**PROJECT:** REHABILITATION AND EXTENSION BO-KENEMA DISTRIBUTION SYSTEM  
**COUNTRY:** SIERRA LEONE

### Environmental and Social Management Plan (ESMP) – Summary

<table>
<thead>
<tr>
<th>Task Team</th>
<th>Antony KAREMBU; Senior Energy Economist, ONEC.1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Matthieu JALARD, Young Professional, ONEC.0</td>
</tr>
<tr>
<td></td>
<td>Pierre DJAIGBE, Principal Energy Officer, SNFO</td>
</tr>
<tr>
<td></td>
<td>Christian TUCKER, Senior Social Development</td>
</tr>
<tr>
<td></td>
<td>Specialist, SLFO</td>
</tr>
<tr>
<td></td>
<td>Beya IMEN BCHIR , Principal Environment Officer,</td>
</tr>
<tr>
<td></td>
<td>ONEC.3</td>
</tr>
<tr>
<td></td>
<td>Shiaka MOMOH, Procurement Officer, SLFO</td>
</tr>
<tr>
<td></td>
<td>Farah KOROMA, Senior Financial Management</td>
</tr>
<tr>
<td></td>
<td>Officer, SLFO</td>
</tr>
</tbody>
</table>

**Sector Manager:** Z. AMADOU, ONEC. 1  
**Resident Representative:** K. DIABI (OIC), SLFO  
**Sector Director:** A. RUGAMBA, ONEC  
**Regional Director (OIC):** J. LITSE, ORVP
1 EXECUTIVE SUMMARY

SAP Code: P-SL-F00-007
Department: ONEC
Project Category: 2

1 CONTEXT AND BACKGROUND

Electricity production in Sierra Leone is dominated by biomass, which accounts for over 80% of energy consumption. The largest source of biomass energy is wood fuel followed by charcoal. Imported petroleum products are the next largest source of energy with about 13% of the generated power supplied to power the country’s economy. Wood is the primary form of fuel used by households for cooking and craft activities. Petroleum, on the other hand, is the most important source of energy for the industrial sector (including transportation and private electricity generation). Currently, the Electricity sector in Sierra Leone faces challenges with less than 13% end-user access. Efficiency and access are constrained by high technical losses on the transmission and distribution (T&D) network, which are further compounded by low voltage quality due to overburdening of infrastructure informal connections. The availability and use of energy efficient appliances and equipment remains low. Furthermore, the production of electricity from renewable energy sources such as hydro, solar and biomass has been a slow process.

Electricity generation in Sierra Leone is the responsibility of the Electricity Generation and Transmission Corporation (EGTC) and the transmission assets are considered anything at 66kV and above. The Bo-Kenema network is supplied from thermal generation at Bo and hydro generation at Goma respectively. While the project does not for now include upgrading or increasing the generation levels, a brief discourse on the state of generation is provided as it is integral to the distribution network arrangement. At Bo the power station was originally design for three heavy fuel oils (HFO) units which are now in a state of disrepair though one of the units may be returned to service, at the moment, there is no timescale for that consideration. For the purposes of this project, HFO generation has not been considered.

The low level of generation capacity coupled with its weak distribution networks has resulted in supply constraint leading to forced blackouts and load shedding. Consequently, most households and businesses are supplied from constrained, costly and unreliable captive power generation. This has adversely affected the quality of life and delivery of services and restrained business development. It is against this background of constraints in the Energy Sector, that the African Development Bank in collaboration DFID and the Government of Sierra Leone envisaged the need to undertake the Bo-Kenema electricity rehabilitation and distribution project.

The proposed project will improve the Bo-Kenema network, resulting in a more resistant and reliable distribution system for the cities of Bo and Kenema, and Gerihun, Yamandu, Baoma Station and Blama villages, will help meet the increasing electrical power demand in the region and reduce losses and the frequency of power outages.

As part of an Environmental and Social Assessment for the rehabilitation and extension of the Bo-Kenema electricity distribution system line, the project was categorized 2. An Environmental and Social Management Plan (ESMP) as well and An Abbreviated Resettlement Action Plan (ARAP) were prepared in accordance with the Bank’s Integrated Safeguard System (ISS). The following document is the summary of the ESMP.
2 PROJECT DESCRIPTION

The Bo-Kenema network is an islanded electricity network which supplies power to the populations in Bo and Kenema as well as the town of Balma. This network also provides a connection to the hydro power station at Goma. This is shown in A 73km interconnecting 33kV single circuit exists between Bo and Kenema, which allows load to flow between the two cities. It also allows power to be provided to villages and towns located on the Bo-Kenema highway which connects the cities however, although a number of tee off connection points have been provided along this line (at Gerihun, Yamandu, Baoma Station and Blama villages), all but Blama are unconnected at present.

Generation is connected to the network in the form of the hydro power at Goma; and thermal units at Bo.

Within the cities, distribution networks supply power to domestic and commercial customers. Presently there are 10,509 customers in Bo, 6762 customers in Kenema, and approximately 250 in Blama.

The distribution networks within Bo and Kenema are principally radial networks which emanate from a single substation in the centre of the city. 11kV circuits supply a number of secondary substations from which Low Voltage (LV) supplies feed customers’ premises at 400 volts (V) for 3 phase and 230V for single phase.

The network is currently under control of the EDSA based in Freetown. Previously the network was operated by the Bo Kenema Power System (BKPS), which became redundant after the unbundling of the transmission and generation assets from the distribution assets resulting from the Electricity Act 2011.

The project consists in upgrading the existing system. The key elements of this upgrade are the construction of two (2) Primary 33/11kv Substations at Bandajuma in Bo and Bandama in Kenema, about 379 Poles from Bandajuma to Bandama starting with Pole 70 to 448 respectively. The Poles are located on EDSA Right of Way Corridor which at certain point passes through the Sierra Leone Roads Authority (SLRA) RoW. The four (4) secondary/11kv Substations at Gerihun, Yamandu, Baoma, and Blama, will be rehabilitated, expanded and made functional.

As part of an Environmental and Social Assessment for the rehabilitation and extension of the Bo-Kenema electricity distribution system line, the project was classified as Category-II in accordance with the Bank’s Integrated Safeguard System (ISS). An Environmental and Social Management Plan (ESMP) as well as An Abbreviated Resettlement Action Plan (ARAP) were prepared in accordance with the Bank’s Environmental and Social Assessment Procedures (ESAP). The following document is the summary of the ESMP.

3 OBJECTIVES OF THE ESMP

The objective of the ESMP is to ensure that all steps are taken to address the potential impacts of the project and to ensure that the project is compliant with applicable national environmental and social legal requirements and the Bank’s safeguards policies and procedures.

Furthermore the ESMP:

- Outlines project background and the activities that will be undertaken during project implementation as well as its anticipated negative environmental and social impacts;
- Reviews Sierra Leone’s policy, legal and administrative framework and level of congruence with African Development Bank polices and guidelines;
Describes public consultations and disclosure requirements;
Describes the measures proposed to mitigate negative, and to maximize positive, environmental and social impacts;
Defines the institutional structure to govern the implementation of the ESMP;
Propose and costs for implementation of the ESMP; and
Describes capacity building requirements for the effective implementation of the ESMP.

4 ENVIRONMENTAL AND SOCIO-ECONOMIC CONTEXT OF THE PROJECT AREAS

The proposed power line will be set-up in the existing 33Kv Right of Way (RoW) which is routinely subjected to annual maintenance through vegetation clearance. The vegetation along the RoW from Bo to Kenema is largely of secondary type with a mix of grasslands, swamp forests and cleared areas for agriculture purposes. Commonly occurring grassy species include: *Andropogon gayanus* with *Hyperrenia* and *Schizachyrium* spp. as co-dominants in some areas. The existing RoW crosses Kambui Forest Reserve (which is a production forest supplying timber to urban areas as far as Freetown) at Blama for a distance of 150m. *It is important to note that, the power line project will follow existing RoW within this forest reserve without acquiring any addition sections of the forest. There are also no plants of conservation concern in the areas traversed by the project based on field observations and consultations with ecologists from Njala University.*

The project areas are sparsely populated except for rural growth centers located along the Bo-Kenema road. The district of Kenema had a population of 609,873 in the 2015 census accounting for 8.6% of the national total with the population of Kenema municipality being 200,354.

According to the comprehensive mapping exercise on water sources conducted by the Ministry of Energy and Water Resources (MoEWR) and its partners in 2014 it is reported there are 3,659 water points in Kenema. Of these, 772 are partially damaged or broken and 151 were under construction others were non-functional and the population per water point was 160 according to the survey. While in Bo district, the report states that, the major drinking water sources for the communities is from wells, hand pumps, public water supplies (piped) and other sources (streams and untreated sources). It is further reported that there are some 3,656 functional water points with a majority being wells without pumps. Since water sources for the household in the project areas mainly streams, rivers, creeks and unprotected which are often contaminated with debris and human fecal matter, there have been frequent outbreaks of water-borne diseases such as diarrhea, dysentery, cholera, typhoid and skin diseases in the communities.

In terms of food security and nutrition in Sierra Leone as per the World Health Organization (WHO) report of (2012) it is reported that, Kenema district exceeded the 40% critical threshold of chronic malnutrition which is set by World Health Organization (WHO). In Bo district, it is reported that, over 57% of the district population is food insecure. In all, food purchase accounts for 62% of the households expenditure of the districts residents, which undermine their capacity to allocate other essential expenditures such as health, education and family welfare.

The business environment is dominated by women mainly selling food items which are traded as far as Freetown. The food items include cassava and sweet potatoes leaves, fresh cassava and potatoes. The project areas is a sources of crushed and fermented cassava popularly referred to as *fufu*. Wet cassava paste processing takes place on a fairly large at cottage industry level by the women and constitutes assured source of incomes for the families.
With respect to EVD, the Sierra Leone National Ebola Recovery Strategy 2015-2017 puts the cumulative national deaths from EVD at 442 being children (222 girls and 220 boys) with an estimated 8,345 orphans of which, a total of 711 children have been placed outside their traditional family support systems. In addition the EVD widows are estimated to be 954 and widowers at 465. According to the Strategy, to date there are about 1,341 EVD survivors (750 females and 591 males) registered in the country. However, there are a lot of health uncertainties surrounding the EVD survivors which calls for continued and sustained multi-sectoral sensitization and awareness campaigns on the need to control potential risks of the EVD outbreaks.

5 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

5.1 Policy framework

The National Environmental Policy of 1994 emphasizes the need for Sierra Leone to pursue development on a sustainable path implying the need for sound environmental and natural resources exploitation and management. Therefore, the Bo-Kenama electricity project needs to comply with this Policy objective as well as other environment provisions in a number of policy instruments in order to ensure compliance of the project works. Other policy instruments of relevance to the planned power project include; the Sierra Leone Vision 2025, the National HIV/AIDS Policy for Sierra Leone 2002, National Gender Policy 2007; the National Ebola Recovery Strategy for Sierra Leone 2015-2017; the National Energy Policy 2009, the National Land Policy 2013, and the National Land Policy 2004. These policy instruments provide sectoral frameworks for the mainstreaming of their thematic areas into the planned Bo-Kenama electricity rehabilitation and expansion project.

5.2 Legal framework

The legislations framework for the implementation of the planned energy project include: the Constitution of the Republic of Sierra Leone of 1991; the Environment Protection Act (EPA), 2008; the National Electricity Act 2011, Local Government Act 2004 and the Factories Act, 1974. These legal instruments outline compliance requirements during the various stages of implementation of this project.

5.3 Applicable AfDB Policies

The Bank’s Strategy for 2013-2022 emphasizes the need to achieve inclusive growth and transition to green growth in development its interventions. In line with this, the Bank has its Integrated Safeguards System (ISS) that consolidates and revamps its existing environmental and social safeguards. The ISS is designed to promote the sustainability of project outcomes by protecting the environment and people from the potentially adverse impacts of projects. The Bank’s applicable Operational Safeguards relevant to this project include:

- Operational Safeguard 1 for environmental and social assessment which governs the process of determining a project’s environmental and social category and the resulting environmental and social assessment requirements;
- Operational Safeguard 2 which consolidates the policy commitments and requirements set out in the Bank’s policy on involuntary resettlement;
- Operational Safeguard 4 addresses pollution prevention and control, hazardous materials and resource efficiency covering a range of key impacts of pollution, waste management, and hazardous materials and including greenhouse gas emissions aspects; and
Operational Safeguard 5 focusing on labor conditions, health and safety which addresses the Bank’s requirements for workers conditions, rights and protection from abuse or exploitation.

These policy instruments have further informed the preparation of the ESMP for the Bo-Kenema electricity distribution and expansion project to ensure it is both environmentally and socially sound meeting not only national environmental requirements but also, international commitments which the Republic of Sierra Leone is a signatory to.

5.4 Administrative Framework

Some of the environmental assessment and monitoring agencies in the road sector include:

- **The Environment Protection Agency (EPA):** a statutory agency responsible for the protection of the environment and for other related matters. The EPA has the overall responsibility of approving and monitoring the project’s compliance in line the Approval Conditions as well as other standards relating to environment;
- **Electricity Distribution and Supply Authority (EDSA):** a semi-autonomous government entity responsible for the electricity distribution and supply in Sierra Leone;
- **Electricity Generation and Transmission Company (EGTC):** principally responsible to ensure generation and sale of electricity to the distribution utility (EDSA); and
- **Sierra Leone Electricity and Water Regulatory Commission:** responsible for the regulation of electricity and water supply services in Sierra Leone.

Others institutions include Ministry of Energy (MoE) which has policy oversight on matters of electricity sector, Ministry of Lands, Country Planning and Environment (MoLCPE) guides on matters of land acquisition and compensation, Ministry of Gender, Social Welfare and Children Affairs (MoGSWCA) to ensure gender and social dimensions are mainstreamed into the national development agenda in Sierra Leone, the National HIV/AIDS Secretariat, lower administrative entities such as Bo and Kenema districts councils, the chiefdoms and the Civil Society Organizations.

## 6 MAJOR ENVIRONMENTAL AND SOCIAL IMPACTS

### 6.1 Positive impacts

**Employment generation,** the UNDP 50 years report on its operations in Sierra Leone states that, approximately 70% of youth in Sierra Leone are either underemployed or unemployed and an estimated 800,000 are actively searching for employment. Therefore, on a short-term, the proposed project will bring about an estimated 200 jobs of these; about 14 women (20%) will gain employment in the project. The project will also generate indirect benefit to the women through vending food and selling basic items to the workforce alongside sale of food in roadside restaurants to the workers.

**Improved local socio-economy,** one of the key economic activities in the project area is subsistence agriculture and oil palm harvesting dominating household sources of livelihoods. Interestingly in the areas of the project, the processing of agricultural produce is being done at cottage level with no industrial options mainly due to lack of electricity. Therefore, availability of electricity will be an incentive for potential set up of industrial establishments such as carpentry, palm oil, rice hurers, mineral and wood processing which are likely to spring up in the areas. A reliable electricity supply will improve products quality while hopefully lowering operational costs of businesses that are currently being run on stand-alone generators.
Development of SMEs, it is hoped, the project will stimulate the development of additional income-generation activities such as hair salons, repair and maintenance of vehicles, cleaning, restaurants and catering amongst others which are hoped to lead to improved livelihoods of the operators in the community especially, the youth.

Improved delivery of social services, extension of electricity will bring about improved delivery of services in sectors such as health especially vaccination, child deliveries and surgical operations, education and general facilitation of trade activities in the areas in its RoW.

Improved teaching of science subjects in schools, at the moment a number of secondary schools in areas earmarked for this project have problems running science and computer based lessons due to lack of reliable electricity supply. There is limitation in use of computers and evening based preparatory studies. Some schools are unable to run science subjects due to lack of electricity.

Improved security; improvement and extension of the electricity will lead to improved security through better lighting in the trading centers and institutions along the project areas and their environs which will contribute to security of residents and their investments.

Reduced noise pollution; once electricity supply is extended to the urban centers in the project areas, it will likely lead to reduced use of generators and subsequent reduction in noise pollution from power generators currently operated to run businesses along the Bo-Kenema highway and its environs. Due to absence of power supply, most electricity operated businesses in the areas are run on power from generators of varying sizes and capacities which lead to emissions of GHG.

Improved livelihoods, lack of reliable electricity are reported as one of the disincentive towards acquiring household items such as fridges and television sets. During consultations, women welcomed the project emphasizing that, it will enable families acquire fridges which will help planning and running of their homes and enable them have better livelihoods.

A boost to the recreational and social leisure, in a number of upcoming trading centers in the across the proposed project areas, choices of recreational options are limited largely due to lack of electricity. The availability of electricity improves the choices for recreation and extends the time for recreation thereby enabling recreation. In addition, in the urban centers the stakeholders consulted expressed the need for electricity for safe operations of their television sets which is currently a problem due to lack of stable and reliable power supply.

6.2 Potential Negative Impacts of Grid Extensions and mitigation measures

Negative impacts of the project are summarized as follows:

Vegetation clearance: vegetation in the two sub-stations sites shall be cleared prior to the start of construction works as well as tall trees and scrub within a distance of 5m on either side of the centerline of the power line. This is minimal negative impact because the RoW exists and is routinely maintained. Mitigation measures: restrict clearance to existing RoW and adopt tree planting to compensate for lost trees and notify land owners with trees below the RoW to salvage harvest them before start of the project.

Management obsolete conductors and old poles: during the rehabilitation works, some power distribution poles will be rendered unfit for continued use in the project and will be removed.
alongside some conductor cables. **Mitigation:** EDSA will reuse some of the salvageable materials in its electricity intensification programmes in the towns of Bo and Kenema and whatever will be left will be disposed to metal scrap dealers by EDSA through its assets procurement and disposal procedures.

**Land acquisition for 2 substations:** estimated land sizes required for the 2 sub-stations in Bo and Boama will each be of 80x80m and the sites have been identified with the chiefs and the districts. The project will cause no physical and economic displacement of populations as the earmarked sites are currently vacant. However, EDSA has initiated talks with the 2 district councils, chiefs and communities in the project areas who have all expressed willingness to offer the land for the project as part of their support for their project. Letters to this effect are being processed through MoLCPE.

**Land acquisition for way leaves:** the construction of distribution lines raises issues of the acquisition of Right-of-Way of 10m. However, the RoW for the project was established since 1987 and exists and the Bo-Kenema project will to the extent possible, be implemented within the existing RoW thereby eliminating land acquisition needs. However, for sections of the RoW that have been encroached by the communities, affected properties include business loss, land uptake (66 landlords), 16 undeveloped plots, compensation for fruit trees (454), lost occupancy (15 tenants) and business entities (15). The 115 identified PAPs will be compensated before start of project.

**Disruption of electricity supply services:** works on the existing power lines will likely disrupt electricity supply on the line and delivery of services. The process will involve disconnection of supply during the time of rehabilitation. **Mitigation:** it is proposed that, the line be switched off between 8:00am-5:00pm after which; the power supply will be connected back. This will be a short-term negative impact to be mitigated by advance notification of consumers. EDSA Public Relations Officer (PRO) for Eastern and Southern Region is to take a lead to sensitize the public on the project timings. Above all, the contractor should also endeavor to accomplish works within the scheduled contract period.

**Soil erosion concerns:** soil erosion concerns arising from erection of the poles for the distribution lines will involve digging and later, back filling, and if poorly compacted, loose soils may be eroded leading to siltation of drainage channels. However, this will be mitigated through proper compaction of the pole holes and full restoration of the work sites at the end of the project.

**Temporary campsite and equipment storage yards issues:** the contractors may set up temporary campsites as bases for their administrative operations and equipment storage and the operations of such facilities can raise issues of solid waste management, fires, noise, effluent management, and a host of issues which can be a cause of conflict and other social ills. **Mitigation measures:** the public health issues in the contractor’s campsite will be the responsibility of the contractor who is to put up measures for daily cleanliness of the campsite. The Public Health and District Environment Officers from Bo and Kenema districts should monitor public health issues in the campsites to ensure their cleanliness. At the end of the project, the site restoration measures and status have to be certified by both the Supervising Engineer and the area DEO before final payments are affected.

**Occupational Safety and Health (OSH) for the workers and the public:** most OSH issues will likely arise during the construction, operation and maintenance of electric power distribution projects and include; exposure to physical hazards from use of heavy equipment and cranes; trip and fall hazards; exposure to dust and noise; falling objects; exposure to hazardous materials and exposure to electrical hazards from the use of tools and machinery. **Mitigation;**
these issues are to be mitigated through provision of PPEs and First Aid Kits on site for the safety of the workers as well as continuous awareness on safety and health.

**HIV/AIDS concerns:** the interactions between the workers and the local communities may lead to the development of some sexual relationships thereby triggering STI/STD infections on either side. **Mitigation:** it is proposed that, the contractor procures services of an HIV/AIDS Service provider to handle sensitization and awareness campaigns on HIV/AIDS and supply condoms to the works and the immediate communities.

**Vandalism of power distribution infrastructure:** vandalism and theft of project installations after construction continues to be one of the problems in a number of places in the country where vandals tend to steal transformer copper coils as well as some of the distribution related equipment including lighting arresters. **Mitigation:** this is expected to be a small negative impact and is to be mitigated through sensitising the communities by the EDSA PRO for Eastern and Southern Province on the negative effects of vandalising electricity installation through radio programmes as well as by the chiefs and faith based bodies. There is also need for contractors to work closely with area local leaderships to help address security and safety at the sites and the campsite.

**Noise from construction crew and traffic:** there are fears of noise pollution from construction crew and construction vehicles during project implementation which can be a nuisance to the public close to the RoW. **Mitigation:** construction crew is likely to be small as such; noise from workers will be minimal. In addition, the countryside through which the project traverses is sparsely populated implying this impact will be minimal on the communities. This impact will, as well be temporal and of low magnitude. Above all, construction activities will be implemented during daytime to avoid impacting on peoples sleep hours.

**Impacts on traffic flow on Bo–Kenema highway:** the works along the road will likely affect traffic flow during its implementation. **Mitigation:** This will be mitigated through employing traffic guides (flagmen) to control traffic at both approaches and use of safety signage with labels such as “men at work” or “work in progress.”

**Gender mainstreaming:** during project implementation women alongside men will have the opportunity to be employed in line with the national gender affirmative action and at least 14 women will potentially work at the project in its various settings. It is also noted that, women are involved in a number of roadside businesses especially in the trading centers operating salons, restaurants and retail business whose operations to a large extent, are hampered by availability of affordable electricity. Most of them claim they cannot engage in the selling of cold drinks in their retail shops due to high energy costs of acquiring and running petrol generators. It is also proposed that funds amounting to USD 35,000 be committed to helping estimated 25 women operating roadside business in Baoma junction to have a roadside market shelter and associated facilities for storage of their produce awaiting transit to Freetown. The improvement is to also include providing separate toilets for male and female. The local chiefs in the area were consulted are in support of this proposal and are willing to offer land for the development.

**Mainstreaming EVD interventions in the project:** according to information available and discussions with officials in Ministry of Gender, Social Welfare and Children Affairs (MoGSWCA) and those in health on EVD in the country, it is clear; the EVD has or will become endemic in the region like other diseases such as malaria or lassa fever (an acute viral hemorrhagic illness of 2-21 days duration that occurs in West Africa transmitted by rats). The disease will not completely disappear from the region, so a few cases will be expected frequently, constituting an ever-present threat though the virus will be less virulent with probably lower mortality rate. In light of the above, EVD prevention measures are proposed to be mainstreamed.
into the power project in terms of sensitization and awareness of the workers and the neighboring communities on EVD risks prevention measures.

**Climate Change implications on the project:** Sierra Leone is experiencing adverse climatic conditions with negative impacts being felt in the welfare of millions of the population. Electricity power production and distribution infrastructure can be highly vulnerable to the impacts of climate change and some of these risks such as lighting risks, storm impacts, temperature fluctuations impacts and emissions from thermal plants during the dry seasons. These impacts will mitigated through installation of lightning arresters on electricity facilities; routine clearance of vegetation thereby eliminating risks of trees on the power lines and use of steel poles that stand the storms as opposed to wooden poles; changes in temperature impacts are to be mitigated through appropriate installation of the conductor cables to allow for expansion and contraction without breakages. Changes in rainfall patterns and intensities which trigger use of thermal generation resulting to carbon emissions of GHC to be mitigated through tree planting around thermal plants and adoption of technologies which reduce acoustic impacts as well as reduce carbon emissions in the plants.

7 **ENHANCEMENT AND MITIGATION PROGRAM**

Once the ESMP is approved the conditions in the certificate of approval issued by EPA-SL will be integrated into the BoQs and become part of works items to be implemented in during project works. The EPA-SL will be conducting follow up inspections and monitoring of the project and bring outstanding compliance issues to the attention of the project implementers. At the district levels, the District Environment Officers from Bo and Kenema will assume the responsibility of routine monitoring of the project and give feedback to EPA-SL on how the compliance of the project is proceeding which will equally be brought to the attention of EDSA and the contractor.

EPA-SL emphasizes the need to have an Environmental Audit of the Project commissioned one year after its implementation and will be conducted as per National Environment Act 2008 requirements. The EDSA in consultations with the EPA-SL will be responsible for commissioning the environmental audit in consultations with the Bank. The environmental audit is hoped to bring to light some of the emerging environmental issues during its implementation and propose compliance interventions for such concerns.

The Environmental Unit of EDSA alongside the Environment Management Specialists from both the contractor and the supervising consultant will be responsible for overseeing integration of environmental and social issues into the project works, supervision and reporting. The Environmental Specialists will also play an inter-phase role between the contractor and supervising consultant as well as with EPA-SL and other stakeholders on matters of compliance of the project.

In addition, the EDSA has in its establishment position of regional Public Relations Officers (PROs) in the country’s provinces with one taking charge of eastern and southern province whose role is to create awareness in the public about the functions and operations of the Utility as well as sensitize the public on the risks relating to electricity infrastructures. In the project, the PRO for these provinces is well placed to champion public awareness about the project and risks of erecting houses in the ROW.

The ESMP has also proposed measures to ensure Ebola Virus Disease (EVD) and HIV/AIDS mitigation measures to be mainstreamed into the project to continue sensitizing and creating awareness in the communities along the RoWs on risks of these diseases in their areas. It is emphasized that, the sensitization program should not only focus on contractor's workforce but the wider communities in the ROW. The other measure is to commit some resources from the
project for improvement of a roadside women market at the Boama road junction to help the women sell their agricultural produce.

Furthermore, there will be scheduled Bank Supervision Missions for the project which will be checking compliance of the project works with the Loan Agreement environmental commitments by GoSL and the environmental and social issues raised by the Bank Missions will be taken up by EDSA in their follow supervision and monitoring of the project. Furthermore, there will be monthly site progress meetings to discuss matters and progress of the project. In those meetings, environmental and social compliance of the project will be reported by the Environmental Specialist of EDSA. Salient aspects of compliance will be reported and corrective actions will be discussed and agreed upon. These measures will improve the compliance of the project with its approval certificate and ESMP measures. Other measures to further enhance the mitigation measures proposed in this ESMP includes tree planting around thermal power plants to check carbon emissions foot prints.

**8 MONITORING PROGRAM AND COMPLEMENTARY INITIATIVES**

The environmental and social monitoring is to ensure that mitigation measures are implemented and are effective. Environmental and social monitoring will also enable response to any emerging issues of concern during project implementation and therefore, ensure that, project activities comply and adhere to environmental provisions and standard specifications of both the Bank and GoSL. The responsibility for the environmental monitoring will largely lie with the EDSA and EPA-SL. There will be need to involve other stakeholders in monitoring of compliance of the project with other aspects such gender, EVD and HIV/AIDS.

Some of the key monitoring indicators of focus will include amongst others:

- mobilization and sensitization meetings held with the communities on the project;
- HIV/AIDS campaigns
- gender mainstreaming drives instituted
- EVD mitigation measures
- tree planting
- availability of PPEs and usage by the workers
- soil erosion control measures
- sensitization of communities on RAP aspects of the project
- camp site compliance
- climate change issues esp. lightning risks
- noise measures management measures

It is noted that, internally EDSA has just established its Project Implementation Unit (PIU) and is staffed with an Environment Specialist who is responsible for oversight role on compliance of projects with safeguards requirements. To effectively fulfill its mandate, the Unit requires to be supported to develop and build its capacity and also bring on board on a number of stakeholders with mandate over some environmental and social issues (gender, EVD and HIV/AIDS).

**9 INSTITUTIONAL ARRANGEMENTS AND CAPACITY BUILDING REQUIREMENTS**

Prior to implementation and construction of the sub-projects, the ESMP shall be reviewed by EDSA and some its outstanding environmental and social aspects will picked and integrated into amended detailed designs after design review process. Such a review shall be based on re-
confirmation and possible additional information on the assumptions that are likely to arise during the feasibility stage.

In order to facilitate the implementation of the ESMP, during the preparation for the construction phase, the EDSA should prescribe in the contract documents a requirement for contractors to co-operate with key stakeholders in the implementation of mitigation of impacts. The ESMP has to be reviewed by the supervising consultant and adopted before construction activity is initiated in order to take account of any subsequent changes and fine tuning of the proposals.

The Environmental Specialist in EDSA will need some short-term training and resources for him to effectively provide quality control and oversight for the ESMP implementation. He will require robust support from senior management staff members and the construction supervision consultant to support integration of environmental concerns in the project. The Environmental Specialist will: (a) work in the PIU to ensure all statutory environmental submissions under the National Environment Act 2008 and other environmentally related legislation are thoroughly implemented; (b) work in the PIU to ensure all environmental requirements and mitigation measures from the environmental assessment of the project are included in the contract prequalification and bidding documents; (c) support the EDSA to execute any additional ESMP update requirements that may arise from subsequent fine tuning of the projects and that, environmental performance targets are included in the contracts prior to project commencement; (d) working in PIU to ensure all environmental requirements and mitigation measures from the ESMP and environmental performance criteria are incorporated in the project contract and that the ESMP is effectively implemented; and work with the construction supervising consultant and contractors to manage and monitor the implementation of the project ESMP.

10  **PUBLIC CONSULTATIONS AND DISCLOSURE REQUIREMENTS**

The objectives of consultation and disclosure were to ensure that all stakeholders and interested parties, are fully informed of the proposed project, have the opportunity to voice their concerns and that any issues resulting from this process are addressed in the ESMP and incorporated into the design and implementation of the project. The objectives were to inform stakeholders about the project and its activities, assess their views and concerns, and identify environmental and social impacts associated with the project.

In the developing this ESMP, consultations were held with relevant stakeholders and their concerns were documented. The stakeholders consulted included; Bo and Kenama District Local Government Officials such as the Chief Administration Officers, District Environment Officers (DEOs), District Development Officers (DDOs) and the district engineers amongst others. Meetings were also held with statutory agencies which included; Environment Protection Agency (EPA-SL), HIV/AIDS Secretariat and Electricity Generation and Transmission Company (EGTC).

In addition, meetings were held with staff of Ministry of Finance and Economic Development (MoFED), Ministry of Energy (MoE), Ministry of Tourism and Cultural Affairs (MoTCA), Ministry of Agriculture, Forestry and Food Security (MoAF&FS) Ministry of Health (MoH) and Ministry of Gender, Social Welfare and Children Affairs (MoGSWCA). The consultant also met and held discussions with the paramount chiefs of Kakua and Gerihum chiefdoms. Other meetings were held with women conducting roadside trading in the areas of Bandajuma, Gerihum, Boama, and Balma areas along the Bo-Kenama highway. The Consultant also inter-phased with the EDSA area engineers for Bo and Kenema.
In order to get information on the types and conservation status of biological resources (plants, mammals, birds and herpetology groups i.e. reptiles and amphibians), meetings were held with the Managing Director and Founder of Reptile and Amphibian Program for Sierra Leone. For plants, birds and mammalian information, public consultations were also held with staff of Department of Wildlife Management, Ecotourism and Biodiversity in the School of Natural Resource Management Njala University College, University of Sierra Leone.

Public Disclosure

The EDSA will submit the ESMP report to the EPA-SL for circulation to its Board members and professional bodies for review and comments. EDSA will then disclose the ESMP report through publication of the summary in the newspapers; it will also make announcements over the media in the local languages regarding the project and the ESMP report. In addition, the EPA will place the ESMP report in specific public places accessible to the general public to enable the affected and interested persons make comments on the impacts of project and such comments will be sent directly to the EPA-SL. To validate the ESMP, the staff of the EPA-SL will visit the project site before issuing approval certificate. When the ESMP is approved, it will be subject to the terms and conditions that will be stipulated by the EPA Board in the project approval certificate. The Approval Certificates are normally issued for a period of (12) twelve-months or a time as shall be specified by the Director. Once the Certificate of Approval is issued, the EPA is responsible for oversight monitoring of the project to verify compliance.

11 ESTIMATED COSTS

The total project cost for the implementation of the environmental and social measures in the project is estimated to be USD 219,000 to be incorporated into the overall project costs. The budget for the social review and audit assignment, compensation assessment and payments, pre-demolition information dissemination, demolition of affected structures, hiring a witness NGO, and implementing a livelihoods restoration support program is estimated at $ 547,377.

A number of environmental and social intervention costs will be integrated into the project overall costs such as (e.g. tree planting; borrow pits restoration costs, provision of access to homesteads, site meetings, etc.). However, the additional environmental and social mitigation costs are summarised as follows:

<table>
<thead>
<tr>
<th>Nº.</th>
<th>Mitigation Activity</th>
<th>Cost (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Environmental monitoring</td>
<td>44,000</td>
</tr>
<tr>
<td>02</td>
<td>Complementary Initiatives- tree planting</td>
<td>05,000</td>
</tr>
<tr>
<td>03</td>
<td>EVD mainstreaming</td>
<td>20,000</td>
</tr>
<tr>
<td>04</td>
<td>Gender mainstreaming</td>
<td>35,000</td>
</tr>
<tr>
<td>05</td>
<td>Health and safety campaigns</td>
<td>10,000</td>
</tr>
<tr>
<td>06</td>
<td>Environmental Consultant to mentor Environment Specialist</td>
<td>30,000</td>
</tr>
<tr>
<td>07</td>
<td>HIV/AIDS mainstreaming (through HIV/AIDS Service Provider etc.)</td>
<td>25,000</td>
</tr>
<tr>
<td>08</td>
<td>Capacity Building of PIU (equipping and trainings etc)</td>
<td>50,000</td>
</tr>
<tr>
<td>09</td>
<td>Environmental Audit costs</td>
<td>25,000</td>
</tr>
<tr>
<td>10</td>
<td>Provision of OHS measures (PPEs, First Aid Kit etc.)</td>
<td>10,000</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td><strong>219,000</strong></td>
</tr>
</tbody>
</table>
ARAP Estimated Budget

<table>
<thead>
<tr>
<th>№</th>
<th>Description</th>
<th>Amount ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>Compensation payments</td>
<td>206,059</td>
</tr>
<tr>
<td>02.</td>
<td>Demolition and clearing assistance using manual labor</td>
<td>20,000</td>
</tr>
<tr>
<td>03.</td>
<td>Livelihood Restoration Program</td>
<td>80,000</td>
</tr>
<tr>
<td>04.</td>
<td><strong>Sub Total</strong></td>
<td><strong>306,059</strong></td>
</tr>
<tr>
<td>05.</td>
<td>30% contingency of ARAP Estimated Budget (excl. witness NGO)</td>
<td>91,818</td>
</tr>
<tr>
<td>06.</td>
<td>Hire a witness NGO for external monitoring of RAP implementation</td>
<td>15,000</td>
</tr>
<tr>
<td>07.</td>
<td>Social review, Audit and support to the implementation of the ARAP</td>
<td>120,000</td>
</tr>
<tr>
<td>09.</td>
<td>Pre-demolition stakeholder engagement</td>
<td>3,500</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>547,377</strong></td>
</tr>
</tbody>
</table>

12 IMPLEMENTATION SCHEDULE AND REPORTING

The overall responsibility for implementation of this ESMP is vested with the EDSA as part of project implementation framework. Other parties to be involved in implementing the ESMP will be the contractor who will be responsible for carrying out the contractual obligations, implementing all ESMP measures required to mitigate environmental impacts during construction and other Government agencies such as the EPA-SL, district local authorities and line ministries such as MoGSWCA will be responsible for monitoring the implementation of environmental conditions and compliance with statutory requirements in their respective areas and local land use groups.

There are some further considerations for the planning stages such as obtaining environmental clearance for the project under EPA-SL as well as limited clearances relating to land should all be finalized prior to the start of the project. In addition, there are also some waste management issues for the construction and operational stage that must be addressed in the detailed design and through environmentally responsible procurement. Finally, at the detailed design stage the number of and exact locations for transformer extensions, distribution lines need to be clearly established.

13 CONCLUSION

In conclusion, there are likely to be no significant negative environmental and social impacts which are likely to arise in the project. It is anticipated that, implementation of the ESMP mitigation measures will address a number of identified negative impacts. The ESMP has provided a framework for environmental monitoring of project impacts based on existing institutional arrangements which will go a long way to check progress of project compliance. In order to ensure effective monitoring and general follow on the implementation of ESMP measures, the PIU and especially its Environmental Specialist will require some capacity support in terms of specialized training in some areas to enhance his performance and equipping the Unit in terms of computers and transport.