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AFRICAN DEVELOPMENT BANK GROUP

PROJECT: **Urban Power Distribution Rehabilitation Project**
COUNTRY: **Lesotho**

ENVIRONMENT AND SOCIAL MANAGEMENT PLAN SUMMARY

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1. GENERAL INFORMATION

Project Title: Urban Power Distribution Rehabilitation Project
Project Number: P-LS-FA0-003
Country: Lesotho
Department: ONEC

2. INTRODUCTION:

2.1 Electricity demand Lesotho continue to increases as the source of energy and also facilitates technological advance and in turn stimulates the economy by providing gains in productivity. This is reflected by the steady increase in consumption of electricity in sectors that are perceived to be the economic drivers namely mining, construction and textile. It is therefore imperative for the Lesotho Electricity Corporation (LEC) to ensure reliable and efficient supply of electricity. Electricity reliability measures the consistency of services on demand as provided by the LEC to customers. There are several power reliability indicators that can be used to determine the system performance and they are, among others determined by power outage. This therefore makes power outage a major concern for power reliability.

2.2 In Lesotho, power outages are usually caused by unfavourable weather conditions which are mostly predominant currently, faults at power stations, short circuits, animal contact with lines, damage to distribution lines or transmission lines, vehicle accidents with power poles and many others. Over the years it has been observed that faults attendance cost the company a fortune. For instance, most faults are reported by customers and rectifications of such faults often require that LEC personnel travel to physically attend to such. The associated costs include but not limited to both fuel and labour costs. Further to that, faults often lead to the damage of the customers' appliances which requires compensation to the customers. In the fiscal year 2013/14, the company was found to be liable for significant worth of damages to customers' properties. All these are the expenses envisaged to be curbed by the implementation of this project since the system performance will be improved and faults reduced.

3. PROJECT DESCRIPTION

3.1 Project Objectives

The Urban Power Distribution Rehabilitation Project (UPDRP) aims at improving the reliability and quality of electricity supply to existing and future customers. The upgraded and reinforced electric power distribution system will result in increased available electricity and improved voltage stability and quality. The project will help improve the quality of life of residential consumers and promote adequate working environment for businesses, thus contributing to the country's socio-economic development. The project consists of (i) rehabilitating the power distribution network in the municipality of Maseru; comprising the replacement of circuit breakers at most substations and switching stations in Maseru and the rehabilitation of 188km of 33kV distribution lines; (ii) carrying out civil works to improve and refurbish buildings housing the switching station, as well as rehabilitation/construction of 33 kV and 11kV extension feeders; and (iii) providing technical assistance to carry out pre-feasibility studies on two potential hydropower projects, a cost of service study and the resource assessment study.

The purpose of the project is to improve the reliability and availability of electrical supply to existing and facilitate the connection of new customers. This will be done primarily through replacing obsolete equipment, transformers, circuit breakers and distribution lines that cause frequent power outages in the country.

3.2 Project components

The project will comprise the following:

	Component name	Est. cost (UA)	Component description
A	Distribution Network system rehabilitation	8,373,269	• Rehabilitation of 13 switching station in the municipality of Maseru, one in St Agnes Teya-teyaneng and one in Muela.. refurbishement of 39 km of 33kV line from M/Hoek to Quthing, and 149 km of 33 kV line from Roma to Thaba Tseka, • Upgrade of the Khukhune 88/33 kV substation by addition of 2x30 MVA transformers, construction of 8km of 132 kV transmission line from the Muela Hydropower Station to link the 88 kV transmission line from South Africa at the substation.
B	Civil works	561,543	▪ Civil works to refurbish buildings housing the switching stations and substation
C	Technical Assistance	1,345,326	▪ Prefeasibility studies of the (i) Tsoelike Hydro Power Plant (HPP) located in Qacha's nek District on Tsoelike river with estimated installed capacity of about 18 MW. (ii) Polihali HPP in Mokhotlong District on Mokhotlong river with estimated installed capacity of 20 MW. ▪ Electricity Cost-of-Service Study to establish tariff that are economically and financially sound. ▪ Preparation Energy resources Map: The review should cover solar, wind, and hydropower resources up to potential of 10 MW;
D	Project Supervision & Management	439,415	Project management and supervision Financial audit Implementation of Environmental and Social Management Plan

3.3 Objectives of the ESMP

It is the purpose of the Environment and Social Management Plan (ESMP) to protect the environment and ensure that the proponent's activities are implemented such that they do not impact negatively on the Environment and where there is negative impact, proper mitigation measures are applied to minimize the impact.

This ESMPs is therefore designed to;

⇒ To prevent environmental degradation and adverse risks to human and ecosystem health,
⇒ To make progressive environmental improvements,
⇒ To achieve effective integration of environmental, economic and social considerations in the decision making process,
⇒ To promote shared responsibility for the environment,
⇒ To promote the principles of ecologically sustainable development.

3 CONTEXT

3.1 Existing infrastructure

Around 2006, the focus of LEC was to connect new customers and improve sales; while maintenance of the network was not regarded as a priority. This approach resulted in deterioration of network and increase in faults. Consequently it has negatively impacted the continuity of supply to customers hence affected the business of the company. In an attempt to minimize the impact, the network assessment project which was aimed at establishing the extent to which LEC network has deteriorated over years was successfully implemented. Following that assessment, LEC in collaboration with the Government of Lesotho allocated some funds to the refurbishment program which kick-started in 2009/2010. The priority was to start with the most critical areas that affect majority of electricity users like Mabote Substation, Maputsoe Substation and other substations that supply commercials, industries and government offices.

The neglected maintenance resulted into obsolete equipment and dilapidated lines which currently cause frequent unplanned outages thereby affecting reliability and availability of power supply. Of equal importance, the current state of electricity conductors, poles and transformers can be described as old and inadequate; thereby limiting the capacity to serve current and future loads. Similarly, the existing network coverage stands at 34 percent which falls far short of the potential supply required for economic growth in major urban and other growth centers. The project areas are already existing areas under the ownership and management of LEC as approved by all relevant authorities.

3.2 The Bio-physical Environment

3.2.1 Climate

The climate of Lesotho is influenced by its location which ranges from 1400m to 3480m above sea level. Lesotho is characterized by a continental type of climate with winters that are generally dry and cold and summers that are generally hot and humid. The rainfall varies both spatially and temporally and the rainfall totals varies from year to year as well. The wet months are in summer starting from October to April peaking from December to February.

3.2.2 Fauna and Flora

There are no medicinal or endangered flora and flora on site as the project sites are already existing. The construction activities will not harm any flora and fauna in substations as the flooring of the stations is cemented and crush stone put. The station yards are continually cleared because vegetation is not supported in substations. However, in the refurbishment of lines, there is a possibility of the project activities affecting the agricultural produce in cases where the line route is through people's fields. Therefore appropriate and practical mitigation measures must be put in place to mitigate the potential loss. In some areas along the line route, the land is degraded as it runs along the mountains and dongs.

3.2.3 Archeological and Paleontological Sites

There are no known materials of archeological or paleontological nature on site. However, if they are found during the refurbishment project, they will be reported to the Department of Environment for proper guidance of storage in designated areas.

3.2.4 Soils

Since the project area or site is located in the highlands, lowlands and the foothills, soil formation in the lowlands is indirectly related to the underlying sedimentary rock. The foothills soils overlay the cave sandstone and are yellow brown and coarse to medium textured. Both groups of soils appear to be reworked (Carroll and Bascomb, 1967). Due to the steep topography, incorrect land management practices and intense rainfall which has resulted in soil erosion, gully formation and encroachment into LEC lines has increased.

3.3 Socio-Economic Environment

3.3.1 The refurbishment project is located in Maseru, Botha-Bothe, Mohale's Hoek, Thaba-Tseka and Quthing districts respectively. The total population of Maseru is 431 998 (2006 census) which is approximately 24% of the total population of Lesotho. The project area is mainly located in the central business district where there is high employment through the factories. However, the project will not interfere with the daily activities of the factories and its workers because the project is repairing already owned LEC property.

3.3.2 Botha-Bothe on the other hand has a total population of 109 529 (2006 census) making approximately 6% of the total population of Lesotho. The project area is located in the rural part of Botha-Bothe in the Likila constituency where the most common activity is agriculture even though it is no longer predominant. The project may affect people's fields and as such compensation may need to be paid accordingly.

3.3.3 Thaba-Tseka district is one of the highlands of Lesotho with a total population of approximately 7% of the total population of Lesotho. It has only one electricity line that supplies it with electricity. This line is in urgent need for the refurbishment project which will stabilize the electricity supply and in parallel contributing to the economic development of the district.

3.3.4 Quthing is one of the districts where the project will be located with the total population of 120, 502 people (2006 census). Mainly, the project will be located in the rural parts of the districts which therefore means that fields may be affected and there may therefore be the need to compensate those affected. The people from Quthing mainly survive on agriculture even though there is challenge due to the varied and changed precipitation and temperature (climate change).

3.3.5 Finally, Mohale'Hoek is a district with a total population of 174 924 where people survive on agriculture and working in the factories in Mafeteng amongst other means of living. However, Mohale's Hoek the project is located outside the town and may only affect the fields as well.

3.3.6 Projects of this nature have a tendency of attracting job seekers, putting more pressure on the already limited job opportunities as this project is mainly a refurbishment project. It is therefore highly encouraged that where possible, local labour be engaged in order to contribute towards the improvement of livelihood of such an area. Moreover, preparations must be made to curb the encroachment of job seekers on site.

3.3.7 The 2006 Census results confirmed that HIV/AIDS (together with declining fertility rates and out migration) have severely constrained population growth, reducing it to virtually zero. This is unlikely to change within the next generation (30 years).

3.3.8 Very significant socio-economic differences exist between rural and urban areas. Average incomes per person in urban areas now exceeded those found in the rural areas more than four times (4.3). Differences between urban and rural areas were well captured in the national Demographic and Health Survey of 2004. The differences are presented based on selected indicators:

Socio-Economic Variations by Rural and Urban (DHS, 2004)

Indicator	**Percent of Households**	
	Urban	**Rural**
Fuel Use		
Electricity	7.0	0.2
Gas	58.0	10.7
Paraffin	27.4	9.2
Firewood, straw	6.6	71.0
Water Supply		
Piped water into dwelling	11.9	0.6
Piped water to plot	39.5	1.5
Sanitation		
Flush toilet	7.7	0.2
VIP	40.7	15.7
No toilet	7.1	54.4
Communication		
Telephone	44.0	9.6
Radio	78.6	46.5
Transport	Urban	Rural
Car/truck	10.5	2.6
Horse/mule/donkey	2.5	37.1
Education		
Completed secondary education	10.0	2.0
Employment		
Employed in last 12 months	55.0	33.0

3.3.9 In all cases it is apparent that there are very significant differences between rural and urban areas. In rural areas only 33% of adults have waged employment, the remaining two thirds survive on erratic income or function by and large without cash. The extent to which they are able to do this is evident in the above table. For example, 71% use wood or crop residues

as the prime source of fuel for cooking; few have telephones and many use animal power for transport.

4. LEGAL FRAMEWORK

The relevant National Policies and legal framework were analyzed in relation to the project and its activities as indicated below:

4.1 The Constitution of Lesotho

The constitution requires Lesotho to adopt Policies which are designed to protect and enhance the protection of the environment and to ensure that all the citizens of Lesotho live in a healthy, safe and sound environment adequate for their health and wellbeing.

4.2 The Environment Act (2008)

The Act provides for the management of the environment and all its resources in which case, this project is going to be constructed in one of the resources which is land and hence it is crucial that protection and management of that resource is of utmost importance. It is also a requirement of the Act, to obtain an EIA license before the construction projects detailed in the schedule of the Act. In terms of the Act, this project does not fall under the schedule of listed activities. Public Participation is one of the requirement for this Act and its regulations in order to ensure that all interested and affected stakeholders are consulted. Extensive consultation was undertaken for this project.

The Act also provides for management and control of general and hazardous wastes. It provides for the acquisition of a waste license which allows for the transportation of the hazardous wastes. This project will align itself with provisions of this Act in order to manage and control all types of wastes.

4.3 The Land Act (2010)

The land Act is the main Act which governs the registration and use of land in Lesotho. The Land Act provides that the land may be expropriated for public purposes which include water supply, and public utility services. However there are principles governing the expropriation of land which include negotiation with the holder of land rights subject to expropriation, and may resort to expropriation if at all negotiations fail. Moreover, the Act states that developers must apply and obtain a servitude for the construction of essential services. If at all such a service affects people, such parties must be compensated. The project will align with the requirements of this Act through provision of compensation where necessary.

4.4 Local Government Act (1997)

This Act provides for establishment of local authorities and lists several environmental considerations in during project construction and operation. This project team will align with the provision of environmental protection and waste management as well as public health as stated in the Act.

4.5 Town and Country Planning Act (1980)

This Act regulated and guides land development in planning areas through the planning authority which develops a plan which ensures a systematic physical development, aesthetic and environmentally. Any new development must be approved by the planning authority in line with the plan specific to an area. The proposed project is already planned as it is an upgrade of already existing plans.

4.6 Labour Code Order (1992)

Provides for reasonable assurance of welfare and safety of employees, protection off wages, weekly rest, and sick leaves amongst many of its sections. The Labour code also mandates employers to provide employees with personal protective equipment and it also indicates that it is the responsibility of the employees to use the provided protective clothing. The project will align to the provisions of this Act for both contractors and LEC employees who will be involved in this project. As amended in 2006, the Labour code also indicates that HIV/AIDS is a workplace issue and it provides guidance to employers and employees to develop a comprehensive and gender sensitive HIV and AIDS policies and programmes aimed at prevention, treatment, care and support and impact mitigation.

4.7 Legal Capacity of Married Persons Act (2006)

This is the Act that confers equal powers on both husband and wife married in community of property which means that it gives equal capacity to dispose of the assets of the joint estate, contract debts for which the joint estate is liable and administer the joint estate. This Act requires that both spouses must give consent when entering into any agreements concerning the joint estate. The project will be in line with the provisions of this Act during the compensation process and land acquisitions.

4.8 Poverty Reduction Strategy

The Strategy provides for broad based improvement of Basotho's welfare without compromising opportunities for rehabilitation of the environment. It also records that electricity is essential for the growth of businesses, development of institutions and the wellbeing of families. The proposed project is mainly aimed at increasing electricity connection in Lesotho through the provision of reliable electricity supply in line with the needs of the strategy.

4.9 Energy Policy

The vision of the policy is that energy will be universally accessible and affordable in a sustainable manner with minimal impact on the environment. One of its goals is to ensure security of energy supplies to meet the national requirements from diversified sources that are subject to local resources, regional agreements and economic feasibility and to ensure that the energy sector will contribute towards poverty alleviation in Lesotho through the creation of income generating opportunities that sustain and improve the lives of people in the country through facilitating the provision of affordable technologies and services. The project is aligned to the vision and goals of the policy as its main object is to ensure a reliable supply of electricity which will in turn ensure the security of supply and to contribute towards poverty alleviation through economic development.

4.10 Lesotho National Adaptation Program of Action (NAPA)

Lesotho is one of the countries that has ratified the United Nations Framework Convention on Climate Change (UNFCCC) and has therefore developed the NAPA which is aimed at:

- Identifying regions and communities vulnerable to climate change;
- Assessing the impact of climate change on community livelihoods;
- Identifying and prioritising a responsive adaptation activities for implementation in the vulnerable zones

The NAPA also states that Climate change will have a range of negative impacts on the welfare of communities. Lesotho is prone to a number of key environmental stresses mainly drought, land degradation, desertification and loss of biodiversity. Under climate change conditions these afore-mentioned stresses get more pronounced and hence undermine sustainable development efforts. The LEC refurbishment project does not have a direct impact on climate change. However, the stresses indicated in the NAPA do affect LEC infrastructure: gullies formed through erosion of soil are encroaching LEC poles and transmission lines, flooding of some of the stations and strong winds (hurricanes) that break poles are some of the climate change stresses recorded. The LEC is already embarking on filling up of gullies as a separate project and this will in turn assist this project to adapt to the said climate stresses.

4.11 International Conventions, Policies and Agreements

4.11.1 The Basel Convention

This is an international treaty that is meant to control the trans-boundary movement of hazardous wastes and their disposal. The project is aimed at refurbishing some of the LEC infrastructure and as such disposal of such items as used oils and asbestos roofing will have to be disposed in accordance with the convention as Lesotho has no hazardous landfill.

4.11.2 The Stockholm Convention on Persistent Organic Pollutants

Stockholm Convention is aimed at protecting the human health and the environment against the persistent organic pollutants which are chemicals that accumulate in the environment for long periods of time and are distributed geographically. The project will observe the articles of this convention and abide by them as LEC is one project that has a potential for Polychlorinated biphenyls (PCBs) contamination through the transformer oil.

4.11.3 United Nations Framework Convention on Climate Change

This is a treaty that aims to minimize the greenhouse gas emissions to an acceptable limit that do not harm the environment or accelerate climate change. The project will not be emitting any greenhouse gases and therefore will not be contributing to the acceleration of climate change. However, LEC will have to adapt to the climate change when implementing this project through avoidance of degraded lands as a result of soil erosion.

4.11.4 United Nations Conventions to Combat Desertification

The UNCCD is a convention meant to combat desertification and mitigate the effects of drought through effective actions at all levels. It also encourages implementation of long term strategies that improve productivity of land and the rehabilitation, conservation and sustainable management of land and water resources in order to improve living conditions

in particular at community level. LEC though it's numerous activities adheres to the principles and objectives of the convention as there are donga rehabilitation initiatives guided by the Ministry of Forestry and Land Reclamation. These activities are undertaken in collaboration with the different Basotho communities as well. The Proposed project also tries to combat desertification as well through the refurbishment of the lines.

4.11.5 Declaration on Gender and Development by SADC

This declaration emphases against discrimination on a person based on gender amongst other things. It is through the declaration that Member states committed to numerous aspects such as protecting and promoting the rights of women and children and also making sure that quality health services and reproductive services are accessible to women and men. The project is fully in line with the Declaration as reliable and accessible electricity is an enhancer of the community development which include access health services and to water through boreholes.

5. ALTERNATIVES

5.1 Project and no project alternative

Different project alternatives were investigated in terms of a no project and the proposed project because this is mainly an upgrade project of already existing infrastructure. The two alternatives will be compared in a table below:

Alternatives	**Comments**
No project alternative	This alternative basically means everything is left as it is without any upgrade and the consequences would be as follows: **Socio - economical** • Lower electrification schemes; • Unreliable electricity supply • Increased public liability claims • Compromised safety for the employees and the public • As a positive impact, residents living near the project area would however remain undisturbed. **Bio – physical** The physical environment would remain the same as before the upgrade.
Project Alternative	This is the alternative of the project going ahead and the following would result: **Socio – economical** • Reliable electricity supply; • More people having access to electricity; • Decreased public liability claims; • Decreased or no incidents; **Bio-physical** Some of the vegetation may be cleared to pave way for new poles. However, there are no endangered species in the project areas.

5.2 Alternatives to the design of the project

The alternative in terms of designs is to not undertake the refurbishment project and not repair the lines and the stations. Therefore, the only alternative to the designs of the project is to undertake the project and improve on the current design of the lines and stations. The current switching stations were constructed a long time ago and are dilapidated: falling roofs, cracks inside the stations, unlockable doors, unsafe station doors, fainted painting, and broken windows amongst others. The refurbishment of stations involves replacement of roofs where necessary, repainting of stations, repairs of windows and doors. In terms of alternatives, table below.

Alternatives	**Comments**
No repairs of stations alternative	**Socio - economical** • Risk to the lives of LEC employees; • Leaking and falling roofs; • Unlockable stations; • Unreliable electricity supply; • Compromised safety for the employees and the public **Bio – physical** The physical environment would remain the same as before the upgrade.
Repairs of the station alternative	**Socio – economical** • Safe working conditions for LEC employees; • Station will be compliant to standards; • Reliable electricity supply; **Bio-physical** The physical environment will remain the same as before as the upgrade is undertaken on the already existing structures.

5.3 The Refurbishment of the Roma – Thaba-Tseka and Mohale'sHoek – Mphaki lines

The current lines were constructed as far back as 1995 respectively. The lines were still maintained and line patrols were undertaken to ensure adherence to the relevant standards. However, due to the time lapsed and the budgetary constraints, the necessary maintenance was not undertaken hence why the criticality of the refurbishment project. Table below indicated alternatives to the project.

Alternatives	**Comments**
No Line refurbishments	This alternative basically means everything is left as it is without any upgrade and the consequences would be as follows: **Socio - economical** • Unreliable electricity supply • Increased public liability claims; • Compromised safety for the employees and the public; **Bio – physical** The physical environment would remain the same as before the upgrade.
Project Alternative	This is the alternative of the line refurbishment going ahead and the following would result: **Socio – economical** • Reliable electricity supply; • Decreased public liability claims; • Decreased or no incidents; **Bio-physical**

	Some of the vegetation may be cleared to pave way for accessibility to the line, However, there are no endangered species in the project areas. Necessary compensations will be given where they are due.

5.4 The refurbishment of Khukhune Substation

The upgrade of Khukhune is mainly based on the need indicated by Letšeng Diamonds where they intend doubling the production capacity from 5.5 million tonnes of diamond-bearing ore per annum (mtpa) to 10 mtpa. The expansion is associated with the need for increase in electricity load. Table below indicates the alternatives to the Khukhune station refurbishment.

Alternatives	**Comments**
No Refurbishment of Khukhune substation	**Socio - economic impacts** • No increase in Lesotho's GDP; • No Increase in Job creation for Basotho; • Unreliable supply of electricity to Letšeng diamonds; • As a positive impact, residents living near the project area would however remain undisturbed. **Bio – physical** The physical environment would remain the same as before the upgrade.
Project Alternative	**Socio – economical** • Increase in Lesotho's GDP; • Increase in job creation for Basotho at large; • Reliable electricity supply to the diamond mine; **Bio-physical** • Minor – moderate loss of plant habitat and impact on flora • Minor loss of agricultural land during pole planting. Compensation will be negotiated and paid according to the National Laws and Regulations; • Moderate generation of construction waste. All the necessary waste management strategies will be implemented and monitored through the project EMP.

6. BENEFICIAL AND ADVERSE IMPACTS

6.1 Pre-construction Phase

The project is an upgrade project of already existing infrastructure in similar environment, therefore the enormous bio physical and socio impacts are minimal.

6.2 Construction Phase

6.2.1 Traffic

Increased traffic may due to heavy truck transporting the construction materials. However, this will occur periodically as materials to be used are transported prior to construction and different times. In substations, there would not be any traffic as construction occurs within the boundaries of LEC substations and they are restricted areas. Overhead lines near public roads may cause a slow traffic.

6.2.2 Soil erosion

This may be minimal as the project involves replacement of already existing structures.

6.2.3 Dust

This may be generated minimally where there may be a need to excavate such as in pole replacements.

6.2.4 Damage to Flora and fauna

The project is going to be undertaken in areas that are already operational for purposes of electricity supply. Flora and fauna are very minimal in substations for safety purposes. For pole replacements, there may be a need to excavate new holes and also the damage may be due to excavation machinery and workforce.

6.2.5 Pollution by waste

Solid waste may be generated through construction materials and the contractor's work force which might be a nuisance to the neighbouring public. The liquid waste which may be generated may be through human urine and used oil and may cause pollution to the land and water if not properly managed.

6.2.5.1 Handling Asbestos

Asbestos may be generated as the project involves the repairs of roofs of some of substations. It is therefore important that asbestos is handled in a manner that does not affect the health of people who will be handling it especially the fibres. Handling of asbestos will therefore be undertaken in line with the National laws and policies (Environment Act), the South African laws and policies (Minimum requirements for the Handling, Classification and Disposal of hazardous waste), LEC waste management procedure (Annexure H) and the Basel Convention as the final disposal of the asbestos will be in South Africa due to lack of a hazardous landfill in Lesotho.

6.2.6 Sexually transmitted diseases

This may be arise if the project brings people to a new area and camp site is put, which is not the case with this project as only a few labourers may be sourced from the area where the works are undertaken. The only imported labour will be the professionals.

6.2.7 Improved economy

The project will bring reliable electricity and subsequently potential economic growth.

7.0 ENVIRONMENTAL AND SOCIAL MONITORING PROGRAMME:

Environmental Impacts/ Aspect	Project objectives	Mitigation Measures	Indicator	Frequency/ Significance	Responsibility	Monitoring	Costs
1. Biophysical Impacts							
Air Quality - Dust from digging	Soil Excavations	Water sprayed regularly to minimise dust	Population exposure to dust	Daily	Contractor	LEC	project cost
Noise & Vibrations - Drilling machinery	Drilling will be necessary if hard rock is encountered.	Prior notice to the Public; Workers supplied with PPE for ears, nose, hands	Population exposure to noise and vibrations	quarterly	Contractor	LEC	**M52000**

Environmental Impacts/ Aspect	Project objectives	Mitigation Measures	Indicator	Frequency/ Significance	Responsibility	Monitoring	Costs
Water Quality - Contamination of water or soil	Installation of transformer, potential oil spills	Provision of spill kits	Oil leak detection	monthly	Contractor	LEC	**M20000**
Land degradation or deformation	Soil Excavations.	Immediate backfilling and soil stabilisation in sections.	No. of backfilled holes	monthly	Contractor	LEC	project cost
Biodiversity	No impacts anticipated	-	-	-	Contractor	LEC	None
General Waste Management - Solid & liquid waste	Daily use of material by the Contractor. use of ablutions	Provision of waste bins, latrines, & compilation of waste management procedure.	waste containers,- site toilet	monthly	Contractor	LEC	**M500000**
Disposal of asbestos	Repairs of damaged substation roofing containing asbestos	Provision of PPE; Controlled cleaning and controlled disposal of contaminated PPE; Wetting of fibrous asbestos.	Sealed asbestos containers	During the asbestos handling	Contractor	LEC	**M50000**
2. Socio-Economic Impacts							
Employment opportunities	Empowerment of local communities	No people will be employed as only skilled people are needed.	Skilled people already employed	monthly	Contractor	LEC	None
Health/ HIV & AIDS - Spread of diseases	Bringing in experts to the project area	Experts will be accommodated outside the community & awareness sessions conducted for employees	-	Project cycle	Contractor	LEC	**M1000**
Safety of the public from traffic and machinery accidents	During construction.	Risk areas shall be demarcated and foreman shall identify suitable routes for machinery traffic	Demarcated specific routes	Project cycle	Contractor	LEC	**M10000**
Safety of workers	On-job accidents – Dust & Noise	PPE provision; development of an incident management & reporting mechanism	Monthly H&S reports on incidents	Project cycle	Contractor	LEC	**M500000**
Work Progress to ensure programmes are on schedule	Completion of project on allocated time	Contractor will be monitored regularly	-monthly meetings & reports	Project cycle	Contractor	LEC	**M10000**
Quality of supply	To provide adequate electricity supply	Inspections and testing during construction and upon completion to ensure quality supply	Tests according to LEC standards	Last week of project completion	Contractor	LEC	project cost
Vandalism and theft	Safekeeping of material and equipment	Hire of a 24hr watchman and a establishment of a lockable store room/facility	-Store room/facility -Watchman	Project cycle	Contractor	LEC	project cost

Environmental Impacts/ Aspect	Project objectives	Mitigation Measures	Indicator	Frequency/ Significance	Responsibility	Monitoring	Costs
ESMP audit	To monitor compliance to ESMP	Inspections	Monthly reports	During and upon completion	LEC	LEC	**M300000**
Asbestos handling and disposal	Workers Safety and Health protection	Adherence to the LEC asbestos handling procedure and the RSA disposal procedure if disposal is in RSA	Disposal bags, PPE	During handling of asbestos	Contractor	LEC	project costs
Land compensation	To compensate the public where there is land used for the project	Compensate as per the Land Act, the Environment Act and the	Acceptance of cash and offer notes and public gathering minutes	Before any construction	LEC	LEC	**M663000**
10% Contingency							**M210600**
TOTAL COST							**M2316600**

8. CONSULTATIONS

8.1 The following consultation methods were used:

a. Public gatherings in villages which have potential of being affected
b. Interviews
c. The provision of project information/concerns gathering paper (Annexure E)

8.2 The issues raised included:

- electrification of the villages where the lines already pass because the relevant villages are already policing the lines;
- There must be an assurance that every Mosotho has electricity;
- Need to inform relevant stakeholders such as schools and the police prior to contractor arriving for the purposes of security and safety;
- Area where work is in progress must be demarcated and inaccessible to the public for safety
- Traffic obstruction needs to be taken care of.

9. RESPONSIBILITIES AND INSTITUTIONAL ARRANGEMENTS

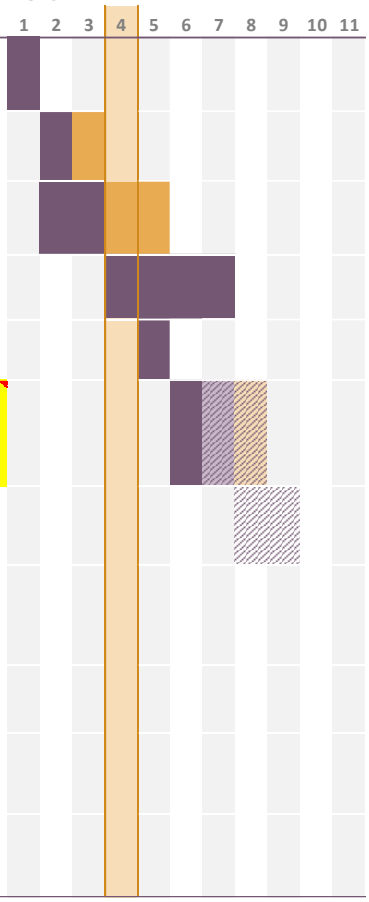
9.1 The project will be executed by the LEC which falls under the Ministry of Energy. A Project Implementation Team (PIT) under the direct supervision of the Managing Director for LEC will be set up. Other relevant bodies include:

Institution	Roles and Responsibility
Department of Environment	Provide approval of the EMP and Monitor the implementation of the EMP through monthly reports and inspections. This also includes the public consultations and any grievances if at all they will arise.
Local authorities (chiefs and community councils)	They will monitor the actual work on the ground where the contractors will be working with the view to protect the communities and their resources. They are authorities in villages.
Ministry of Finance	Monitor the disbursements of funds to ensure the implementation of the EMP and land compensations if necessary.

Institution	Roles and Responsibility
Ministry of Energy	Monitor the implementation of the EMP through monthly reports.
PIU/PIT	
Environment Specialist	• The implementation, monitoring and auditing of the project as a whole in relation to the EMP and compliance to the Environment Act and other relevant Laws; • Participate in the procurement of contractors.
The Project Manager/Coordinator	• Provide funds for the monitoring and auditing of the EMP for the project; • Approve environment related activity in line with the budget; • Ensure the monitoring of the EMP and production of the monthly reports.

10. IMPLEMENTATION SCHEDULE AND REPORTING

ACTIVITY	PLAN START	PLAN DURATION	ACTUAL START	ACTUAL DURATION	PERCENT COMPLETE
Consultation with the Department of Environment	1	1	1	1	100%
Development of the Draft Environment Management Plan	2	1	2	2	100%
Undertake Public Consultation Process	2	2	2	4	100%
Submit the Draft EMP to ADB for comments	4	4	4	4	100%
Development of the Final Draft Environment Management Plan	5	1	5	1	100%
Submission of the Final EMP to the Department of Environment for Approval	6	2	6	3	50%
Obtain Record of Decision from the Department of Environment	9	0	0	0	0%
Discussion and Provision of the approved EMP to the contractor for implementation	0	0	0	0	0%
Monitoring of the implementation of the EMP	0	0	0	0	0%
Auditing of the Compliance to the EMP by external body	0	0	0	0	0%
Production of the audit report by the consultant	0	0	0	0	0%



11. CONCLUSION:

The assessments done in this report indicate that the positive impacts of this project outweigh the negative impacts. The ESMP plan of action indicates the mitigation measures which will lower the significance of the impact. The proposed project will bring reliability of the electricity supply to the Basotho at large which assisting the Kingdom of Lesotho achieve the set targets of providing electricity to each and every Mosotho. On the other hand, it will also assist in uplifting the socio-economic status of some of the Basotho indirectly as reliable energy opens other opportunities. The bio physical environment will hardly be affected by this project as no endangered species in the project area. It is therefore concluded that the environmental impacts for the proposed development are low and the proposed mitigation measures will be adequate enough to effect the project without adversely harming the environment**.**

12. CONTACTS:

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