and requisition of required power quality data for real time operational

decision. The component will also support the LEC Revenue Protection Program which will include various activities: (i) Enhance the installation of an advanced-metering infrastructure (AMI) platform under the first phase to include the connection and monitoring of large commercial customers via Meter Data Management (MDM), ensuring accurate measurement of their consumption and prevent tampering with metering systems; (ii) Procurement of 50,000 prepayment meters for households that will support the replacement of damaged meters, new connections and regularization of illegal connections; (iii) Enhancements to the LEC Integrated Management System through the addition of a Geographic Information System (GIS), a Field Service Management System (FSMS), installation of a mobile add-on to the Enterprise Asset Management module and the implementation of the Asset and Customers Mapping Survey (ACMS) for LEC to have accurate information at the point of sale of electricity due to the outdated and inaccurate customer database.

Component 2: Off-grid Electrification of Households, Public Facilities, and Stimulation of Productive Uses in Rural Areas: This component will scale up the activities under the first phase off-grid electrification component with a focus on mobilizing private capital. This will include electrification of public facilities in rural areas through provision of Solar PV services to selected health facilities to enhance the delivery of healthcare services and improve their resilience, as well as electrification of pilot education facilities. The project will initiate with identification of education facilities, conduct energy surveys for categorization of sites and build a standardized, modular approach similar to the design of health facilities electrification implemented under the first phase of MPA. The project will also scale up deployment of productive use enterprises and solar home systems with about 200,000 solar home systems distributed to residential end-users, by injection of subsidies through Results-based-Financing, to ensure affordability of solar home systems for households in vulnerable communities and provide an enabling environment for strengthening the distribution network of local companies. The second phase of the MPA would also benefit from an online RBF platform currently under implementation under the first phase which automates the claiming processes and improves efficiency for deployment of the RBF subsidies. The project will support the design and implementation of privately delivered mini grids to dispersed communities. The first phase has already conducted detailed pre-feasibility assessments of 47 sites and conducted financial viability of each site to calculate subsidy levels. The pilot will be used to demonstrate the technical and commercial viability of mini-grid development in Liberia and its attractiveness to the private sector.

Component 3: Technical Assistance, training and capacity building of sector institutions and project implementation support: This component will cover the cost of strengthening the capacity of LEC Project Management Team (PMT) to manage and monitor implementation activities. It will include financing the cost of specialized consultants (technical, financial, procurement, audit, safeguards, etc.) and project staff to support the PMT, the preparation of technical design and safeguards documents, community engagement and sensitization programs, working on inclusivity and implementation of gender actions plans amongst others.

D. Environmental and Social Overview

D.1 Overview of Environmental and Social Project Settings

[Description of key features relevant to the operation's environmental and social risks and opportunities (e.g., whether the project is nationwide or regional in scope, urban/rural, in an FCV context, presence of Indigenous Peoples or other minorities, involves associated facilities, high-biodiversity settings, etc.) – Max. character limit 10,000]

The grid densification component of the project will be executed in Greater Monrovia, located in Montserrado County, while, the off-grid elements are set to benefit rural public facilities across the 15 counties, including support for the design and implementation of privately delivered mini grids for dispersed communities in rural areas. Montserrado County, which houses the nation's capital, Monrovia, is the most populous county, with an estimated 1,735,000, residents, accounting for roughly 33.5% of the national population (2024). The project's first two

components aim to bolster the upgrading and rehabilitation of the distribution network, including medium and low voltage lines, load break switches, transformers, and off-grid solar electrification. The identification of specific locations for the distribution network and off-grid solar electrification initiatives were done under LESSAP's Phase I. Environmental and Social Framework (ESF) tools such as the Environmental and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF), developed under LESSAP I will be updated adopted and disclosed by effectiveness. These tools will guide the environmental and social screening and the preparation of Environmental and Social Management Plans (ESMPs) for proposed additional sites for MV lines under Phase II. Resettlement Action Plans (RAP) are likely to be developed to address land acquisition, land use restrictions, and involuntary resettlement concerns for mini grade subproject activities. .

The project's activities span several counties, some of which contain protected natural areas. However, construction and rehabilitation efforts will primarily occur in urban settings, minimizing the likelihood of natural resource disturbances. Social risks associated with the project include unemployment, the potential exclusion of Below Poverty Line (BPL) individuals from accessing the electricity provided, labor influx, Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH), and possible, but not likely, land acquisition, land use restrictions, and involuntary resettlement.

D.2 Overview of Borrower's Institutional Capacity for Managing Environmental and Social Risks and Impacts

[Description of Borrower's capacity (i.e., prior performance under the Safeguard Policies or ESF, experience applying E&S policies of IFIs, Environmental and social unit/staff already in place) and willingness to manage risks and impacts and of provisions planned or required to have capabilities in place, along with the needs for enhanced support to the Borrower – Max. character limit 10,000]

The Liberia Electricity Sector Strengthening and Access Project (LESSAP) Phase II involves the Liberia Electricity Corporation (LEC) and the Rural and Renewable Energy Agency (RREA) which are implementing ongoing Bank-funded projects, including; LESSAP, Liberia Renewable Energy Access Project (LIRENAP), the Regional Emergency Solar Power Intervention Project (RESPITE), and the completed Liberia Accelerated Electricity Expansion Project (LACEEP). Both LEC and RREA maintain internal units and dedicated environmental and social safeguards staff for managing and monitoring environmental and social impacts of the projects. The ESMU at LEC has about six E&S development officers led by an Environmental Specialist and together with a Social and Gender Specialist. The long-serving safeguards staff of LESSAP and LIRENAP have benefited from skills enhancement on Environmental and Social Safeguards (ESS), Environmental and Social Framework (ESF) and occupational health and Safety (OHS) trainings to manage safeguards risks. The staff at both PIUs have completed fundamental training on ESF and continue to attend regular workshops and training organized by the World Bank.

The PMU of RREA is led by a project coordinator and project engineers, procurement specialists, and safeguard specialists. The RREA's finance director provides financial management of the project, while the procurement director has enhanced oversight of all procurement activities. To enhance the capacity in implementation and knowledge in ESF/ESS, the staff involved in E&S works will be regularly trained by tailor-made training for this group of staff, keeping the project's needs in mind to update proficiency and discuss the challenges in E&S implementation. A training manual identifying the needs shall be developed, including the timeline, training needs, type of training, and categories of participating staff. The requirements for training and manual development will be included in the updated Environmental and Social Commitment Plan (ESCP).

II. SUMMARY OF ENVIRONMENTAL AND SOCIAL (ES) RISKS AND IMPACTS

A. Environmental and Social Risk Classification (ESRC) Moderate

A.1 Environmental Risk Rating Moderate

[Summary of key factors contributing to risk rating, in accordance with the ES Directive and the Technical Note on Screening and Risk Classification under the ESF – Max. character limit 4,000]

LESSAP II's components 1 & 2 will support ongoing upgrading and rehabilitation of the distribution network, including medium and low voltage lines, installation of new transformers, support to the design and implementation of privately delivered mini grids for dispersed communities in rural areas and off-grid solar electrification that are more beneficial to the public. However, these activities are likely to have negative impacts on the environment. The proposed distribution line will involve planting of wood poles (footprint is ≤0.6m) along the existing ROW of avenues, etc. Apart from occasional tree brushings/trimmings/cuttings during construction and operation, there are hardly negative E&S impacts encountered in such distribution lines. Hence, the scope and nature of the support to the design and implementation of the privately owned mini-grid for dispersed communities aren't known at this stage, as such, the impacts of distribution network construction and off-grid solar electrification and the mini-grid are mostly positive. The potential environmental impacts during the construction phase will include vegetation clearing, noise pollution from heavy vehicles, soil erosion from excavations for wood pole planting and mini-grid foundation works, fugitive dust and other emissions, and various wastes such as metal, plastic, electronic wastes (E-waste) and potential for hazardous materials and oil spills associated with heavy vehicle operation and fueling activities, among others that are typical to medium-scale electrical installation works which will be handled and disposed of according to national requirements and GIIP. The Borrower will update, disclose and adopt the ESMF and RPF prepared under Phase I for Phase II by effectiveness, which will then guide the preparation of subsequent E&S screening and ESMPs according to ESF, GIIP, and WB EHS Guidelines. The Borrower is required to update and adopt the SEP prepared under Phase I, and SEA/SH Action Plan by appraisal. The Existing ESCP for Phase I will be updated for Phase II to address the environmental and social obligations of the borrower as by the relevant ESSs and national regulations. HWMPs and E-waste plans will be prepared as part of ESMP in line with the Bank's EHS Guidelines and the Environment Protection Management Law of Liberia (2003). The Borrower has a relevant legal framework for addressing E&S risks and impacts. The project-implementing agencies have experience implementing World Bank-funded projects and are familiar with the Bank's safeguard policies and ESF, under which this project is being prepared. Based on the nature of potentially adverse environmental impacts that are likely to be site-specific, and manageable with appropriate mitigation measures in place, and the borrower's capacity to implement mitigation measures, the project environmental risk is assessed and rated as moderate and may change by appraisal if the scope and nature of the mini-grid is made clearer.

A.2 Social Risk Rating Moderate

[Summary of key factors contributing to risk rating, in accordance with the ES Directive and the Technical Note on Screening and Risk Classification under the ESF – Max. character limit 4,000]

The project social impacts will enhance the quality of individual and community life, keep health and education facilities better and benefit the common Liberian, however, the project intervention may increase the risks of corruption during intensification of energy connections, widen discrimination between consumers and non-

consumers, increase the cost of education and health facilities, and may exclude the most poor, poor and vulnerable. The power distribution line will involve erection of wooden poles (≤0.6sqm without civil works) within unused space of ROW of existing community roads, streets, avenues or open/unused community land. Thus, no significant negative socio-economic impacts due to involuntary resettlements are anticipated, however, sub-component 2C: private sector led mini grid development may trigger ESS 5 for land acquisition, restriction on the land use and involuntary resettlement. ESS 08 for risks and impacts related to cultural heritage may also be triggered for the project. The project activities under components 1 and 2 may have the potential to expose the public/communties to health and safety risks and hazards. These activities include, grid extension works with the potential to expose the public to electrical hazards, and the use of batteries containing hazardous substances that need to be disposed every three years etc. Electrocution and electromagnetic interference from distribution network and substations might also pose community health and safety risk. However, No significant negative impacts on the health, safety and well-being of workers are anticipated. The outputs of community consultations and engagements have shown positive response for the project. Component 3 will further support intensive community engagement and sensitization, enhance efforts for social inclusion and resources for Gender action plan (GAP) implementation. The GAP is prepared under LESSAP Phase I to enhance opportunities for women and girls.

B. Environment and Social Standards (ESS) that Apply to the Activities Being Considered

B.1 Relevance of Environmental and Social Standards

ESS1 Assessment and Management of Environmental and Social Risks and Impacts — Relevant

[Explanation - Max. character limit 10,000]

The activities under components 1 & 2 are likely to have negative impacts on the project environment. Components 1 and 2 will upscale upgrading and rehabilitation of the distribution network (MV and LV lines, Load Break Switches, transformers, etc.) and solar home system, including support Support to the design and implementation of privately delivered mini grids for dispersed communities in rural areas. The potential environmental impacts during the construction phase will include noise pollution from heavy vehicle, soil erosion from excavations for wood pole planting, fugitive dust and other emissions, and various wastes such as electronic, metal, plastic, electronic wastes (E-waste) and potential for hazardous materials and oil spills associated with heavy equipment operation and fuelling activities, among others that are typical to medium-scale electrical installation works which will be handled and disposed of according to national requirements and GIIP. HWMPs and E-wastes plan will be prepared as part of ESMP in line with the Bank EHS Guidelines and the Environment Protection Management Law of Liberia (2003).

ESS2 Labor and Working Conditions — Relevant

[Explanation - Max. character limit 10,000]

All non-technical workers shall be hired from the local communities and project area. The induction training shall be conducted before start of the work. The local worker will understand and respect the social norms and practices and maintain dignified behaviours. The LESSAP's LMP will be updated in provision of the Descent Work Act of Liberia (2015) and other relevant laws and regulations of Liberia after thoroughly reviewing the country system and the LMP shall be disclosed prior to effectiveness of the project. The workers shall sign code of conduct before joing the work for project.

ESS3 Resource Efficiency and Pollution Prevention and Management Relevant

[Explanation - Max. character limit 10,000]

ESS3 is relevant for the project regarding energy and water use, air pollution and noise impacts, and construction waste, during construction phases, handling and disposal of hazardous chemicals and waste, and the disposal of end-of-life batteries containing hazardous materials during the operation phase.

During the rehabilitation and operation phase, handling and disposal of hazardous chemicals used in transformers and substations, such as mineral insulating oils, polychlorinated biphenlys (PCBs), sulphur hexafluoride (SF6) and disposal of faulty meters collected as per subcomponent 1b might also pose environmental risks as well as used battries that are to be generated during operation of the mini-grid under subcomponent 2c. Where wood poles are used for distribution networks, the use of chemicals for wood preservation and disposal of used poles might pose environmental, health and safety (EHS) risks. A mitigation hierarchy will be applied. The ESMF will be updated by effectiveness.

ESS4 Community Health and Safety Relevant

[Explanation - Max. character limit 10,000]

ESS4 is relevant for the project and associated with electrical installation works and other activities. Several activities under components 1 and 2 have the potential to expose the public to health and safety risks and hazards. These activities include, grid extension works with the potential to expose the public to electrical hazards, and the use of batteries containing hazardous substances that need to be disposed every three years etc. Electrocution and electromagnetic interference from distribution network and substations might also pose community health and safety risk. The assessment under ESS1 will further elaborate on these risks and provide appropriate mitigation measures. The implementing entities will institute a program that will seek to ensure the communities' safety and protection from hazards associated with the Project. During preparation, relevant national practices will be reviewed against the requirements of ESS4 and the World Bank's applicable EHS Guidelines.

ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement Not Currently Relevant

[Explanation - Max. character limit 10,000]

The project sub-components shall not require land or restrict any land use or involve any involuntary resettlement. The proposed off-grid electrification of household and public facilities shall use their own land to install the related infrastructures and no additional land will be required, however sub component 2C private sector led mini grid development may require minimal land so, ESS5 is currently not relevant/triggered, however the LESSAP phase I RPF shall be updated and disclosed prior to effectiveness, if required to guide future intervention.

ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources Not Currently Relevant

[Explanation - Max. character limit 10,000]

ESS 6 is not considered relevant to the project at this time as none of the project components will occur in natural habitats or in areas with biodiversity. The project components will be developed within urban areas or small towns.

ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities — Not Currently Relevant

[Explanation - Max. character limit 10,000]

Not applicable

ESS8 Cultural Heritage — Not Currently Relevant

[Explanation - Max. character limit 10,000]

In the ESMP, a chance find provision may be considered and triggered

ESS9 Financial Intermediaries — Not Currently Relevant

[Explanation - Max. character limit 10,000]

Not currently relevant

ESS10 Stakeholder Engagement and Information Disclosure — Relevant

[Explanation - Max. character limit 10,000]

The borrower is identifying and analyzing the stakeholders and also engaging with the various stakeholders to obtain their feedbacks, observations and comments before finalizing engagement plan. Component 3 of the project will support further engagement with the community & stakeholders and sensitization. The finalized SEP will be disclosed prior to appraisal and decision meeting on the project.

B.2 Legal Operational Policies that Apply

OP 7.50 Projects on International Waterways	No
OP 7.60 Projects in Disputed Areas	No

B.3 Other Salient Features

Use of Borrower Framework — In Part

[Explanation including areas where "Use of Borrower Framework" is being considered - Max. Character limit 10,000]

The project as a moderate risk project, may in part, rely on the Borrower's Framework. Before considering the borrower's framework, all relevant environmental and social laws, policies, regulations and E&S framework shall be thoroughly assessed and reviewed. After assessment and gap analysis, the E&S team shall advise on the relevant instruments ESSs and its update. The assessment report and updated instruments shall be disclosed and implemented

before the effectiveness of the project and then E&S team shall continuously monitor the project for adaptive E&S risks management as required.

Use of Common Approach No

[Explanation including list of financing partners – Max. character limit 4,000]

Not applicable

B.4 Summary of Assessment of Environmental and Social Risks and Impacts

[Description provided will not be disclosed but will flow as a one time flow to the Appraisal Stage PID and PAD – Max. character limit 10,000]

he environmental impacts during the construction phase will include construction site waste generation, soil erosion and sediment from excavation activities, site preparation activities, fugitive dust and other emissions (e.g., from vehicle traffic, and materials stockpiles), and noise from movement of equipment and truck traffic, potential for hazardous materials and oil spills associated with heavy equipment operation and fueling activities, among others that are typical to medium-scale electrical installation works.

During the construction/rehabilitation and operation phase, handling and disposal of hazardous chemicals used in transformers such as mineral insulating oils, disposal of faulty meters collected as per subcomponent 1b might also pose environmental risks and the construction of mini-grid as per subcomponent 2c. Where wood poles are used for distribution networks, the use of chemicals for wood preservation and disposal of used poles might pose environmental, health, and safety risks. There are also potential health and safety risks and hazards to workers (e.g., working at heights, close to live power lines, electric and magnetic fields, etc.), as well as to the community. Many of these risks and impacts are site-specific and manageable with appropriate mitigation measures.

Component 2 includes scale-up support to off-grid solar systems (OGS) under Phase 1, this will include the mounting of the solar modules on rooftops or mount them on poles next to the users' homes or buildings, which will reduce the fossil fuel-based energy production dependency. While the Battery Storage System for the OGS is not complex and would have a small installation footprint, there are several environmental risks associated with this activity that need to be managed. In particular, potential fire and explosion risks and environmental risks and hazards related to the disposal of end-of-life batteries containing hazardous materials.

Proper disposal or recycling of spent batteries at the end of their life, which is usually 3-5 years, is the main concern. The activities under component 1 will not require involuntary land acquisition, however activities under subcomponent 2c may require land acquision if the scope and nature of the mini-grid are known: (i) construction of lines for the distribution network (MV and LV) because they are expected to be installed in the existing ROW of the roads; and (ii) the OGS modules are expected to be installed on the roof of buildings or the poles for the streetlights, The initial screening under phase I, indicated that no land will be required since the MV and LV line will be installed along the right of way of existing road and communities. However, it has the potential to temporarily restrict access and disturb economic activities, labour accidents, and facilitate the perpetuation of gender inequalities through unequal employment opportunities for vulnerable groups. The project aims to improve the efficiency of the implementing entity by strengthening and reorganizing management to improve its capacity and reduce commercial

loss. Its OGS intervention will lead to improvements in energy resilience and efficiency and the decrease of CO2 emissions through the integration of more clean electricity from renewable sources. Overall, the project will have significant positive benefits at the household, public, and national levels. Despite positive benefits, there are several potential E&S risks and impacts associated with the project that will need to be mitigated. The locations for installation of MV and LV lines have been concluded and screened under Phase I with manageable risk. Similarly, the specific beneficiary health facilities and schools have been selected under Phase I.

The project interventions will enhance the quality of life. The proposed distribution line will not need to acquire or restrict land use. The unused space of ROW of existing roads, streets, avenues, etc. shall be used for erecting wooden poles and energy distribution using mitigation hierarch to avoid any impacts on the people or community. Thus, no significant E&S or cultural risks or any negative impacts are anticipated. The initial community consultations and engagements have shown very positive response for the project. Based on the nature of potentially adverse social impacts that are likely to be moderate. The impacts may be site-specific, if any, and manageable with appropriate mitigation measures. No significant negative impacts also anticipated on the health, safety and well-being of workers or project communities or risks on the cultural heritage.

The Borrower shall update, disclose and adopt the ESMF and RPF prepared under Phase I for Phase II by effectiveness, which will then guide the preparation of subsequent E&S screening and ESMPs according to ESF, GIIP, and WB EHS Guidelines. The Borrower is required to update and adopt the SEP prepared under Phase I, and SEA/SH Action Plan. The Existing ESCP for Phase I will be updated for Phase II to address the environmental and social obligations of the borrower as by the relevant ESSs and national regulations.

C. Overview of Required Environmental and Social Risk Management Activities

C.1 What Borrower environmental and social analyses, instruments, plans and/or frameworks are planned or required during implementation?

[Description of expectations in terms of documents to be prepared to assess and manage the project's environmental and social risks and by when (i.e., prior to Effectiveness, or during implementation), highlighted features of ESA documents, other project documents where environmental and social measures are to be included, and the related due diligence process planned to be carried out by the World Bank including sources of information for the due diligence. - Max. character limit 10,000]

Actions to be completed prior to Bank Board Approval:

- Updating and consultation and disclosure of the existing Environmental and Social Commitment Plan (ESCP) – Before Appraisal;

- Updating and consultation and disclosure of a existing Stakeholder Engagement Plan (SEP), including draft grievance redress mechanism (GRM) - Before Appraisal;

- Updating and, consultation and disclosure of existing Environmental and Social Framework (ESMF), Resettlement Policy Framework (RPF) and Labor Management Procedures (LMP) before by effectiveness.

- Possible issues to be addressed in the Borrower Environmental and Social Commitment Plan (ESCP):

o Institutional arrangements for the management of ESS standards;

o Finalize the update of RPF, LMP, and SEP in a timely manner;

o Updated Environmental and Social Management Plan (ESMP) for construction and operation phases for Components 1, 2, and

o Implementation and supervision of SEA/SH Action Plan;

Prepare E-waste management plan

o Development and implementation of institutional environmental and social capacity strengthening plan;

o Preparation of Environment, Health and Safety (EHS) Plan and E-waste management plan as stand-alone documents or part of the ESMP both for construction and operation;

o ESMP and LMP provisions to be included in the Bidding documents and contracts.

III. CONTACT POINTS

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IV. FOR MORE INFORMATION CONTACT

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V. APPROVAL

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