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**AFRICAN DEVELOPMENT  
BANK GROUP**

**PROJECT: ALASKA- KAROI POWER TRANSMISSION  
REINFORCEMENT PROJECT**

**COUNTRY: ZIMBABWE**

**EXECUTIVE SUMMARY OF THE ENVIRONMENTAL  
AND SOCIAL MANAGEMENT PLAN**

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## EXECUTIVE SUMMARY OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

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<b>PROJECT TITLE:</b>	Alaska – Karoi Power Transmission Reinforcement Project
<b>PROJECT NUMBER:</b>	P-ZW-FA0-006
<b>COUNTRY:</b>	ZIMBABWE
<b>DIVISION:</b>	ONEC 2
<b>PROJECT CATEGORY:</b>	Category 2

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### 1 INTRODUCTION

The Zimbabwe Electricity Transmission and Distribution Company (ZETDC), a subsidiary of the Zimbabwe Electricity Supply Authority (ZESA Holdings (Pvt.) Ltd.), is proposing to construct a 132kV transmission line from Alaska 330/132kV substation outside the town of Chinhoyi to Karoi. The proposed transmission line will be 85km long and will terminate in a new 132/33kV substation to be constructed in Karoi town.

The proposed project has been necessitated by the fact that the Karoi load is currently being supplied through 3 x 33kV, 54km long feeders from Mhangura 88/33kV substation which has been in use for more than 56 years. The three feeders also supply Tengwe, Magunje and Karoi North loads with a lot of t-offs along the way. The network is characterized by an overloaded and weak 11kV and 33kV network which is experiencing serious capacity constraints and is also compromising quality and reliability of supplies. Considering load projections for areas in and around Karoi, a 33kV network can no longer sustain the load demands, hence the need for a new 132kV Alaska-Karoi line and the 132/33kV Karoi substation.

#### 1.1 Objectives of the ESMP

This ESMP was prepared to bring the project into compliance with the African Development Bank's Integrated Safeguards System (ISS) and applicable national legislation and regulations of Zimbabwe. The Bank's safeguards policies and procedures and Zimbabwe's Environmental Management Act (Chapter 20:27) requires transmission line projects to be subjected to an Environmental and Social Impact Assessment (ESIA) process prior to implementation. The ESMP outlines the mitigating/enhancing, monitoring, consultative and institutional measures required to prevent, minimize, mitigate or compensate for adverse environmental and social impacts, or to enhance the project beneficial impacts. It also assigns monitoring responsibilities to specific institutions and presents the budget required to ensure effective monitoring of the project impacts during the design, construction and operation phases.

#### 1.2 Description of the main project components

The proposed project involves construction of a Single Lynx 132kV transmission line from Alaska 330/132kV substation to Karoi town. The existing Alaska substation will be extended by 50m on the western side in order to accommodate a new line bay. The 85km long transmission line will terminate in the proposed Karoi 132/33kV substation to be constructed in Karoi town. The substation will be equipped with 2 x 30MVA transformers and 5 x 33kV

line bays and will have a footprint of approximately 1.5 hectares. An access road will be constructed from the highway to the substation site. Existing 33kV lines will be re-routed into the new Karoi132/33kV substation.

The following are the project's key components

- **Substation and construction of a 132kV single circuit monopole transmission line:**
  - Single Bay extension at Alaska 330/132kV Substation
  - Construction of a 132/33kV substation at Karoi
  - Re-routing of 4 existing 33kV lines
  - Refurbishment of downstream distribution system
- **Technical Assistance**
  - Development of the National Network Masterplan
  - Environmental Social Capacity building
  - Preparation of ESIA and RAP for identified pipeline for identified projects
- **Social upliftment** (which includes drilling of boreholes and extension of selected clinics and one district hospital)
- **Project management**
  - Engineering Supervision Consultancy Services
  - Project Financial Audit
  - Independent procurement audit
  - ESMP Implementation

## 2. CONTEXT

### 2.1 Project activities and components of the environment to be affected

Key project activities which will give rise to environmental and social impacts include wayleave clearing, excavations for tower foundations, construction of access roads and migration of labour into the project area. For the substation, environmental impacts will arise from civil works and erection of steel structures. These project implementation activities will affect components of both the biophysical and the socio-economic environments.

#### 2.1.1 Environmental and social components to be affected

##### 2.1.1.1 Biophysical environment

###### *Ecology and climatic conditions*

Soils are generally the reddish-brown lithosols that are fertile hence supports crop production which is the main source of livelihoods for people in the project area. Excavations associated with project implementation have the potential to affect soils especially on sloppy ground. The area has a typical savanna type of climate characterized by hot wet summers and cool dry winters. It falls under agro-ecological region II, a region characterized by average annual rainfall ranging between 800 and 900mm and summer temperatures of between 21 and 29 degrees Celsius which fall to between 8 and 17 degrees Celsius during the winter period when ground frost is often experienced.

###### *Topography*

The project area stretches from the south-west to the north-east of Zimbabwe. Altitude varies from an average of 1166m for Hurungwe district to 1199m in Makonde district. Karoi town with an average altitude of 1275m is the highest point within the project area. The Highveld

forms the watershed between the Zambezi River (to the north) and the Limpopo River (to the south). The project area is part of the high veld region. Prominent topographic features include the Zhozhi and Chembadzi mountain ranges. Two of the alternative line routes that were considered entailed crossing these ranges at steep points hence resulted in these options being considered unsuitable.

### ***Hydrology***

The project area lies within the Sanyati River catchment area. Within the area, the main hydrological features are the Angwa and Tengwe Rivers. Tributaries for these river systems that are crossed by the transmission line at different points between Alaska Substation and Karoi town. Several dams exist on these river systems and have been the source of irrigation water in the Tengwe area for many years.

### ***Biological environment***

There are no endangered species of flora or fauna existing in the area traversed by the line neither are there known bird migratory routes. Wayleave clearing may directly affect habitats for fauna in addition to loss of flora and increased soil erosion risks.

**Flora:** Mixed miombo woodland characterizes the proposed project area. High tree density is pronounced on hilly slopes and riverine areas. The farming areas traversed by the line are largely devoid of vegetation entailing minimal wayleave clearing.

**Fauna:** Mammal species encountered in the project area include the common duiker, chacma baboon, vervet monkey and the striped mice. The loss of vegetation associated with the opening of the area to crop farming decimated wildlife habitats.

**Avifauna:** The project area is home to various bird species. Commonly encountered birds include the fork-tailed drongo, black eyed bulbul, laughing dove, red billed quelea, crowned plover, helmeted guinea fowl and white fronted bee-eater.

## **2.1.1.2 The Socio-economic environment**

### ***Population and demographics***

The three project areas of Makonde and Hurungwe rural districts and Karoi town have a combined population of 511,343 people according the 2012 census. The male to female ratio is 49.9 to 51.1% in Makonde and Hurungwe districts. Seven percent of the female population is widowed while 25.7% is orphaned. These widows and orphans are among the disadvantaged groups who will benefit from social responsibility projects associated with the transmission line project.

### ***Settlement patterns and traditional authority***

The larger portion of the proposed transmission line route dissects farming areas where settlements are scattered on different farms. The majority of the homes are traditional dwellings consisting of simple round huts under thatch. The traditional authority consists of village heads, headmen and the Chief. There are two chiefdoms in the area dissected by the line, Chief NemaKonde and Katsvere. Settlements will not be affected by the project.

### ***Local economy and livelihoods***

The project area forms part of Zimbabwe's major agricultural regions. Livelihoods are largely centered on production of both food and cash crops which include maize, cotton, sorghum, groundnuts and tobacco, grown under rain-fed conditions. Almost all the farmers keep

livestock especially cattle. The transmission line will dissect arable lands, potentially causing economic displacement.

### ***Land tenure***

Land in the project area is categorized as state land under the Ministry of Lands and Rural Resettlement. Farmers have official offer letters from the Ministry which are documents recognizing them as users of the land. ZETDC applied for and was granted a wayleave by the Ministry to enable construction of the line.

### ***Infrastructure and social services***

Infrastructure and services such as telecommunication, shops, schools and banks are readily available in Karoi town. Basic infrastructure is still lacking or poorly developed in the farming area dissected by the line. There are isolated small grocery shops. Telephone and GSM mobile coverage is very limited, with some parts of the project area having no coverage. Radio reception is also very poor or completely unavailable.

### ***Water supply, sanitation and waste management***

Municipal water and waste management services are available in Karoi town. In the rest of the project area which are farming areas, water and sanitation facilities are still being developed. A significant number of people in some parts of the project area still draw water from unprotected sources, mainly dams and are exposed to waterborne diseases..

### ***Health***

Clinics and private medical doctors are available in Karoi town, but not so readily available in the farming areas dissected by the transmission line. Hurungwe District is served by Hurungwe District Hospital located at Magunje Growth Point while Makonde District is served by the provincial Hospital in Chinhoyi town. There are small clinics in other parts of the project area. The majority of them are in dire need of upgrading.

### ***Education***

The education situation closely resembles that of health. Schools are available in Karoi town to cater for both primary and secondary education. However, in the farming areas dissected by the line, schools are few and far apart resulting in children travelling long distances. In some areas, parents are pooling resources to construct schools so as to reduce distances travelled to school by their children.

### ***Natural resources access and ownership***

The principal legislation governing natural resource ownership and access in rural Zimbabwe is the Rural District Councils Act (Chapter 29:13). It sets rural district authorities as separate and autonomous legal corporate institutions with regulatory functions on natural resource access and use. This is complemented with the Traditional Leaders Act (Chapter 29:01). Traditional leaders also have authority over access to resources, especially forests resources. They set rules regulating access and use and are empowered to fine offenders. Both the traditional leaders and the Rural District Councils thus have important functions in regulating access to and use of communally owned natural resources in the area traversed by the transmission line.

### ***Civic organizations in the project area***

There are several NGOs operating in the project area. The following were identified as stakeholders and therefore partners in the implementation of the project

- Farm Community Trust of Zimbabwe
- Civic Forum on Human Development
- Pamuhacha

These NGOs will independently monitor aspects of the project implementation process. Pamuhacha is active in the area of HIV/AIDS awareness and support to patients and will be requested to extend their services to project workers. These NGOs are already working in the project area and will be supported to enable them to monitor implementation of components of this project.

### ***Gender issues***

Gender issues in the project area are promoted through the Ministry of Women Affairs, Gender and Community Development. The Ministry has representation at the ward level and was involved in stakeholder consultative meetings held in the project area. As a result, both men and women actively contributed and agreed on how they will participate in the project implementation process.

The social upliftment projects identified during the consultative meetings reflects the interests of both men and women although some projects such as the refurbishment of maternity wards at Sadoma Clinic and Hurungwe District Hospital are meant to benefit women directly. ZETDC has also taken a deliberate decision to ensure that women constitute at least 60% of the people employed by the project during the construction phase and for wayleave maintenance during the operation phase as contribution to Government efforts to mainstream gender issues in economic development initiatives.

## **3. BENEFICIAL AND NEGATIVE IMPACTS AND CLIMATE CHANGE RISK**

### ***3.1 Beneficial impacts***

The proposed line and the resulting network configuration at Karoi will enable the ZETDC to meet the existing load in full and connect new users. This is expected to create new business and employment opportunities hence the project will contribute to sustainable economic growth and improvement in the social well-being of the residents of Karoi town, Makonde and Hurungwe districts. A total of 300 jobs are set to be created during the construction phase while wayleave maintenance during the operation phase will benefit local people. Corporate social responsibility projects to be implemented alongside the project will uplift the lives of the vulnerable and disadvantaged groups who include widows, orphans and the disabled identified during stakeholder consultative meetings. The project will also upgrade 60km of existing access roads that will be used to transport materials to the project area.

### ***3.2 Negative impacts***

#### ***Economic displacement***

A total of 35 farmers and their dependents (185 people) will be economically displaced during the construction phase. Placement of the monopole in their fields brings about long term changes to the manner in which the land will be used. This is a permanent loss on the part of the affected farmers.

#### ***Health and safety impacts***

Excavations associated with line construction work constitute a hazard to local people, especially children. Dust emissions from construction of access roads and excavations for tower foundations are temporary activities with implications on health. Potential spread of

sexually transmitted infections (STIs) including HIV/AIDS was identified as a health risk that will require management during the construction period.

***Environmental pollution arising from waste disposal including spillage of oil and other hazardous chemicals***

Construction works generate various forms of waste which include conductor off cuts, paper, plastics and various other waste streams from domestic activities. Oil leaks from vehicles and potential spillage of transformers contaminates soil. An effective waste management plan will be developed and implemented.

***Propagation of invasive vegetation species***

Cleared wayleaves are often invaded by invasive species. *Lantana camara* is the main invasive species known to affect recently cleared sites in the project area. There is potential for the propagation of this plant along the wayleave and eventually in arable fields along the transmission line.

***Potential conflicts between local people and construction staff***

Labour migration has the potential to cause various forms of social problems in the project area. Workers with disposable incomes often take advantage of the poorer communities and upset the social moral fabric, customs and practices. This will be monitored consistently during the construction period.

***Destruction of cultural heritage and burial sites***

The construction phase has the potential to destroy cultural sites as well as burial places that may not have been identified during the planning phase. The contractor will be required to watch out for such sites and to be guided by the requirements of the National Museums and Monuments Act if they are encountered

***Traffic and construction accidents***

The construction phase will witness an increase in vehicular traffic to and from the project area and will raise the risk of traffic accidents. These risks will be minimized through adherence to speed limits and placing adequate road signs in the area.

***Loss of vegetation and habitats***

Clearing of vegetation from the wayleave is the main unavoidable negative impact associated with implementation of the project. This will also affect fauna and avifauna habitats as well as exposing soils to erosion especially on sloppy ground.

***Electrocution of people***

The major negative impact associated with the operation phase is electrocution of people. This was identified by local people as a potential major negative impact. Vandalism of transmission lines results in the collapse of some towers and exposing people and livestock to the electrocution risk. Awareness campaigns will be undertaken in the project area during the construction and operation phases of the project.

***Exposure to electromagnetic fields (EMF)***

Local people living in areas along the transmission line are at the greatest risk of exposure to electromagnetic fields. Exposure to the EMF is believed to be associated with health problems. The risk will be managed by ensuring that no human settlements are located within the line's

30m wayleave. ZETDC will continuously monitor encroachment into the wayleave and ensure that it is kept free from settlements.

***Encroachment into the wayleave***

Establishment of settlements within the wayleave increases the risk of electrocution and exposure to EMF. A few cases of encroachment into the wayleave have been observed along some of ZETDC’s transmission lines. This will be monitored and managed along the proposed Alaska- Karoi 132kV transmission line.

***3.3 Climate change risk***

Evidence of climate change in the project area during the last 15 years include an increase in the frequency of occurrence of extreme weather conditions such as heat waves and flash floods, decrease in annual average rainfall, receding water table and the consequent drying up of some surface and ground water sources. Frequent occurrence of droughts linked to climate change has compromised agricultural production.

The transmission line project presents both risks of contributing to the global climate change problem as well as opportunities for abating the risk. Clearing of the 30 meter wayleave constitutes a micro level depletion of carbon sinks hence contributing to the climate change problem. However, by enabling connection of more homes and institutions especially in the rural areas, the project plays an important role in reducing the climate change risk as more people will have access to electricity hence reducing reliance on fossil fuel. The climate change risk was incorporated in the design parameters for the line.

**4. ENHANCEMENT/MITIGATION MEASURES AND COMPLEMENTARY INITIATIVES**

Mitigation and enhancement measures for the significant direct impacts of the project are described in the table below

Benefit	Enhancement
Improved power supplies to Karoi Town, Makonde and Hurungwe Districts	- Attend to faults quickly to minimize outage time
Enhanced economic activities in Karoi and surrounding areas	- Connection of additional 5,000 customers in all economic sectors in the project area
Employment creation	- Employ local people for all non-technical jobs and wayleave clearing. Prioritize women and other vulnerable people

Impact	Mitigation
Disturbances to farming activities (Economic displacement)	- Avoid construction during the rainy season - Compensate farmers for crop loses - Use the monopole to minimize space taken up by towers - Contract affected farmers to clear wayleave during the operation phase
Safety and health impacts	- Ensure that the Contractor develops and implements Construction Health and Safety plans - Provide PPE and ensure that workers use it - Maintain good hygiene standards in construction camps



Impact	Mitigation
Environmental pollution associated with waste disposal including spillage of oil and hazardous chemicals	<ul style="list-style-type: none"> <li>- Segregate waste and dispose at approved sites</li> <li>- Sanitize oil contaminated sites</li> <li>- Dispose hazardous wastes appropriately at approved sites</li> </ul>
Loss of vegetation and habitats	<ul style="list-style-type: none"> <li>- Utilize part of the existing wayleave for the Kariba lines</li> <li>- Confine vegetation clearance to the wayleave</li> <li>- Liaise with the Forestry Commission and participate in afforestation activities in the area</li> </ul>
Soil erosion	<ul style="list-style-type: none"> <li>- Install sediment traps or screens to control runoff and sedimentation</li> <li>- Mechanical control structures such as stone checks, culverts and drainage ditches on erosion prone sites</li> <li>- Rehabilitate loose soil from excavations before leaving the site</li> <li>- Confine vehicle movements to defined access roads</li> </ul>
Electrocution of people	<ul style="list-style-type: none"> <li>- Design implement safety campaign programmes for communities along the line</li> <li>- Attend to fallen towers/conductors promptly</li> </ul>
Exposure to electromagnetic fields (EMF)	<ul style="list-style-type: none"> <li>- Ensure that settlements are not built within the wayleave</li> </ul>
Propagation of alien and invasive vegetation species in the wayleave	<ul style="list-style-type: none"> <li>- Regular inspection of the wayleave and clearing alien or invasive species</li> </ul>
Potential conflicts between local people and construction staff	<ul style="list-style-type: none"> <li>- Minimize number of outsiders working in the area by employing locals for non-skilled work</li> </ul>
Encroachment into the wayleave	<ul style="list-style-type: none"> <li>- Regular patrols of the line route to ensure that settlements are not established within the line's wayleave</li> </ul>
Spread of HIV/AIDS and other sexually transmitted infections	<ul style="list-style-type: none"> <li>- Sensitize workforce and local communities on HIV/AIDS</li> <li>- Collaboration with NGOs undertaking HIV/AIDS awareness and support programmes – Pamuhacha</li> </ul>
Increased risk of traffic accidents on local roads	<ul style="list-style-type: none"> <li>- Erect adequate construction warning signs</li> <li>- Enforce maximum speed limits of 40km/hr for construction vehicles on all access roads</li> </ul>
Destruction of cultural heritage and burial sites	<ul style="list-style-type: none"> <li>- Avoid cultural heritage and burial sites</li> <li>- Consult community leaders and custodians for decision in the event of encountering graves</li> <li>- In the event of exhumation of graves, meet all associated costs</li> <li>- Consultations with the National Museums and Monuments</li> </ul>

#### 4.2 Social upliftment initiatives

The project has a social upliftment component aimed at improving the socio-economic conditions of people in the project area. The following projects will be implemented as part of the project

- (a) **Water supply projects:** 65 boreholes will be drilled in different wards along the transmission line to benefit approximately 62 407 people who do not have access to safe drinking water
- (b) **Projects to help improve health delivery system** – Extension of maternity wings at Sadoma clinic and Hurungwe Hospital, construction of 2 nurses homes at Sadoma clinic and rewiring of Hurungwe Hospital

- (c) **Project to improve welfare of elderly people** – rehabilitation of the bathrooms and toilets at Karoi Old People’s home
- (d) **Project to improve welfare of children** – Installation of a greenhouse at Karoi Children’s home
- (e) **Rural electrification**–Improving access to electricity by rural communities through installation of transformers and downstream network refurbishment. This component will result in schools, villages and health institutions accessing electricity.

**5. ENVIRONMENTAL AND SOCIAL MONITORING PROGRAMME**

The successful implementation of the project’s Environmental and Social Monitoring Plan (ESMP) requires co-operation between the various parties involved in project construction. Monitoring involves checking whether the proposed mitigation measures are effective and development of alternative or supplementary mitigation measures if intended results are not achieved. On the basis of this monitoring, proposed mitigation or enhancement measures may be modified, ceased or replaced if they are not working. To ensure social and environmental sustainability of the project, ZETDC will appoint an independent Environmental Consultant and an Evaluator to monitor implementation of the ESMP. The Contractor will be required to appoint a site Environmental Officer who will work in collaboration with the ZETDC appointed Environmental Consultant.

The table below is an extract from the proposed environmental and social monitoring programme for the project showing the parameters that will be monitored, the monitoring method, frequency and monitoring responsibility.

Issue	Monitored parameters	Locality	Monitoring methodology	Monitoring frequency	Responsibility
Improved power supplies to Karoi Town, Makonde and Hurungwe Districts	Time taken to attend to faults on the network	Alaska-Karoi 132kV line and Karoi local network	Visual inspection of the network	Daily	ZETDC
Enhanced economic activities in Karoi and surrounding areas	-Number of new customers connected by economic activities		Visual inspection of the network	Monthly	ZETDC
Creation of employment opportunities	-Number of locals employed	Recruitment office	Employment records	Monthly	ZETDC Contractor District Administrators
Disturbances to farming activities (Economic displacement)	-Implementation of the RAP -Adherence to agreements with affected farmers	Farms dissected by the line	Visual inspections of affected farms	Weekly	ZETDC Ministry of Lands AGRITEX Local NGOs Independent Evaluator
Occupational health and safety	-Provision of PPE and its use -Safety signs posted around construction sites	Construction sites Camp sites	Visual	Daily	- NSSA - ZETDC

<b>Issue</b>	<b>Monitored parameters</b>	<b>Locality</b>	<b>Monitoring methodology</b>	<b>Monitoring frequency</b>	<b>Responsibility</b>
Pollution associated with waste disposal	-Waste management system -Waste disposal sites	- Construction sites - Camp sites	Visual	Daily	Environmental Consultant EMA Makonde and Hurungwe RDCs
Loss of vegetation and habitats	-Incidents of vegetation clearance outside the wayleave	Construction sites	Visual	Weekly	Environmental Consultant Forestry Commission
Soil erosion	-Soil loss from construction sites	Construction area, stockpiles	Visual	Weekly	ZETDC, Environmental Consultant EMA
Air quality/ dust	Suspended dust particulate matter	Construction sites	Visual / Dust measurements to ensure adherence to statutory limits	Weekly	ZETDC NSSA EMA
Electrocution of people	-Safety campaigns carried out -Number of cases recorded	Entire line from Alaska to Karoi	-Inspection of records	Monthly	ZETDC Local people
Exposure to electromagnetic fields (EMF)	-Construction of homesteads in the wayleave	Entire line from Alaska to Karoi	-Visual inspections	Quarterly	ZETDC Local people
Propagation of invasive species	-Occurrence of invasive species in the wayleave	Wayleave from Alaska to Karoi	-Visual inspections	Quarterly	ZETDC Local people EMA
Conflicts between local people and construction staff	-Availability of grievance registers to the general public -Actions taken to address grievances	Project area between Alaska and Karoi	-Inspection of the grievance records	Monthly	ZETDC Local leadership Farm Community Trust MLRR District Administrators
Spread of HIV/AIDS and other sexually transmitted infections	-HIV/AIDS awareness campaigns -Partnerships with other HIV/AIDS players in the area e.g. Pamuhacha -availability of HIV/AIDS awareness materials and condoms on site	Project area between Alaska and Karoi	-Records of HIV/AIDS awareness meetings/campaign	Monthly	- ZETDC - Ministry of Health and Child Care -Pamuhacha

**6. PUBLIC CONSULTATION AND DISCLOSURE**

Stakeholder consultation is a mandatory aspect of Zimbabwe’s ESIA process. The consultation process for the Alaska-Karoi transmission line project was carried out in line with the country’s requirements and requirements of the African Development Bank. The key objective was to inform local and institutional stakeholders about the 132 kV transmission line project and give the stakeholders an opportunity to participate in the project from a very early stage. The project affected persons (PAPs) and stakeholders including Chiefs and Government institutions operating in the area were consulted. Headmen, local communities, the business community and households residing along the proposed route participated in meetings held at Karoi Town (ZETDC Depot) on 30 May 2016, Tengwe (Tengwe Country Club) on 5 June 2016 and Sadoma Business Centre on 8 June 2016.

These meetings were attended by 595 people drawn from the surrounding areas. There was an overwhelming support for the implementation of the project from all stakeholders who participated in the meetings. They believed that the transmission line project and associated social responsibility projects will go a long way in raising their standards of living. The social acceptability of the project was very high.

A continuous stakeholder consultation programme has been designed and will be rolled out and sustained throughout the project life-cycle for the purpose of ensuring that stakeholders are kept updated about the project and implementation progress. The ESMP will be availed and discussed so as to ensure that stakeholders are familiar with its contents. This will empower the local people to enable them to check effectiveness of the mitigation measures outlined in the ESMP.

**7. RESPONSIBILITIES AND INSTITUTIONAL ARRANGEMENTS**

The implementation of enhancement and mitigation measures and the completion of the monitoring program require the establishment of responsibilities among the various organizations involved in project implementation and operation. The project will build local skills and capacity to monitor impacts associated with the transmission line project and the other social responsibility projects that will be implemented in the project area.

**Monitoring Agencies:** ZETDC has environment, health and safety officers who will have oversight over all environmental, health and safety issues. The institutional arrangements and responsibilities in the implementation of the ESMP are highlighted in the following table. ZETDC consulted and agreed terms with all the institutions that will be involved in monitoring activities

Institution	Function/role
AfDB	<ul style="list-style-type: none"> <li>• Project financier</li> <li>• Provision of supervisory and technical support to the project</li> </ul>
ZETDC Project Implementation Team	<ul style="list-style-type: none"> <li>• Overall responsibility on environmental and social performance of the project</li> <li>• Supervising Contractor</li> <li>• Ensure effective implementation of the ESMP</li> </ul>
Contractor	<ul style="list-style-type: none"> <li>• Implement all aspects of the ESMP</li> </ul>
Independent Environmental Consultant	<ul style="list-style-type: none"> <li>• Co-ordinates implementation of the ESMP</li> <li>• Overall monitoring of implementation of the ESMP</li> <li>• Producing monitoring reports</li> </ul>

Institution	Function/role
	<ul style="list-style-type: none"> <li>Oversee the inter-institutional co-ordination for environmental mitigation, monitoring and supervision</li> </ul>
Independent Evaluator	<ul style="list-style-type: none"> <li>Evaluation of compensation entitlements with regards to crop losses or damage arising from project implementation</li> </ul>
Local community	<ul style="list-style-type: none"> <li>Reporting problems, grievances arising from project implementation</li> </ul>
Local leaders such as Chiefs, Headmen, Village Heads, Councillors etc.	<ul style="list-style-type: none"> <li>Safeguarding community interests</li> </ul>
Environmental Management Agency (EMA)	<ul style="list-style-type: none"> <li>Ensuring adherence to the existing environmental policy requirement in the course of ESMP implementation</li> <li>Carrying out planned and unplanned site inspections so as to enforce compliance</li> </ul>
Ministry of Lands and Rural Resettlement	<ul style="list-style-type: none"> <li>Attending to land use issues and resolving disputes related to land</li> </ul>
AGRITEX	<ul style="list-style-type: none"> <li>Monitoring disturbances to farming operations and offering valuation service</li> </ul>
Ministry of Women Affairs, Gender and Community Development	<ul style="list-style-type: none"> <li>Gender mainstreaming into the project</li> <li>Identification of vulnerable and disadvantages members for employment</li> </ul>
Ministry of Health and Child Care	<ul style="list-style-type: none"> <li>Monitoring public health issues</li> </ul>
District Administrators	<ul style="list-style-type: none"> <li>Mediating on land issues</li> <li>Monitoring engagement of local labour</li> </ul>
Makonde and Hurungwe Rural District Councils	<ul style="list-style-type: none"> <li>Monitoring implementation of social responsibility projects</li> </ul>
Zimbabwe National Water Authority (ZINWA)	<ul style="list-style-type: none"> <li>Monitoring commercial use of water by the project and water pollution issues</li> </ul>
National Social Security Authority (NSSA)	<ul style="list-style-type: none"> <li>Registration of work sites and ensuring adherence to safety principles</li> </ul>
Pamuhacha	<ul style="list-style-type: none"> <li>HIV/AIDS awareness activities among construction workers</li> </ul>
Farm Community Trust	<ul style="list-style-type: none"> <li>Protection of interests of farmers in the project area</li> <li>Providing inputs to compensation for crop damage</li> </ul>

**Reporting:** The Environmental Consultant will be responsible for the preparation of monthly, quarterly and annual environmental and social reports. The quarterly reports will be submitted to EMA in line with the requirements of the Environmental Management Act (Chapter 20: 27).

### 7.1 Capacity building requirements

In order to build capacity in the institutions involved in project monitoring, training and regular progress meetings will be held during the construction phase. Capacity building costs are shown in the table below

Cost items	Beneficiary	Number	Estimated cost (USD)
Induction workshop	All institutions involved in project monitoring including representatives of the local communities	1	5,000
Quarterly update meetings	All institutions involved in project monitoring including representatives of the local communities	4	12,000
Safety, Health and Environmental training (By NSSA)	ZETDC, RDCs project staff	4	20,000
<b>Total</b>			<b>37,000</b>

## 8. ESTIMATED COST

The environmental and social mitigation and monitoring cost has been prepared for the project. The total costs for implementing the mitigation and enhancement measures for the project is estimated at USD 426,000. This cost covers expenses for compensation, environmental management, monitoring and capacity building as summarized in the table below

Activity	Estimated cost (USD)
Environmental Consultant fees	80,000
Compensation for disturbances to farming activities	200,000
HIV/AIDS intervention	28,000
Health and safety monitoring and mitigation	43,000
Environmental monitoring and mitigation	38,000
Capacity building (Training)	37,000
<b>Total</b>	<b>426,000</b>

## 9. Implementation schedule and reporting

The Project Team, together with the independent Environmental Consultant will oversee the implementation of the ESMP in accordance with the monitoring plan. The independent consultant will carry out environmental compliance monitoring. The Contractor shall be responsible for implementation of environmental and social mitigation measures under the supervision of the independent consultant.

All mitigation and enhancement measures will be implemented during the implementation phase. Progress on the implementation of the ESMP will be included in the overall periodic progress reports, midterm review and monitoring and evaluation reports of the project that is set to be sent to EMA and the AfDB.

## 10. Conclusion

The proposed project has immense socio-economic benefits to communities in the project area as well as to ZETDC as the project developer. The negative impacts of the project can all be managed since they are similar to those being managed in similar transmission line construction projects being implemented by ZETDC. For sustainability of the project, management activities will be efficiently and effectively implemented in collaboration with the expert stakeholder institutional identified in this document. ZETDC will ensure that employment opportunities created by the project benefit the local people, especially women and other disadvantaged groups.

## 11. References & Contacts

References:

1. African Development Bank Integrated Safeguards System Documentation
2. 2016 ESIA for Alaska- Karoi 132kv Transmission Line & Karoi 132/33kv Substation, by ZETDC.

Contacts:

### **African Development Bank**

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