REPUBLIC OF BOTSWANA

BOTSWANA POWER CORPORATION

BOTSWANA POWER CORPORATION

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

(ESMF)

FOR THE RENEWABLE ENERGY SUPPORT AND ACCESS (RESA) PROJECT

P181221

May 17, 2024

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ABBREVIATIONS AND ACRONYMS

AIA	Archeological Impact Assessment
AIDS	Acquired immunodeficiency syndrome
BDS	Botswana Demographic Survey
BERA	Botswana Energy Regularity Authority
BESS	Battery Energy Storage System
BPC	Botswana Power Company
CITES	Convention on International Trade in Endangered Species
CLO	Community Liaison Officer
COD	Commercial operation date
DEA	Department of Environmental Affairs
DHMT	District Health Management Teams
DSWM	Department of Sanitation and Waste Management
DWMPC	Department of Waste Management and Pollution Control
EA	Environmental Authorization
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPRP	Emergency Preparedness and Response Plan
ESA	Environmental and Social Assessment
ESCP	Environmental and Social Commitments Plan
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESIRT	Environmental and Social Incident Reporting Tool
ESMAP	Energy Sector Management Assistance Program
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards
GBV	Gender Based Violence
GNI	Gross National Income
GRM	Grievance Redress Mechanism
HDI	Human Development Index
HFC	Hydrofluorocarbons
HIV	Human Immunodeficiency Virus
IFC	International Finance Corporation
IPF	Investment Project Finance
IRP	Integrated Resource Plan
IUCN	International Union for Conservation of Nature
LMP	Labor Management Plan
MDCC	Mini-distribution control centres
MDG	Millennium Development Goals
MSDS	Material Safety Data Sheets
MWh	Megawatt hour
NDP	National Development Plan
NEP	National Energy Plan
OHS	Occupational Health and Safety
PAP	Project Affected Persons

PCB	Polychlorinated biphenyls
PFC	Perfluorochemicals
PPE	Personal Protective Equipment
PV	Photovoltaic
RAP	Resettlement Action Plan
RE	Renewable Energy
SAPP	Southern Africa Power Pool
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SHER	Safety, Health, Environment and Risk
SOGI	Sexual Orientation and Gender Identity
SOPs	Standard Operating Procedure
STATCOM	Static Synchronous Compensator
TA	Technical Assistance
TML	Transmission Line
UNDP	United Nation Development Plan
UNFCCC	United Nations Framework Convention on Climate Change
VRE	Variable Renewable Energy
WAB	Water Appointment Board
WEEEP	Waste Electrical and Electronic Equipment Management Plan
WHO	World Health Organization

Executive Summary

The Government of Botswana has requested support from the World Bank for the Botswana Renewable Energy Access and Support Project (P181221). The project will support climate resilient and critical upgrades of grid infrastructure in Botswana, where power is dependent on supply from South Africa. The investment will strengthen the Botswana Power Company (BPC) transmission network and increase capacity to supply new load and uptake new Variable Renewable Energy (VRE) generation, unlocking future opportunities for BPC to generate additional revenues and to increase power trade in South Africa Power Pool (SAPP).

The project is structured around three components: (i) grid investments to support the integration and management of Variable Renewable Energy. Under this component the project will support the construction of Battery Energy Storage Systems located at Selebi Phikwe and Jwaneng where the first large-scale solar PV plants are envisaged (100MW PV at each of these sites), installation of static synchronous compensators (STATCOM) at four substations: Francistown 1, Legothwane, Segoditshane 1 and Ramotswa; upgrading of the supervisory Control and Data Acquisition System (SCADA) and mini-distribution control centers; (ii) electrification of 23 rural villages in the Borolong area. Activities supported under this component consist of the construction of a 160Km 66Kv transmission line, construction of two new substations at Mabule and Pitsane-Molopo, expansion of the Lobatse substation and 46km 33kV distribution line from Pitsane to Hebron, and (iii) TA, as set out in further detail below. The project is expected to enable the utility BPC to integrate and manage the first large-scale pipeline of RE projects through critical investments to manage their variability and dispatchability as well as to support the Government of Botswana with rolling out its rural electrification programme by financing the grid expansion to the villages in the Borolong area. In addition, the project will also finance TA to empower the key stakeholders in managing renewable energy projects. The project is anticipated to take approximately 15 to 18 months to complete, and it's anticipated to provide employment for approximately 100 workers (Skilled – 25, Semi-skilled – 25 and Unskilled – 50 workers).

The overall environmental and social risk rating for the project is considered *Substantial* and will be further monitored during implementation as information on the proposed route alignment of the Transmission line and distribution network and BESS becomes available during project implementation. The key environmental and risks and impacts are: removal of vegetation; soil and water contamination due to disposal and management of general and hazardous waste during the construction and end-of life batteries disposal; occupational health and safety of workers; nuisances related to air and noise emissions, community health and safety; potential small to medium scale land acquisition and land easement arrangements (to be assessed further and confirmed during EA instrument preparation); temporary labour influx needed for construction activities, and associated GBV/SEA/SH risks; and risk of potential exclusion of stakeholders, which creates the need for robust stakeholder engagement.

This Environmental and Social Management Framework (ESMF) is developed to support the environmental and social due diligence process that will be followed for this project. The objective of the ESMF is to assess and mitigate potential negative environmental and social risks and impacts of the Project consistent with the Environmental and Social Standards (ESSs) of the World Bank and national requirements. More specifically, the ESMF aims to (a) assess the potential preliminary environmental and social risks and impacts of the proposed Project and propose mitigation measures; (b) establish procedures for the environmental and social screening, review, approval, and implementation of activities; (c) specify

appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social issues related to the activities; (d) identify the staffing requirements, as well as the training and capacity building needed to successfully implement the provisions of the ESMF; (e) address mechanisms for public consultation and disclosure of project documents as well as redress of possible grievances; and (f) establish the budget requirements for implementation of the ESMF.

The ESMF should be read together with other plans prepared for the project as a basis for project appraisal, including the Stakeholder Engagement Plan (SEP), the Labour Management Plan (LMP) and the Environmental and Social Commitment Plan (ESCP).

1 Introduction

This Environmental and Social Management Framework (ESMF) is developed to support the environmental and social due diligence provisions for activities financed by the World Bank in the Botswana Renewable Energy Access and Support Project (P181221). The project will support climate resilient and critical upgrades of grid infrastructure in Botswana, where power is dependent on erratic supply from South Africa. The investment will strengthen the Botswana Power Company (BPC) transmission network and increase capacity to supply new load and uptake new Variable Renewable Energy (VRE) generation, unlocking future opportunities for BPC to generate additional revenues and to increase power trade in South Africa Power Pool (SAPP). In addition, the project will provide technical assistance (TA) for institutional capacity building and support for the development of sustainable and bankable Renewable Energy (RE) projects planned under the Integrated Resource Plan (IRP) and empower key stakeholders in this respect.

This ESMF follows the World Bank Environmental and Social Framework (ESF) as well as the national laws and regulations of Botswana. The objective of the ESMF is to assess and mitigate potential negative environmental and social risks and impacts of the Project consistent with the Environmental and Social Standards (ESSs) of the World Bank ESF and national requirements. More specifically, the ESMF aims to (a) assess the potential preliminary environmental and social risks and impacts of the proposed Project and propose mitigation measures; (b) establish procedures for the environmental and social screening, review, approval, and implementation of activities; (c) specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social issues related to the activities; (d) identify the staffing requirements, as well as the training and capacity building needed to successfully implement the provisions of the ESMF; (e) address mechanisms for public consultation and disclosure of project documents as well as redress of possible grievances; and (f) establish the budget requirements for implementation of the ESMF.

The ESMF should be read together with other plans prepared for the project as a basis for project appraisal, including the Stakeholder Engagement Plan (SEP), the Labour Management Plan (LMP) and the Environmental and Social Commitment Plan (ESCP). The Environmental and Social Assessments (ESAs) will be prepared by an independent consultant, based on the outcome of the screening exercises, prior during the project design phase and prior to the start of construction.

2 Project Description

At 73%, national electrification in Botswana is low by global standards and relative to per capita income. Nearly all of Botswana's electricity is currently generated from fossil fuel-based sources, with coal accounting for over 97 percent of total electricity generation. Supply is generally unreliable, and Botswana is heavily dependent on electricity imports from Southern African Power Pool countries, which account for 38% of total supply.

The country has excellent solar and wind resources, which presents a promising source of clean and affordable electricity for the country. The Government of Botswana (GoB) plans to increase the RE share of the generation mix to 15% by 2030 and 50 percent by 2036. It identifies climate change, energy diversification and universal energy access as key priorities. This approach has been translated into the adoption of an IRP in 2022 which targets significant installed capacity of solar and wind in the country by

2030 as well as Battery Energy Storage Systems (BESS), which are expected to play a key role to address VRE integration as the country opens up to private RE generation. The proposed project will support Botswana's integration of VRE by financing critical grid investments.

The project is structured around three components: (i) grid investments to support the integration and management of VRE, (ii) electrification of rural villages in the Borolong area and (iii) TA, as set out in further detail below. The project is expected to enable the utility BPC to integrate and manage the first large-scale pipeline of RE projects through critical investments to manage their variability and dispatchability as well as to support the Government of Botswana with rolling out its rural electrification programme by financing the grid expansion to the villages in the Borolong area. In addition, the project will also finance TA to empower the key stakeholders in managing renewable energy projects.

Component 1: Grid upgrades to enable integration and management of VRE (GCF loan US$30 million and IBRD loan US$ 73 million). *Subcomponent 1* consists of the design, supply, installation and commissioning of utility-scale BESS for an estimated capacity/energy of approximately 50MW/200MWh and the cost of an Owners Engineer who will assist BPC in the supervision of the BESS construction and commissioning. BESS has been identified as a priority investment under the IRP and has been confirmed as a critical investment by the Energy Sector Management Assistance Program (ESMAP)-funded Variable Renewable Energy (VRE) integration study, needed when the first pipeline of photovoltaic (PV) projects reaches commercial operation date (COD) in 2026. The asset lifetime is expected to be 20 years. A feasibility study has been carried out by a third-party consultant (Tractebel, 2024) with the following use cases being identified: (i) amelioration of primary reserve, (ii) amelioration of secondary reserve (iii) reduction of RE curtailment, (iv) reduction of diesel generation, (v) reduction of coal generation and (vi) reduction of imports. The study recommends lithium iron phosphate batteries as the most flexible and reliable energy storage solution, compared with other storage systems. The BESS is planned to be located at Selebi Phikwe and Jwaneng where the first large-scale solar PV plants are envisaged (100MW PV at each of these sites), with a targeted COD of 2025 and 2026. The preliminary environmental and social findings from the BESS feasibility study and findings from the Solar PV farm ESIA (Loci environmental, 2023) were considered and are incorporated in this ESMF, where relevant. Selebi-Phikwe solar project will be supported by International Finance Corporation (IFC).

The motivation for BESS is strongly reinforced by the Tractebel (2024) feasibility study. Utility-owned BESS projects are particularly valuable for stabilizing and securing the grid. Utilities are responsible for maintaining a steady power supply, and BESS systems play a role in this by quickly responding to changes in energy supply and demand. They can release stored energy during times of high demand, which reduces strain on the grid and prevents power outages. This adaptability in regulating the grid's energy flow is crucial, especially as more renewable energy sources with variable outputs are adopted. Additionally, utility-owned BESS projects offer an effective solution for incorporating renewable energy into the grid. Renewable sources like solar and wind can be unpredictable, but BESS can store excess energy produced when these sources are at their peak and release it when needed. This process helps utilities ensure a consistent and reliable power supply to consumers. This not only improves the grid's sustainability but also positions utilities as key players in the transition to cleaner energy (Tractebel, 2024:19). The study concludes that utility-owned projects involving large-scale Battery Energy Storage Systems offer a strategic pathway for utilities to modernize their operations while maintaining grid stability and reliability. By leveraging the capabilities of BESS, utilities can tackle issues related to peak demand, integrate renewable energy, and provide essential grid services. As the energy landscape evolves, these projects position utilities in the journey toward a more sustainable and resilient energy future.

Figure 2-1: Example *of a 35 MW BESS unit located at located in Aylesford, UK (Source: Eskom, 2018)*

Figure 2-2. Approximate *location of the Jwaneng solar PV farm in which the BESS installation will take place (final location of BESS and substations to be determined within the area defined for future PV)*

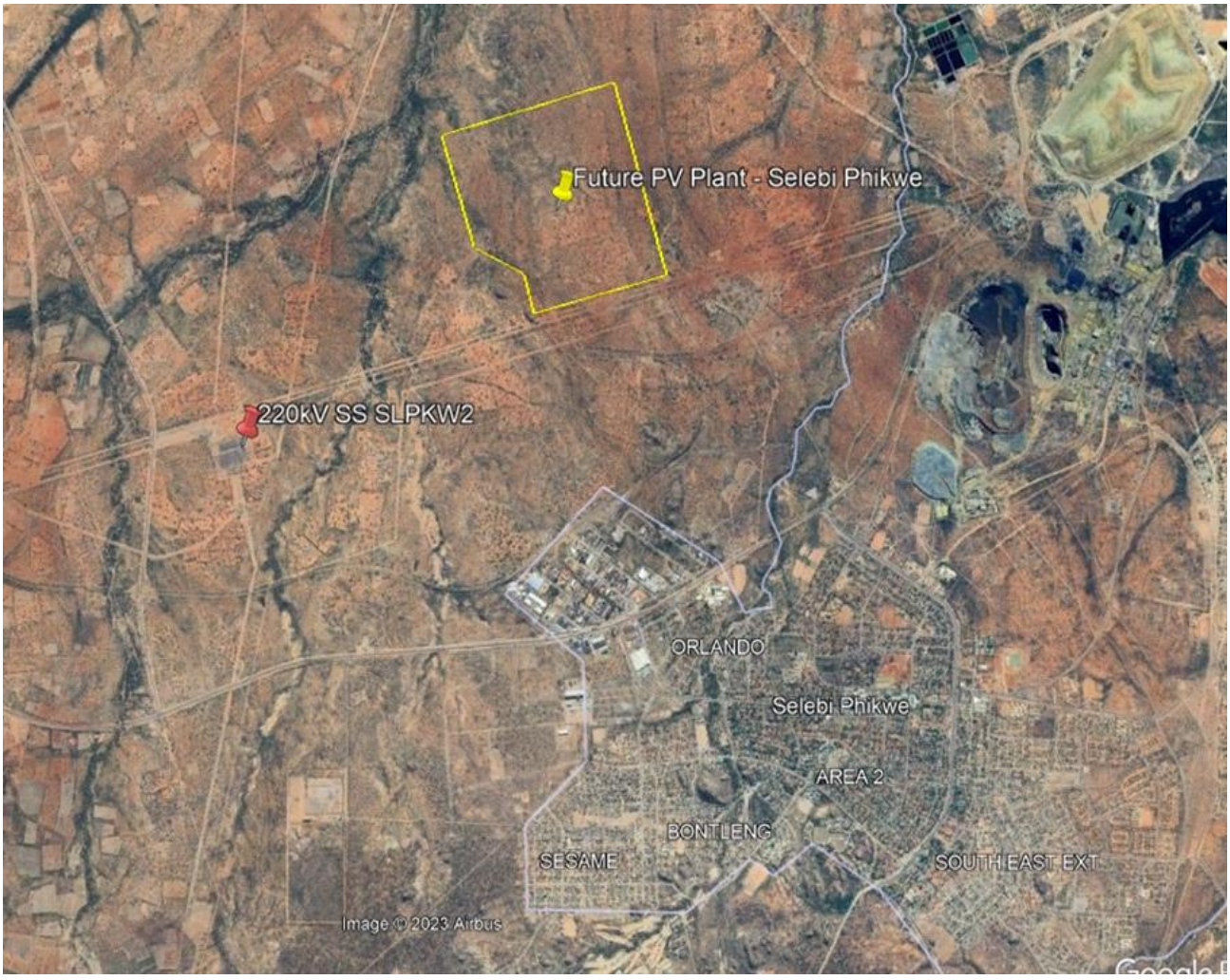


Figure 2-3. Approximate *location of the proposed Selebi Phikwe Solar PV farm in which the BESS installation will take place (final location of BESS and substations to be determined within the area defined for future PV)*

Subcomponent 1.2 consists of the installation of static synchronous compensator (STATCOM) at four substations: Francistown 1, Legothwane, Segoditshane 1 and Ramotswa (132 kV networks), with the aim of increasing their readiness for integration of VRE by ensuring steady voltage profiles. The proposed STATCOMs are expected to enable the automatic control of the voltage within the permissible range in both normal and contingency operating conditions as informed by the VRE integration study. *Subcomponent 1.3* consists of the upgrade of Supervisory Control and Data Acquisition System (SCADA) and mini-distribution control centres. The anticipated increased number of generation points and higher share of VRE will create more constraints on the system and an upgrade is recommended to balance demand and generation and to enable efficient dispatch. This subcomponent will also finance the implementation of mini-distribution control centres (MDCC) to manage the grid at 11 locations[1]. It will also support the procurement and implementation of a Meter Data Management System (MDMS) that is necessary for demand monitoring to ensure grid stability as penetration of VRE generation increases. It will also enable real time monitoring of loads for improvement of operational efficiency, maintenance and planning.

Component 2: Rural electrification (US$15 million of which IBRD loan US$ 15 million). Component 2 aims to increase reliability, enable increased access, and reduce the cost of electricity supply for existing and future customers in at least 23 villages in rural Borolong, supplying existing and future customers with domestic power and reducing the import of electricity from South Africa. The component will strengthen the transmission and distribution network in the Borolong rural area by extending the higher voltage grid infrastructure to the area, to increase reliability and enable future connections of both residential customers as well as small business and farmers in the region. The villages[2] targeted under the component are currently connected through 22KV and 33kv and stepped down to 11kv cross-border line from the South African utility (ESKOM), with points of supply in Pitshane Molopo and Mabule. These villages suffer from unreliable power supply from ESKOM which is prone to prolonged outages (in particular, due to load shedding in South Africa). To alleviate these shortages, BPC is currently expanding the national grid to absorb cross-border supplied customers, including those in Borolong (not financed by the World Bank). The expansion of the 33 kV infrastructure is ongoing while Component 2 will finance the following:

- Construction of a 160 km 66 kV transmission line from Lobatse to Mabule with two new 66/33 kV substations along the route, one at the end node in Mabule, and one in Pitsane-Molopo (Figure 21). In addition, the Lobatse substation will be upgraded with two new transformers to enable the step-down from 132 to 66 kV and transfer of higher voltage electricity to the area. This will enable the 9 cross-border villages that are currently suffering from daily load-shedding to be transferred from ESKOM to the domestic BPC network. Where possible, the permanent right of way for the 66 kV line is expected to be located within or partly within the road reserve of existing roads.

- Construction of a 46 km long 33 kV line from the proposed substation in Pitsane-Molopo to Hebron in the north-east. This will not only enable an additional 12 villages to be transferred to the 66/33kV substation in Pitsane-Molopo, but also close the 33 kV circuit from Lobatse, that, together with the Lobatse to Mabule 66 kV line, will increase the redundancy of the network, increasing reliability in that entire region. The right of way for this 33 kV line is also expected to be located within or partly within existing road reserves.

- A new ~2,6 km long distribution line from north-east of Pitsane Molopo to connect the cross-border villages of Marojane and Mokataka from Mokatoko to Molete which will increase the number of villages that will benefit from the 66kV line/substations.

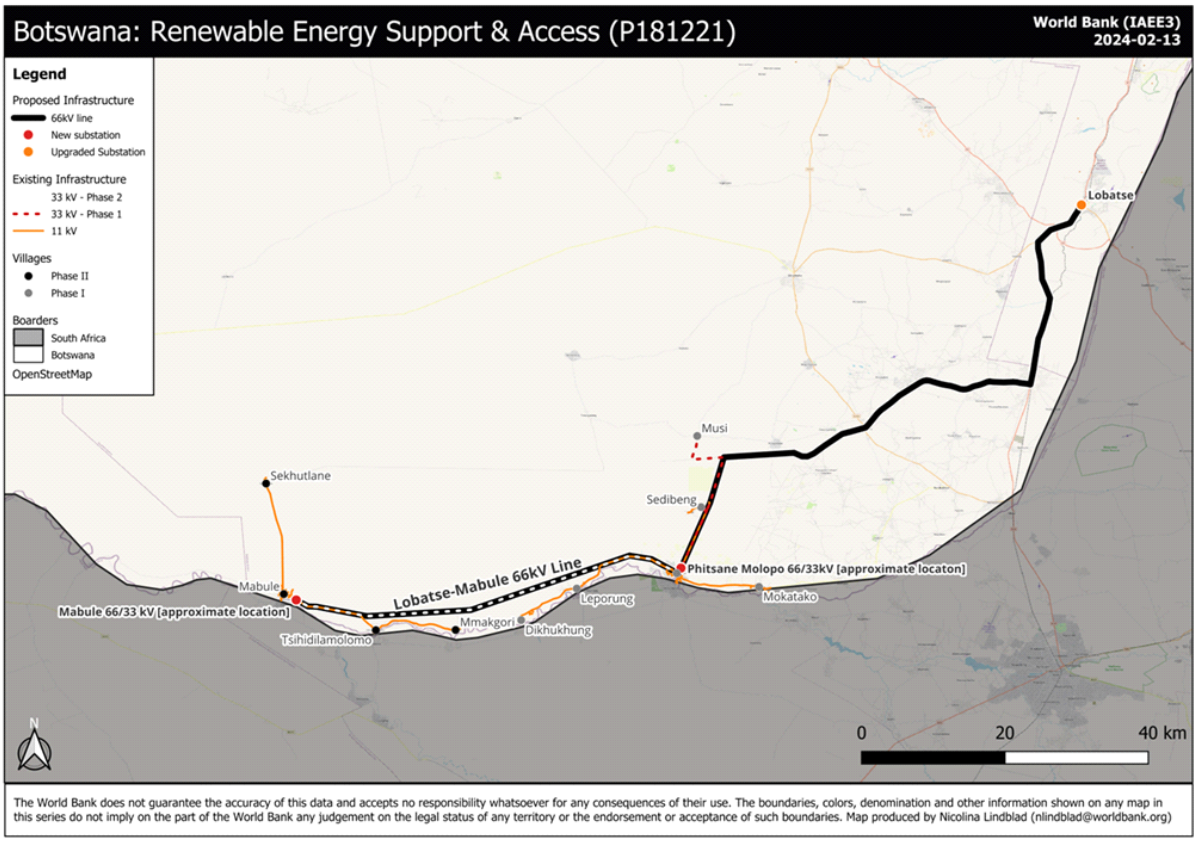


Figure 2-4 Approximate location of project transmission infrastructure – the proposed 66 kV transmission line corridor from Lobatse to Mabule and 33 kV transmission line corridor from Pitsane-Molopo to Hebron

The ***Table 2-1*** below provides an overview summary of the typical designs of a 66kV and 33kV line which will be further defined and associated impacts assessed during project implementation.

Table 2-1. Summary *of typical 66kV and 33kV line designs and construction requirements.*

Data	66 kV Line	33 kV Line
Design data		
Tower height	11 m	11m
Average span between	approx. 50m	Approx. 50m
Tower materials	Treated gum poles. (creosote)	
Guys	Two stay wire.	Two stay wires where there are strain poles
Foundations	(Pole holes 1.6-1.8m depth)	Pole hole 1.5m depth
Permanent right of way width	30 m	15 m
Permissible uses of permanent servitude	Grazing. No cultivation or built infrastructure permitted.	
Right of way bush clearance	Cleared of bush and trees. Right of way maintained to prevent trees from damaging conductors.	

Shared servitude with road reserves	Where possible. Final route alignment still to be determined.	
Access road	Permanent access track where the line deviates from the road reserve. Access of the existing roads for sections of route within or adjacent to existing road reserves.	
Construction data		
Construction period	15 – 18 months	6-8 months falling within the 66kv construction period
Transmission line length	Approx. 160 km	Approx. 46 km
Construction right of way width	30 m	15m
Labour contractual arrangements (contracted, direct, community)	C*ontracted (skilled):* workers who will be engaged to do specific tasks of the project. *Direct (semi-skilled):* workers who will be engaged on the long-term basis (project lifespan) and will be working on core tasks needed by the project. *Community (unskilled):* workers who will be engaged using community development committees of the villages alongside the project corridors. Tasks like removing shrubs and grass, cleaning and other tasks.	
Labour compliment (estimate)	Contracted (25) Direct (25) Community (50)	
Migrant workers	Not expected.	
Construction (worker) camps	Unlikely. Community labour will be recruited from local villages in consultation with the Village Development Committees. Villages include Borolong villages, Pitshane Molopo, Mokatako, Leporung, Dikhukhung, Sedibeng, Mabule, Sekhutlhane, Tshidilamolomo and Makgori. It is anticipated that the workers will commute from the villages.	
Lay down areas	To be determined by the main contractor. Typically, 1 ha, security fenced.	
Construction vehicles and equipment	Earth moving equipment (clearing, drilling, waste removal), low bed trucks for transport of poles.	
Transport of materials	By road, mainly from South Africa.	

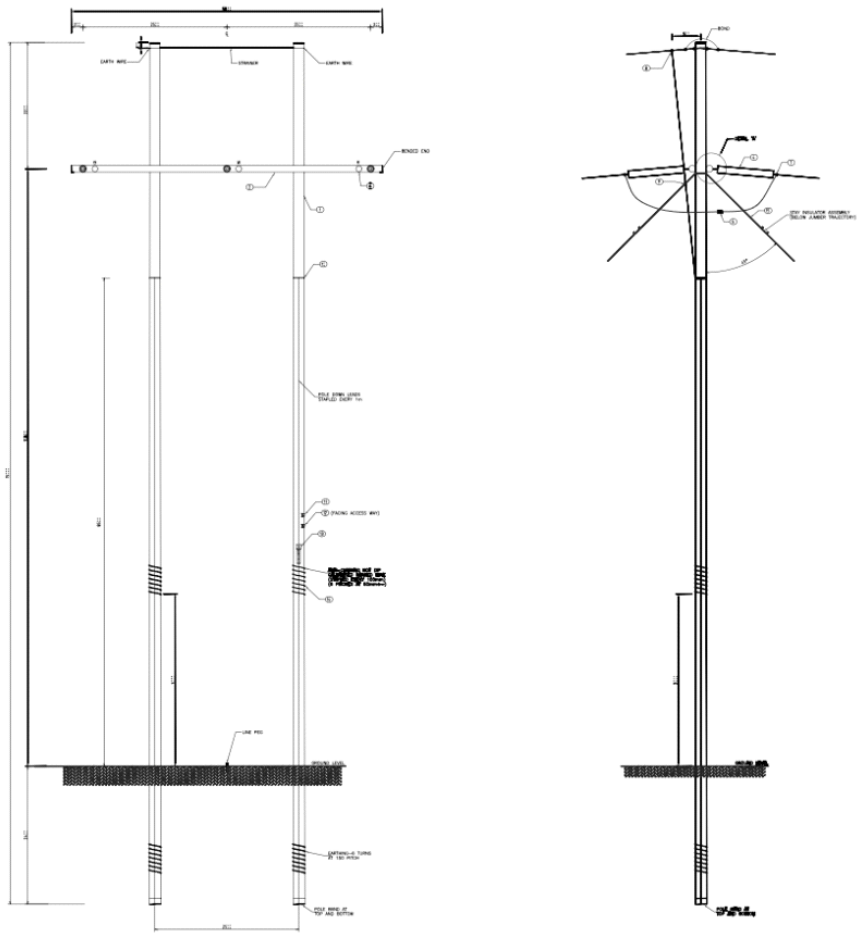


Figure 2-5. Typical *front and side elevations of the 66 kV transmission line towers consisting of wooden poles.*

Road reserve in Pitshane Molopo for routing of the 66 kV transmission line

Road reserve between Pitshane Molopo and Mabule for routing of the 66 kV transmission line

Typical design of a 33/11kV substation (100 x 100m)

Typical design of a 11kV line structure.

Figure 2-6 Photographic illustration of the typical structures and servitude

Component 3: Technical Assistance, Capacity Building and Project Management (GCF grant US$ 4 million)

Future investments in the energy sector are expected to be focused on RE and to be driven by the private sector. Component 3 is therefore expected to play a key role in enabling private sector investments and in supporting the utility in this business model transition. First of all, by supporting the utility to manage deployment of VRE (in complementarity with the aforementioned RETF grant) and second by helping the utility enhance the socio-economic benefits of their RE projects through a systematic approach. In addition, the upcoming Namibia & Botswana: Energy Sector PASA (P180383) will provide support to the utility on its evolving business model in the context of a broader sector dialogue regarding the adjustments needed in the power market to open up the sector to private generation and regional export. Component 3 will finance the following activities:

Subcomponent 1 – Project management: (US$ 0.5 million): to support the implementation of the project by BPC as the Project Implementation Unit (PIU); and

Subcomponent 2 – VRE deployment (US$ 3.5ml): to support VRE deployment from various perspectives, including (i) technical studies on the management of VRE (including RE-related planning and mapping of the IT systems and associated procedures to collect and manage data efficiently and remotely); (ii) review of the business model of the utility in the context of the opening up of private generation and regional trade opportunities (including review of the applicable RE guidelines and regulations), (iii) annual capacity building to empower the utility staff (including training on the management of VRE) and (iv) systematic framework to incorporate socio-economic aspects in the design and implementation of the utility projects (including a mapping of the jobs on the RE projects and the reskilling of coal workers as well as skills development strategy). Training and consulting activities (technical, environmental and social, fiduciary, and procurement) required for project implementation as the case may be will also be included to empower BPC technical staff and management.

3 Baseline Environment

3.1 Physical Environment

Topography in the study area is generally flat, interspersed with small hills, inselbergs and ridges. Soils are dominated by sandy-to-sandy loams. Climate is semi-arid with cool dry winters and warm wetter summer. The hot season lasts from September to March with an average daily high temperature of 28°C. In the cool season, from April to August, the average daily high temperature is 21°C. Temperatures generally do not drop below zero in winter. Rainfall is erratic and localized, falling in spells of high intensity. The mean annual rainfall for Selibe-Phikwe is 415mm / annum. In the south, in the vicinity of Lobatse, rainfall is higher and is around the national average of 475 mm/annum. More than 90% of rain tends to fall during the summer months of October to April (Department of Meteorological Services, 2012). Rainfall is the result of convectional instability in the form of short stormy periods of a few minutes to about several days. Winter months from May to September experience negligible rainfall (Loci Environmental, 2016). Winds are generally light, except in association with thunderstorms, where strong winds may occur for short periods. Drainage is generally limited with no seasonal or permanent streams recorded on either of the lease areas for the solar/BESS sites. Small seasonal streams occur along the route of the transmission line.

The Borolong area where the transmission line will be installed, has over the years been subjected to a number of land use changes, like heavy grazing by cattle and small stock owners in addition to accelerated land clearing around the Borolong farms. The changes in landscape and topography have become manifest as changes in the nature and type of vegetation cover occurring across the Kalahari region.

Borolong villages economy is dominated by farming (both arable and pastoral) – with farming being done at a commercial scale at the Barolong farms -which has over the years been a hive of agricultural activities (has earned itself the name "bread basket of Botswana" -and is the main source of livelihood in Borolong villages and people from other areas of Botswana -particularly as the major role it plays in the provision of food, income and employment for the rural people in the area.

Due to variation in climatic conditions, typical of the Kalahari semi desert and other factors like high evaporation rates, leaching, etc Barolong farm has over the years recorded a decline in the crop yield – which subsequently affected the production capacity of the farms.

According to the Department of Surveys and Mapping, most of the Borolong area falls within savanna biome, -with its associated bushveld vegetation. The remaining section of the area falls within Pitsane grassland biome -which comprises of a wide variety of grasses typical of arid areas. The Pitsane grassland is considered a key biodiversity area of particular importance to several bird species with an IUCN conservation status of Least Concern or near threatened.

3.2 Biological Environment

In the north of the study area, around Selebi Phikwe, the major vegetation grouping is hardveld. This comprises of a mixed system of savanna vegetation, shrub savanna, savanna, tree savanna and open tree savanna. Typical trees species include *Colophospermum mopane* and *Senegalia nigrescens*, *Combretum apiculatum* and *Vachellia tortilis* (Selibe-Phikwe Town Council, 2009). A total of 44 plant species were identified in the general area of the Selebi Phikwe BESS site, during a site survey that was conducted for the adjacent Selibe Phikwe solar plant, including 28 woody/tree species, 10 grass species and six herb species - none of which are protected, rare or endangered. The general area appears to be highly disturbed, with extensive patches of bare soil and a distinct lack of grass and forb species.

In the south, around Jwaneng, the vegetation ranges from grassland to tree savannah and is characterized by short trees and thorny shrubs. A total of 45 plant species were identified for the general area where the BESS will be located, during a site survey that was conducted for the adjacent Jwaneng solar plant, including 24 woody/tree species 15 grass species and six herbaceous species. Typical to the Acacia thornveld biome, the dominant species that occur in the area comprise of *Vachellia* and *Senegalia* species. Other species identified included *Searsia tenuinervis*, *Rhigozum brevispinosum*, *Bauhinia petersiana, Peltophorum africanum, Boscia albitrunca, Grewia flava,* and *Grewia flavenscens*. No protected, rare or endangered species were encountered within the project footprint. Only two species, *Grewia flava* and *Elephantorrhiza burkei* are endemic to Southern Africa, both these species were encountered over the course of the field visit. These species are both quite common throughout the region and not on the International Union for Conservation of Nature (IUCN) red data list (listed as "Least Concern").

The Jwaneng project area falls within the range distribution of 68 mammal species, 42 reptile species and 262 bird species. Of these, 16 bird species and 6 mammal species are currently listed as threatened in the

IUCN red list (**Table *3-1***). The proposed Jwaneng BESS and solar sites are located close to the Jwana Game Park, owned by the Debswana Diamond Company which operates the mine near Jwaneng. Originally, the park was a fenced mining lease area around the Jwaneng mine, populated by a limited number of hartebeest, wildebeest, springbok, ostrich and other smaller animals, but since then the range has expanded considerably to include species such as giraffe, zebra, warthog, baboon, cheetah, ostrich, leopard and caracal. As the park is fenced, large mammals are not expected to migrate to the project site, however small animals and birds may be attracted. Evidence of the presence of *Phacochoerus africanus* (common warthog) and *Xerus inauris* (ground squirrel) were confirmed from burrows within the Jwaneng BESS project area.

The Phikwe site is generally depauperate, and while the historical data indicates the possibility that the range of 6 mammal species intersect with the project area (**Table *3-1***), the actual number is much lower, with only two mammal species (Savannah hare and steenbuck) confirmed during field visits conducted for the adjacently located solar farm (not supported by the Bank) (Loci Environmental, 2023), neither of which are listed red data species.

No areas of conservation significance have been identified in proximity to the roads along which the 160 km 66 kV / 33kV transmission line are proposed. The Pitsane grassland is a key biodiversity area for several bird species, none of which are considered of any conservation concern.

Table 3-1. IUCN *Red List of Threatened Species whose historical range coincides with the project area (green = Phikwe area; yellow = Phikwe and Jwaneng area; blue = Jwaneng area, Borolong = orange).*

Species name	Common name	Taxonomic group	IUCN category	Population trend	Range
Aquila nipalensis	Steppe eagle	AVES	EN	Decreasing	Extant (non-breeding)
Aquila rapax	Tawny eagle	AVES	VU	Decreasing	Extant (resident)
Balearica regulorum	Grey crowned crane	AVES	EN	Decreasing	Extant (resident)
Bucorvus leadbeateri	Southern ground-hornbill	AVES	VU	Decreasing	Extant (resident)
Bugeranus carunculatus	Wattled crane	AVES	VU	Decreasing	Extant (resident)
Camaroptera fasciolata	Barred Wren-warbler	AVES	LC	Stable	Global
Certhilauda chuana	Short-clawed Lark	AVES	LC	Decreasing	Global

Circus macrourus	Pallid Harrier	AVES	NT	Decreasing	Global
Egretta vinaceigula	Slaty egret	AVES	VU	Decreasing	Possibly Extant (non-breeding)
Cercotrichas paena	Kalahari Scrub-robin	AVES	LC	Stable	Extant (resident)
Falco vespertinus	Red-footed falcon	AVES	VU	Decreasing	Extant (non-breeding)
Gyps africanus	White-backed vulture	AVES	CR	Decreasing	Extant (resident)
Gyps coprotheres	Cape vulture	AVES	VU	Decreasing	Extant (resident)
Lamprotornis australis	Burchell's Glossy-starling	AVES	LC	Unknown	Extant (resident)
Necrosyrtes monachus	Hooded vulture	AVES	CR	Decreasing	Possibly Extinct
Neophron percnopterus	Egyptian vulture	AVES	EN	Decreasing	Possibly Extinct
Philetairus socius	Sociable Weaver	AVES	LC	Stable	Extant (resident)
Pterocles burchelli	Burchell's Sandgrouse	AVES	LC	Stable	Extant (resident)
Polemaetus bellicosus	Martial eagle	AVES	EN	Decreasing	Extant (resident)
Sagittarius serpentarius	Secretarybird	AVES	EN	Decreasing	Extant (resident)
Terathopius ecaudatus	Bateleur	AVES	EN	Decreasing	Extant (resident)
Torgos tracheliotos	Lappet-faced Vulture	AVES	EN	Decreasing	Extant (resident)

Trigonoceps occipitalis	White-headed vulture	AVES	CR	Decreasing	Extinct
Acinonyx jubatus	Cheetah	MAMMALIA	VU	Decreasing	Possibly Extant (resident)
Diceros bicornis	Black rhino	MAMMALIA	CR	Increasing	Extant & Reintroduced (resident)
Diceros bicornis ssp. minor	South-eastern black Rhino	MAMMALIA	CR	Stable	Extant & Reintroduced (resident)
Felis nigripes	Black-footed cat	MAMMALIA	VU	Decreasing	Extant (resident)
Panthera pardus	Leopard	MAMMALIA	VU	Decreasing	Possibly Extinct
Smutsia temminckii	Temminck's pangolin	MAMMALIA	VU	Decreasing	Extant (resident)

3.3 Socio-Economic Environment

The social assessment that follows is derived from secondary sources, with more information/data that will inform project preparation to be collected during consultations will following during the preparation of Environmental and Social assessments.

3.3.1 Geographical Context of Botswana

Botswana is a landlocked country located at the center of Southern Africa, positioned between South Africa, Namibia, Zambia, and Zimbabwe. Botswana is dominated in geographical terms by the Kalahari Desert - a sand-filled basin averaging 1 100 m above sea level with the highest point at 1 490 m in the hills north of Lobatse in southeastern Botswana, and the lowest point at 660 m at the country's easternmost point, in the Limpopo valley. The country is divided into three main environmental regions. The hardveld region consists of rocky hill ranges and areas of shallow sand cover in eastern Botswana. The sandveld region is the area of deep Kalahari sand covering the rest of the country. The third region consists of ancient lake beds superimposed on the northern sandveld in the lowest part of the Kalahari Basin.

The country has since its independence gained international stature as a peaceful and increasingly prosperous democratic state and has become an Upper-middle-Income Country (UMIC) in 2004, with aspirations on becoming a high-income country.

3.3.2 Development Context

With its Human Development Index (HDI) value of 0,693, Botswana is classified as the medium human development category country (a country is considered to be having very high human development when

it is in the 0,8–1,0 tier, high human development 0,7–0,79, medium human development 0,55–0, 70, and low human development is below 0,55). Botswana's GNI per capita of US$6 940 also places the country at an upper-middle-income country. For fiscal 2023, upper-middle-income economies are defined as those with a GNI per capita of between US$4 256 and US$13 205, calculated using the World Bank Atlas method, high-income economies are those with a GNI per capita of US$13 205 or more. Basic services, such as electricity, water, and sanitation, were rolled out to a much larger share of the population. Coverage rates in electricity reached 72% while coverage rate of water reached 92% in 2020. The rapid economic growth after independence lifted many Batswana out of poverty and helped them achieve higher income levels. Data from the BOTSWANA Systematic Country Diagnostic UPDAT – AT A CROSSROADS Reigniting Efficient and Inclusive Growth, however, indicates that the share of the population still in poverty is still high for an upper-middle-income country like Botswana, placing Botswana as one of the highest rates of inequality in the world. According to the 2020 UNDP report, Botswana with a Gini coefficient (a standard measure of income or expenditure distribution) of 0,53, has the ninth highest Gini coefficient, indicating that Botswana has an unequal distribution of income.

3.4 Demography

The 2017 Botswana Demographic Survey (BDS) estimated a total population of 2 154 863, of which 1 034 578 are males and 1 120 285 females. Botswana is a large sparsely populated country with most people in urban villages at 43%, followed by rural villages with 36,1% and lastly cities and towns with 20,9%. This indicates that Botswana's population is predominantly urban, with 63,9% of its population residing in urban areas.

The BDS data also shows that there has been little or no shift in the population age structure, whereby there was little decrease from 12% to 11,65% in the age group 0–4 while age group 5–9 increased from 20% to 23%. The data further shows that the population of working ages declined while the over 65 population increased slightly from 5% to 5,4%. The population aged over 65 has been increasing slowly over past surveys. This means that, Botswana's age structure is shifting from young age structure to ageing age structure thereby diminishing the demographic dividend benefit.

The United Nations Development Programme Human Development Report, 2021–22 indicates that for Botswana, even though the Gender Inequality Index (GII) gradually improved over the years, it has decreased from 0,5 in 2011 to 0,47 by 2021. It further highlights that while progress has been made, there is still work to be done to achieve greater gender equality and empower women in various areas, including addressing gender-based violence, enhancing voice and leadership, promoting human capital development, and ensuring access to economic opportunities.

3.5 Social Issues

3.5.1 Labor Influx and Associated Social Impacts

The Rural Electrification Programme is effectively connecting Botswana's villages to the national grid. This programme recognizes the need to extend the electricity grid to all parts of the country in order to facilitate economic activities. Villages and settlements that are located far from the national grid will be powered using renewable energy decentralized off-grid systems since extending the network to these areas is not cost-effective for the government.

Implementation of activities under RESA Project may require external skilled and unskilled labor to project sites, thus resulting in labor influx into beneficiary communities. However, the PIU is recommended to use unskilled local labor in order to minimize labor influx because bringing in outside workers and establishing temporary labour camps could result in social risk to host communities especially on vulnerable groups (women and girls), including the potential for gender-based violence, sex trafficking, adolescent pregnancy and child abuse.

3.5.2 Gender Analysis And Related Issues

The development effectiveness of RESA project will be enhanced by addressing gender issues that are considered serious obstacles to inclusive and sustainable development. BPC will as a result explore feasible alternatives to enable the disadvantaged, especially women, to share in the benefits generated by this project.

Over the past 20 years gender equality and women's empowerment in Botswana has progressed with Botswana having made significant strides towards equal treatment of women under the law. Gender inequality has however, increased over time and remains a pressing policy concern. Gender gap in the energy sector is high with women constituting about 24 percent of the BPC workforce.

The Botswana National Energy Policy (NEP) indicates that it is estimated that 55% of Botswana households are headed by women with women playing a predominant role in the informal sector, mostly in subsistence agriculture. The agriculture sector is however said to be unstable and limits women's chances of economic empowerment and as a result most female-headed households are poor because they do not have access to or control over productive resources. The Government of Botswana is thus focusing on mainstreaming gender into its operations in order to realize gender equality and empowerment of women. Women and youth will particularly benefit from improved electricity services, critical for modern education, health and communications services, and facilitation of small income-generating activities that help families.

The Botswana NEP thus recognizes the different energy needs of adults and calls for the inclusion and consideration of these gender differences into energy strategies and programmes during formulation and implementation. Women in Botswana are one of the most important actors in the energy sector, and the government is thus focusing on mainstreaming gender into its operations in order to realize gender equality and empowerment of women. The government developed a policy on women and development in 1995 in order to align its national policies and legislation with regional and international obligations on gender equity and equality. Progress has been realized but, unfortunately, women in Botswana still have less access to, and control over, productive resources, including access to modern energy, than men. The NEP supports gender mainstreaming in the energy sector, and through it, the government intends promoting gender mainstreaming in the energy sector and ensuring alignment of gender concerns with appropriate health, safety and environmental standards through the efforts that include the following:

- Promoting use of modern forms of energy by women in households by facilitating development of programs for dissemination of modern energy technologies to replace the traditional energy uses in rural areas.
- Supporting the capacity development of women in the energy sector by supporting training and capacity building programs targeting women in rural communities.

- Ensuring participation of women in the formulation and implementation of energy interventions though facilitation of inclusive development of solar and other renewable forms of energy for off-grid communities.

Thus, mainstreaming gender equity and empowerment will be a focus area of the RESA project. For activities related to livelihoods restoration, the project will provide opportunities that address women's needs. During project preparation, gender analysis will be part of the social assessment and the analysis will be based on findings from gender specific queries during the primary and secondary data will be collected and analyzed to bring out sex disaggregated data and any issues related to gender disparity, needs, constraints, and priorities, as well as understanding whether there is a potential for gender-based inequitable risks, benefits and opportunities. Specific interventions will then be designed, and gender action plan will be prepared, if required, and the overall monitoring framework of the project will include sex disaggregated indicator and gender relevant indicator.

Capacity building activities under Component 3 will ensure meaningful engagement of women in various roles during the different stages of the project. As part of the project preparation, a gender gap analysis will be done for BPC to inform the designing of strategic, result oriented and context-based gender action plan to be developed in close consultation with BPC. Project level gender indicators will be included in the result framework to monitor the performance and achieved results of the gender action plan throughout the implementation process.

3.6 Gender-based Violence

The gender-based violence (GBV) risk for the project will be continusely assessed thoroughly during implementation of the project. At preparation stage, the screening suggests that GBV risks are moderate. One of the potential social risks related to the labour influx is GBV. It is however, anticipated that most of the project labor requirements will be fulfilled from local employment except skilled labor. Hence, the potential for influx of immigrant labor to the proposed project areas is expected to be relatively low. There may still be GBV risks associated with labor influx, though, related to interaction between project workers and local communities, and interventions will be tailored to project realities and in-country context. Measures to be undertaken in order to prevent and address the potential social risks related to the GBV include the following:

- Preventing and responding to gender-based violence during project implementation.
- Sensitizing and training Project Implementation Unit (PIU), implementing agencies and contractors against gender-based violence.
- Educating the communities on GBV issues.
- Increasing girls and young women's exposure to jobs in the renewable energy sector, vocational programmes, unconscious bias trainings, career choice guidance.
- Addressing child care service gaps.
- Institutionalizing GBV prevention and response mechanism.

- Establishing women's professional networks and access to upskilling and training/scholarship opportunities.
- Integrating of codes of conduct on child protection and gender-based violence in the bidding documents and in the contracts of all employees, contractors, and consultants engaged in the project and require them to implement measures to manage GBV risks at project level; such as:
    - assigning of a GBV specialist who will be responsible to manage the risks and that works in close contact with women and youth within the Project area;
    - putting in place administrative measures that prevent and minimize GBV and prevent Sexual Harassment in the workplace and acknowledging zero tolerance for GBV;
    - strengthening GRM and other monitoring mechanisms to ensure safe and ethical reporting systems to alert cases of GBV and assure them to access adequate response; and
    - ensuring that an area/site-specific assessment of GBV, sexual exploitation and abuse (SEA) and sexual harassment (SH) risks is undertaken within subsequent project ESAs and/or Environmental and Social Management Plans (ESMPs), and that prevention and response measures are put in place

4 Environmental and Social Policies, Regulations, and Laws

4.1 Botswana Legal Framework

The following sections lists Botswana's national policies, laws, and regulations that are relevant and directly applicable to the environmental and social risks and impacts of subproject activities. Only elements directly applicable to subproject activities are described.

Table 4-1. ***Botswana relevant legal framework***

Law	Description and relevance to project activities
Environmental Assessment Act (No. 10 of 2010) and associated Environmental Assessment Regulations (2012)	The Act provides for the preparation of Environmental Impact Assessments (EIA) to assess the potential effects of planned developmental activities; to determine and to provide mitigation measures; and to put in place a monitoring process for the evaluation of the environmental impacts of implemented activities. Only after the competent authority (Department of Environmental Affairs) has approved the Environmental Impact Statement can the project proceed. Detailed requirements for the preparation of environmental assessments are set out in the Environmental Assessment (EA) Regulations (2012) under the EA Act (2010). The EA regulations define the activities to be undertaken during each of the Environmental Assessment (EA) stages, as well as the information and format to be submitted to the Department of Environmental Affairs for review. An ESIA/ESMP is required for all transmission lines and substations under Botswana Environment Act (2010). The environmental and social assessment of project subcomponents 1.1 (BESS) and 2.1 (transmission and distribution lines / substations) will form part of the design engineers' scope of work and will be undertaken by a Botswana-registered Environmental Practitioner, consistent with the World Bank ESSs as per an agreed term of reference
Monuments and Relics Act (2001)	All developments in Botswana that are likely to change or disturb the land surface require the authorization of the Department of National Museum and Monuments, under the terms of the Monuments and Relics Act (2001), before such work can begin. This is usually granted after a pre-development impact study Archaeological Impact Assessment (AIA) has been conducted by an approved archaeologist to the satisfaction of the National Museum, the institution tasked with the responsibility of overseeing the Act. It may also be necessary to carry out mitigation work or have the development project modified before the permit is issued, depending upon the findings of the AIA. As required by this Act and the EA Act, 2010, the AIA must be carried out as part of the EA study, and a conditional planning consent letter obtained from the Museum.
Atmospheric Pollution Prevention Act (1971)	Atmospheric Pollution (prevention) Act of 1971 is specifically directed at pollution prevention and control. The Act also provides for the prevention of pollution of the atmosphere caused by industrial processes, and further provides for the appointment of pollution control officers as well as inspectors. The custodian of this Act is the Department of Waste Management and Pollution Control. It focuses on the adverse impacts of air pollution on the ambient environment and sets standards as the benchmark for air quality management performance. At the same time, it sets emission standards to regulate the control of noxious and offensive gases emitted by industrial processes, the control of smoke and wind-borne dust pollution, and emissions from diesel vehicles.
Factories Act (1979)	The Factories Act is one of the Acts primarily concerned with occupational health and safety in Botswana. The Act regulates conditions of safety, health and welfare of employees in factories, which are broadly defined to include outdoor spaces and other places. It also

	provides regulations for the safety and inspection of specified plant and machinery and for incidental purposes. The definition of "Factories" according to the Act is essentially all premises where people are employed in manual labour, including outdoor premises. Relevant topics under the Act include occupational hygiene, first aid, personal protection equipment (PPE), notification of accidents, dangerous occurrences and industrial disease, and requirements for cranes and other lifting machines and apparatus.
Public Health Act (Chapter 63:01)	This Act addresses the spread of diseases and provides a range of health measures including regulations on prevention, management and control of diseases as well as cleanliness and sanitation and the control of nuisance. Any public health risk caused by failure to manage waste or wastewater that is offensive or injurious is a contravention of the Act.
Waste Management Act (1998)	The Act establishes the Department of Sanitation and Waste Management (DSWM). Waste as defined by the Waste Management Act includes all 'controlled' waste, which consists of household, industrial, commercial, clinical or hazardous waste. While much of the Act deals with the responsibilities of local authorities for waste management, it also prohibits any person from transporting controlled waste without being registered and licensed as a waste carrier by the DSWM. It is therefore applicable to the removal of waste from industrial civil works construction sites and from the operational BESS sites.
Water Act (Chapter 65:03)	The Water Act provides for the protection of water resources from pollution and also addresses the ownership, protection and the rights to use "public water". The Act defines the ownership of rights to surface or groundwater and grants permission for the use of water resources through the Water Appointment Board (WAB) under the Department of Water Affairs. Water resources may not be polluted by any matter derived from an operation's activities. Under the Act, development proponents must first obtain water rights from the Water Apportionment Boards before use or discharge of any effluent into public water. It is an offence to pollute or foul any public water by either discharging any substance likely to pollute or by dumping any material in a place where water is likely to flow and carry the pollutants along. Such offences may incur penalties to be paid by the polluter.
Mines, Quarries Works and Machinery Act (1978)	In the unlikely event that borrow-pits will be needed. Any borrow pits opened for the purpose of providing fill or aggregate material must be licensed prior to use by the Department of Mines.
Employment Act (Chapter 47:01)	The Employment Act as amended addresses minimum conditions of employment for employees, whether citizen or expatriate, employed in the private and parastatal sectors. An expatriate employee must be in possession of a valid work permit. In relation to the proposed project, the proponent or the engaged contractor must ensure that expatriate workers are in possession of valid work permits before they can be engaged in construction activities. Furthermore, the contractor must ensure that conditions of employment for staff meet the minimum requirements of the Act.
Fire Service Act (1994)	The Fire Services in Botswana operate under the Fire Service Act of 1994. An authorised officer of a fire brigade shall, in the interests of fire prevention obtain and compile information, by inspection and otherwise, with regard to the character of buildings and other property in the area of the fire brigade, the available water supplies, the means of access to such buildings or property, and any other local circumstances. During construction, operation and decommissioning phases of a development, the proponent should engage the fire department of the local town council to source advice about issues related to fire prevention at the site.
Road Traffic (Amendment) Act (Act 1990 and 2001)	This Act provides for the regulation of traffic in the country to ensure road safety. Part VIII of the Act addresses driving and other offences relating to the use of vehicles on roads and their penalties. The Act also provides guidance pertaining to road traffic signs and speed limits.

	Drivers involved in the delivery of construction materials and hauling of spoils/waste on main roads are subject to the requirements of the Act, where this may result in road traffic obstruction and road-related accidents.
Tribal Land Act (Chapter 32:02)	Tribal land, which can be transferred through agreed mechanisms, and which is in part governed by traditional systems, is the most common form of land tenure in Botswana, followed by state land. Tribal land is used for agricultural purposes (with uses including arable farming, wetland farming, mixed farming, and grazing), commercial agriculture, industrial use, residential and community use.
State Land Act	An Act to define the state land of Botswana, to provide for its disposal and to provide for matters incidental to, or connected with, the foregoing matters. This Act concerns "State land", which means unalienated State land and reacquired State land
Electricity Supply Act (2007)	The Act provides for rules, regulations and responsibilities related to the supply of electricity. It specifies minimum requirements for electrical installations to adhere to, as well as licensing regulations. The electrical installations covered in the Act include standard low voltage systems, high voltage (overhead) lines and installations other than consumer installations (such as substations). The regulations include: • Technical requirements for materials, conductors, testing and overloading; • Safety requirements for fencing, maintenance, inspections and wind pressure; and • Fire precautions and clearance instructions. The Act is relevant for the design and safety aspects of the electrical infrastructure components of the Project and needs to be considered during all project phases.
BPC Act (1973)	An Act to provide for the establishment of a corporation to be known as Botswana Power Corporation for the generation and supply of electric power to end users.
The Wildlife Conservation and National Parks Act (Act 28 of 1992)	This Act serves to regulate fauna, their habitats and protected areas. It defines National Parks, Game Reserves and Sanctuaries, Game Management Areas, and Controlled Hunting Areas. It also provides a list of nationally protected species and ratifies the terms utilised by the Convention on International Trade of Endangered Species (CITES) to control the trade of animals and animal products. There is a possibility that the proposed Project could impact on individuals or communities of plant or animal species of conservation concern, and it is therefore of relevance.
Agricultural Resources Conservation Act (1974)	The Act provides for the protection of the physical environment, including slopes, protection of land against erosion, preservation of vegetation, siltation of dams and conservation of soil and its fertility. The project will need to make sure that the activities undertaken do not lead to environmental degradation through soil pollution, erosion, siltation of water ways and unnecessary damage to vegetation.
Town and Country Planning Act (1977)	The Act provides a legislative framework for the orderly and sustainable development of urban and rural areas in Botswana. The Act empowers local authorities to designate different zones for various land uses, such as residential, commercial, industrial, and recreational purposes. Zoning regulations help ensure compatibility between land uses and mitigate potential conflicts. It establishes procedures and criteria for reviewing and approving development proposals, including requirements for building permits, site plans, and environmental impact assessments. Development control aims to regulate the scale, design, and location of development to safeguard public health, safety, and welfare. It governs the subdivision of land into smaller parcels and sets standards for road access, utilities, and infrastructure provision. It seeks to promote orderly subdivision practices and prevent the fragmentation of land into uneconomical or unsustainable parcels. It further makes provisions to protect natural resources, conservation areas, and environmentally sensitive areas from inappropriate development. It may require environmental assessments and mitigation

	measures for proposed developments that could have significant environmental impacts and promotes public participation in the town planning process.

Table 4-2. Botswana relevant policies and standards

Policies and standards	Description and relevance to project activities
Botswana Waste Management Strategy	The Botswana Waste Management Strategy was formulated in 1998 by the Department of Waste Management and Pollution Control (DWMPC) to facilitate and coordinate waste management issues in the country as well as to consolidate the initial achievements in the waste management industry. It was also a response to implement the objectives of Agenda 21, which is the Action Programme from the 1992 Rio Earth Summit. The main objectives of the strategy are to: • Minimize and reduce waste in industry, commerce and private households. • Maximize environmentally sound waste reuse/recycling. • Promote environmentally sound waste collection, treatment and disposal. The strategy adopted the widely accepted waste management hierarchy as a basis for waste management. This strategy is relevant as the proposed development must adopt environmentally sound waste management disposal methods during the construction and operational phases.
National Air Quality Standards	The standards make provision for the setting and formulation of national ambient air quality standards for substances or mixtures of substances which present a threat to health, well-being or the environment. The standards prescribe the allowable ambient concentrations of pollutants which are not to be exceeded during a specified time period in a defined area. If the air quality standards are exceeded, the ambient air quality is poor and the potential for health effects is greatest. The standard has limited application for short term nuisance-related air quality issues typically associated with activities on civil works construction sites. Air quality issues for this Project will be more effectively managed through observation, good communication with affected communities and practical management measures using water sprayers and water carts.
National Policy on Resource Conservation and Development (1990)	The policy aims to promote conservation of natural resources including air, water, vegetation, wildlife, soils and archaeological features. The conservation goals of the Policy relevant to the project are: • The conservation of all main ecosystems, wildlife and cultural resources • The control of the depletion of exhaustible resources • The prevention and control of pollution. The policy provides a broad framework in support of resource conservation and good industrial practice and as such is applicable to all civil works construction. The custodian of this policy is the Ministry of Environment, Natural Resources Conservation and Tourism.
National Policy on HIV/AIDS (2012)	The principal objective of the National Policy on Human Immunodeficiency Virus (HIV) and acquired immunodeficiency syndrome (AIDS) is to prevent the spread of HIV infection and reduce the socio-economic impact of the disease. With regard to the project, there is bound to be interaction between construction workers and local females during construction works, which commonly results in transmission of sexual diseases due to unprotected sexual intercourse. The National Policy on HIV/AIDS should guide the development of HIV/AIDS prevention programs on site during construction and operational phases of the project. The custodian of this policy is the Ministry of Health and Wellness through the District Health Management Teams (DHMT).
The Second Botswana	The Second National Strategic Framework for HIV and AIDS, (NSF II) serves as a roadmap for the national response over the next seven years and makes an important contribution to the

National Strategic Framework for HIV and AIDS (2010-2016)	successful implementation of the 10th National Development Plan and ultimately Vision 2016. The purpose of NSF II is to outline national priorities for the national response to HIV and AIDS for the period 2010-2016. These priorities are based on evidence accumulated locally and are augmented by international best practices.
National Policy on Gender and Development (2015)	The National Policy on Gender and Development provides guidance, direction, coordination and facilitation on gender and development programming. It is anticipated that this will improve the implementation of Botswana's commitment to international obligations for the achievement of gender equality, objectives of the Millennium Development Goals (MDGs), Vision 2016 and National Development Plans. The approach employed by this policy highlights the national commitment to provide development and improved well-being to women, men, girls and boys on an equal and non-discriminatory basis. As required by the Policy, the Project proponent and the engaged contractor must ensure that opportunities generated by the project in terms of employment, entrepreneurship and corporate social responsibility initiatives benefit genders equally. The custodian of this policy is the Department of Gender Affairs.
BPC Safety, Health and Environment Risk (SHER) Policy (2023)	BPC's Safety Health and Environmental Risk (SHER) Policy emphasizes safety within the workplace, which includes all project phases of power supply, and is thus applicable to civil works construction contractors working on BPCs behalf and operating facilities. It requires: • That all employees are provided with a work environment that will protect, maintain and foster safety and health. • That each employee in accordance with their functions takes individual responsibility for doing whatever is necessary to achieve SHER compliance, adopted SHER performance standards and all applicable and relevant statutes.
Botswana National Energy Policy	The Botswana National Energy Policy highlights the existence of an energy framework and programmes to promote sustainable energy. Aspects of the policy with particular relevance for the project are improved access, security and reliability of energy supply to all sectors of the economy, particularly the low income and marginalized; and minimized energy related environmental, safety and health impacts.
Renewable Energy and Energy Efficiency Partnership (REEEP), 2014	The Renewable Energy and Energy Efficiency Partnership develops innovative, efficient financing mechanisms to strengthen markets for clean energy services in low- and middle-income countries, for the benefit of vulnerable populations.

Table 4-3. Botswana *Relevant Development Plans*

Development plans	Description and relevance to project activities
National Development Plan 11 (2016)	The Botswana National Development Plan 11 (NDP 11) places significant emphasis on renewable energy and energy access as crucial components of its development agenda. Within NDP 11, there is a strong commitment to promoting renewable energy sources such as solar, wind, and biomass to diversify the energy mix and reduce reliance on fossil fuels. The plan prioritizes increasing access to modern and sustainable energy services, particularly in rural and underserved areas, to improve livelihoods, spur economic growth, and enhance social development. NDP 11 includes initiatives to facilitate investment in renewable energy

	infrastructure, strengthen regulatory frameworks, and promote innovative solutions for expanding energy access. By focusing on renewable energy and energy access, Botswana aims to achieve its development goals while also addressing energy security, environmental sustainability, and the needs of its population, especially in remote communities.

Table 4-4. Relevant Conventions and Guidelines

International conventions and guidelines	Description and relevance to project activities
Basel Convention	The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal came into force in 1992 (Basel Convention Website: www.basel.int). The Convention has been ratified by 170 parties, including Botswana, and aims to protect human health and the environment against the adverse effects resulting from the generation, management, trans-boundary movements and disposal of hazardous and other wastes. The convention is relevant to this project as its operational activities may generate hazardous waste (oils from installed machinery, chemical containers, used batteries), which may have to be transported to other countries (such as South Africa) for safe disposal. The client will therefore be required to comply with the conditions of this convention during transportation of hazardous waste to neighbouring countries. All hazardous chemicals will be handled as per the instructions on the Material Safety Data Sheets (MSDSs) and the mitigation measures which will be outlined on the EIA report.
Kyoto Protocol	The United Nations Environment Programme (in the publication: The Kyoto Protocol, the Clean Development Mechanism, and the Building and Construction Sector, 2008) defines the Kyoto Protocol treaty as a legally binding agreement under which 37 industrialized countries will reduce their collective emissions of greenhouse gases by 5.2% compared to the year 1990 (but note that, compared to the emissions levels that would be expected by 2010 without the Protocol, this target represents a 29% cut). The goal is to lower overall emissions from six greenhouse gases - carbon dioxide, methane, nitrous oxide, Sulphur hexafluoride, hydrofluorocarbons (HFCs), and Perfluorochemicals (PFCs) - calculated as an average over the five-year period of 2008-12. Botswana has ratified the protocol and in its third National Communication to the United Nations (UN) Convention of Climate Change, which defined the low emission pathway for the country based on feasible and plausible mitigation projects, which include various on grid and off grid solar power stations. The present project is in support of this initiative, providing utility scale battery storage for the planned solar power stations at Selibe Phikwe and Jwaneng, and allowing storage of energy for use when most needed.
United Nations Framework Convention on Climate Change (UNFCCC)	The Convention entered into force in Botswana on 27th January 1994. The Convention sets an overall framework for intergovernmental efforts to tackle climate change. It recognises that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. The Convention enjoys near universal membership, with 192 countries having ratified including South Africa. Under the Convention, governments gather and share information on greenhouse gas emissions, national policies and best practice. Members also collaborate to launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries and cooperate in preparing for adaptation to the impacts of climate change. The project will support the objectives of the Convention by reducing GHG emissions.

4.2 National Environmental and Social Assessment and Permitting

4.2.1 Environmental and Social Impact Assessment

The Environmental Impact Assessment process is guided by the Environmental Assessment Act of 2010 and Environmental Assessment Regulations of 2012. The process consists of several steps as briefly set out below:

4.2.1.1 Screening

Project proponents together with the Department of Environmental Affairs (DEA) are required to screen proposed project activities against a list of activities contained in the EA Regulations, which are likely to have a significant adverse effect on the environment or locations which might be environmentally sensitive and as such would require an environmental assessment to be completed. If the proposed project activity triggers one of the requirements, the DEA will confirm the need and detail of an environmental assessment that will need to be prepared by the project proponent.

4.2.1.2 Project Brief

The project proponent will be required to prepare a Project Brief, in the prescribed format. As part of the preparation of the Project Brief, the proponent will be required to, a) publicize the proposed activities, its effects and benefits in the mass media for a period of at least 21 days and b) hold meetings with affected people and communities, prior to submitting the Project Brief to DEA for consideration.

Based on the DEA review a decision may be made for the project to proceed, if it the DEA is satisfied that there are no probable adverse impacts associated with the proposed project. Alternatively, it may require the proponent to prepare an Environmental Management Plan or a detailed Environmental Impact Assessment (EIA). In the latter case, the DEA will require the proponent to prepare and submit a Terms of Reference for the EIA.

4.2.1.3 EIA and Environmental Impact Statement (EIS)

The EIA and EIS are required to identify and evaluate the environmental impacts of activities with particular reference to:

- Health, safety or quality of life of people;
- Archaeological, aesthetic, cultural or sanitary conditions of the environment; and
- Configuration, quality and diversity of natural resources."

The EA Regulations include extra matters pertaining to sustainable development which need to be addressed in the statement. These include labour and working conditions (mitigation measures in the statement need to address this) and resettlement. Cross-cutting issues which are not explicitly required to be addressed include gender and climate change.

EIA and EIS reports are required to be sent out for public review within a stipulated timeframe. Public are invited to comment on the documents via notification by Government Gazette and specific newspapers.

4.2.1.4 Decision

After public review, the DEA is required to take into consideration the views and opinion of the public as part of its final decision to grant an environmental authorization for the project to proceed. The Act stipulates that the DEA has 60 days in which to review. After its review, the DEA may invite public comment. Once it is satisfied that the report is adequate and that the proposed mitigation measures will be 'effective and sufficient', it may grant an Environmental Authorization or reject the application.

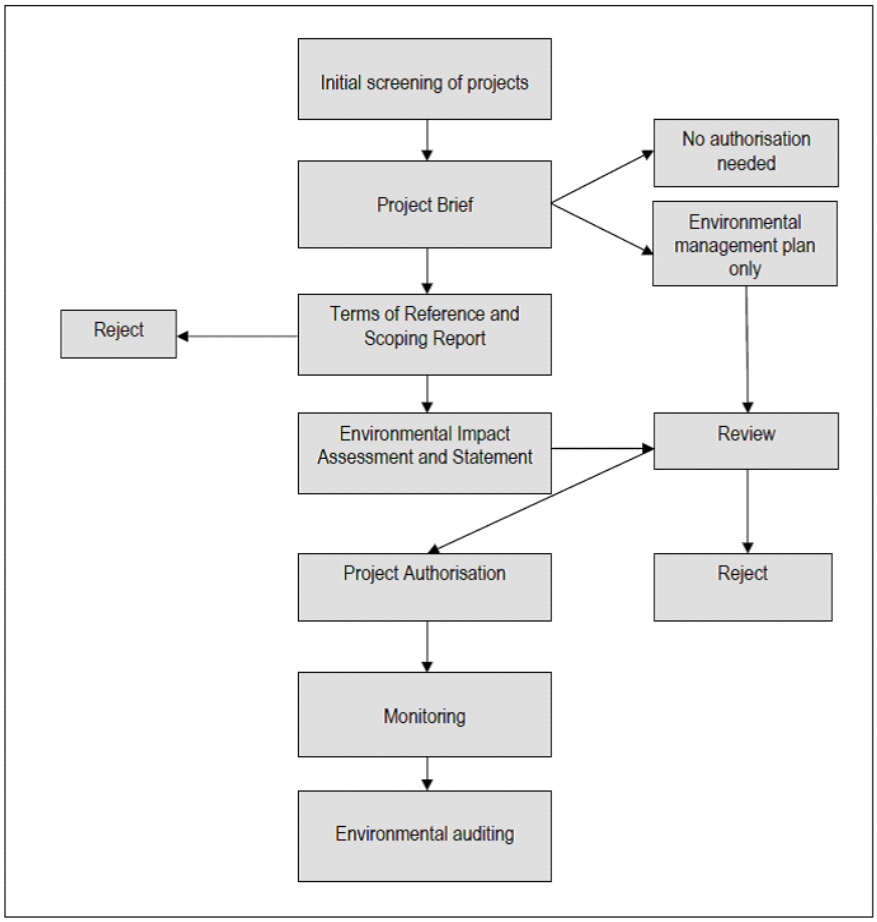


Figure 4-1. Botswana *Environmental Impact Assessment process.*

4.3 Permit Requirements

Table 4-5 describes permit requirements that are (or may be) necessary prior to project implementation.

Table 4-5. Permit/ License Requirements for the project.

Summary of legal requirements	Authority	Relevant legislation	By when
Environmental and Social Impact Assessment (ESIA) approval	Department of Environmental Affairs	EA Act (2020)	Before construction
AIA clearance	Department of National Museum and Monuments	Monuments and Relics Act (2001)	Before ESIA approval
Physical and/or economic displacement (Resettlement Action Plan (RAP) and RAP implementation)	Land Authorities (Land Board, Dept of Lands)	Tribal Land Act State Land Act	Before construction
Electricity generation license	Ministry of Mineral Resources, Green technology and Energy Security/ Botswana Energy Regulatory Authority (BERA)	Electricity Supply (Amendment) Act 2007 - BERA	Before construction
Connection to BPC infrastructure	Botswana Power Corporation	Botswana Power Corporation Act	Before construction
Planning permission for all permanent structures	Bobirwa District Council – Physical Planning Unit Jwaneng District Council	Town and Country Planning Act (1977)	Before construction
Land Lease	Mmadinare Sub Land Board Ministry of Land Management, Water & Sanitation Services	Tribal Land Act (1968) State Land Act	Before construction Before Construction
Permission to locate transmission lines within existing road servitudes	Department of Roads	Road Traffic Act (1981)	Before construction
Working conditions	Department of Labour and Social Security	Factories Act (1979)	Before Project construction start

Work permits and residence permits	Department of Labour	Employment Act (2001) Immigration Act (2011)	As and when needed
Water borehole registration	Department of Water Affairs	Boreholes Act (1956)	When drilling boreholes for the project – if required
Water rights	Department of Water Affairs	Water Act (1968)	Before project construction start– if required
Connection to existing water supply	Water Utilities Corporation	Water Act (1968)	Before project construction start– if required
Borrow pit permits	Department of Mines	Mines, Quarries Works and Machinery Act (1978)	Before start of excavations – if required

4.4 World Bank Standards and Key Gaps in the National Framework

4.4.1 World Bank Environmental Standards

The World Bank Environmental and Social Framework (ESF) set out the requirements for Borrowers relating to the identification, assessment and management of environmental and social risks and impacts associated with projects supported by the Bank through Investment Project Financing (IPF). The World Bank Environmental and Social Framework (WB ESF) consists of 10 Environmental and Social Standards (ESSs) which the borrower and project will be required to meet throughout the lifecycle of the project:

- ESS 1. Assessment and Management of Environmental and Social Risks and Impacts
- ESS 2. Labor and Working Conditions
- ESS 3. Resource Efficiency and Pollution Prevention and Management
- ESS 4. Community Health and Safety
- ESS 5. Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- ESS 6. Biodiversity Conservation and Sustainable Management of Living Natural Resources
- ESS 7. Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities
- ESS 8. Cultural Heritage
- ESS 9. Financial Intermediaries
- ESS 10. Stakeholder Engagement and Information Disclosure.

Eight of the ten ESSs of the WB ESF have been screened as relevant. The Project is not expected to impact natural habitats or cultural sites. Beyond this immediate concern, project implementation needs also to be responsive to the needs of marginalized and vulnerable social groups who may be unable to access facilities and services designed to combat the disease.

ESS1 Assessment and Management of Environmental and Social Risks and Impacts

Relevant

Physical activities may have an adverse impact on community and worker health and safety, generation of waste, dust emissions, soil pollution, removal of vegetation during construction, generation of hazardous battery waste and fires during operations which need to be assessed. The subproject activities will be screened using the screening checklist in Annexure 1 of this ESMF to guide the preparation of environmental and social assessments and/or site-specific ESMPs. The Environmental and Social Assessments (ESAs) and ESMPs to be prepared as part of the outcome of the screening activities will contain mitigation measures related to labour management and occupational health and safety, pollution and waste management, community health and safety, biodiversity and habitat loss and Chance Find Procedure for cultural heritage. TA studies will incorporate ESF aspects. Component 1 is unlikely to require a site-specific RAP since the land for BESS infrastructure is owned by BPC and is free of any settlement and community use. Component 2 may require a site-specific mini-RAP in areas where the transmission line servitude requires economic displacement. It is unlikely that any physical displacement will be required, to be confirmed by the detailed EA studies.

ESS2 Labour and Working Conditions

Relevant

The project will engage community (unskilled), direct (semi-skilled) and contracted (skilled) workers. The project will adhere to Botswana's Labour Laws and the Bank's ESS2 requirements. Construction workers will be contracted for the anticipated civil works under Components 1 and 2, and trained technicians for the installation and maintenance of battery storage systems and STATCOM. The total number of workers is uncertain at this stage, but the project is not expected to involve the construction of labour camps. Unskilled workers are expected to be drawn from local communities and will commute to site. Due to the nature of the project, it is likely that there will be Occupational health and Safety (OHS) risks which will need to be assessed and considered as part of the preparation of the ESAs and/or site specific ESMPs. BPC has prepared Labor Management Procedures that are included as part of this ESMF.

ESS3 Resource Efficiency and Pollution Prevention and Management

Relevant

Under Components 1 and 2, the project may cause soil erosion and water pollution due to vegetation clearance during construction, and generation of non-hazardous and hazardous waste during construction, operations and end-of-life (batteries), which will cause soil and water pollution if not adequately managed. Environmental hazards related to the disposal of used batteries containing hazardous waste will be mitigated via risk management measures that will include product specifications and "cradle to grave" provisions in the contracts of supplier for batteries used in the BESS in accordance with International best practice. The installation of equipment at substations containing polychlorinated biphenyls (PCBs) should be avoided. The ESA and ESMPs should include guidelines for assessing and managing existing equipment that still uses PCBs at the substations, if any. Project activities are unlikely to require significant amount of raw materials or use of local natural resources. The borrower will need to prepare and adopt specific waste and pollution management plans in line with WBG Environmental, Health and Safety (EHS) General guidelines as part of the ESAs and/or site-specific ESMPs for construction

and operation. A Waste Electrical and Electronic Equipment Management Plan (WEEEP) will be required for the operations phase of the BESS installations.

ESS4 Community Health and Safety

Relevant

Civil works may result in the presence of workers not locally resident and/ or influx of opportunistic migrants. This has the potential to cause impacts on community health and safety. In the absence of appropriate mitigation measures, gender-based violence (GBV), sexual exploitation and abuse (SEA), and the spread of sexually transmitted and communicable diseases may occur or be exacerbated by the presence of a construction workforce. The project will therefore require a risk assessment and a plan for GBV/SEA and measures incorporated into ESMPs to be prepared prior to the commencement of the works.

ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

Relevant

The scope of potential application of this standard, as well as potential need for preparation of site-specific RAPs, will be assessed further during preparation of EA instruments. For the 2 x 25 MW BESS installations constructed under Component 1, land adjacent to the planned solar farms will be used at Phikwe and Jwaneng. Details are still to be confirmed but the approximate site area, per BESS installation, will be around 5 ha. BPC has a lease agreement for the solar site and is in the process of acquiring rights for the site. Current land use does not include any settlement but there may be some community grazing and use for ecosystem services which must be confirmed in the ESA and for which a Resettlement Action Plan (RAP) may be required.

In Component 2, Borolong villages will be connected to the national grid via a 66kV transmission line (160km) from Lobatse substation to Mabule substation. BPC's conceptual route planning indicates an alignment which shares the servitudes of existing main roads, which are typically 60 m wide. The route is mainly through rural areas, but will also pass through urban communities in Lobatse, and Borolong villages along the line route. The viability of the route has not been confirmed yet, since there may be other services in the road reserves and the Department of Roads prefers that services in their road reserves are routed along the perimeter to minimize impact on future road expansion. It therefore appears likely that the permanent right of way of the transmission lines will extend beyond the boundaries of existing road servitudes in places and that in some circumstances, deviation from the road servitudes entirely may be necessary. Both economic and physical displacement may result. Detailed assessment of alternatives will be required in the ESIA, based on options defined in the preliminary design studies and a RAP must be prepared and implemented, prior to commencement of any works for the project in accordance with ESS 5 provisions, and as to be specified in the ESCP.

Component 2 will also include installation of two new transformers at the existing Lobatse substation, within the current site boundaries, and construction of a new substation at Mabule. The exact location of the Mabule substation is still to be finalized, to be assessed in the ESIA. Should land acquisition and/or resettlement be required, the project RAP must include these components as well.

Overall, the social risks deriving from proposed project activities could have been rated as Moderate. However, given that the exact alignment of transmission line will only be finalized during implementation,

the suggested risk rating is Substantial. These risks will be addressed through preparation and implementation of site-specific RAPs prior to commencement of civil works, as required under ESCP.

ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

Relevant

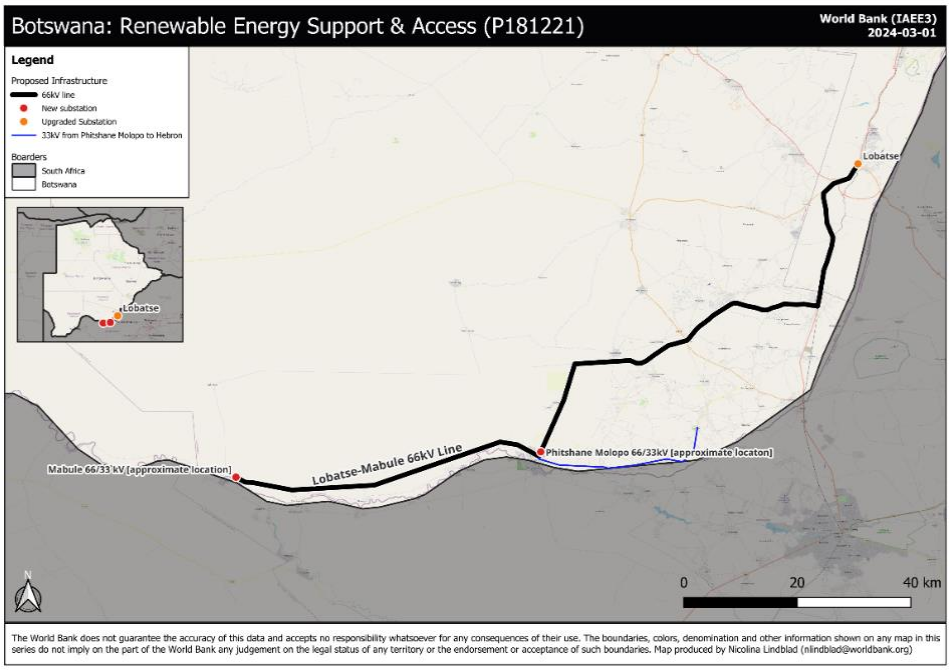
Civil works associated with BESS, the upgraded and new substations and the 66 kV transmission and 33kV distribution lines will require clearing of vegetation and minor earthworks and excavations, which will impact on vegetation and soil within the immediate construction footprint. While habitat loss will be permanent, impacts will be localized, and the transmission line will be routed mainly within disturbed areas along the edge of existing road reserves. ESIAs undertaken for the proposed solar farms at Jwaneng and Phikwe, the lease area for which includes provision for the BESS installations, indicates generally low biodiversity risk. For the transmission lines and substations, there has been no detailed biodiversity assessment to date. A preliminary review of the conceptual alignment indicates no areas of potentially critical habitat, and no conservation-sensitive localities within the area of influence of the lines. This is to be verified by the ESAs and site-specific ESMPs to be prepared under the project. No impacts on community access to ecosystem services are anticipated.

ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

Not relevant

The standard is not considered relevant. There are a few groups in Botswana that self-identify as indigenous - these include the San (known in Botswana as the Basarwa), the Balala, and the Nama. Screening has verified that there are no indigenous people/ sub-Saharan African / historically underserved traditional local communities in the project's direct or indirect area of influence who have a collective attachment to any of the potential selected sites. No groups that fulfill that requirement of ESS 7 have been identified in the project areas as seen in the map below.

Figure 1. Map of Borolong rural electrification



ESS8 Cultural Heritage

Relevant

The ESIA prepared for the Phikwe and Jwaneng solar farms (Loci, 2023; 2023a) included archaeological and cultural specialist assessment. No archaeological remains were found at either site. Seven sites of cultural significance were found within the proposed Phikwe solar farm plot area comprising abandoned settlements and cattle posts. Due to the possible occurrence of unidentified infant burials under the house foundations and unidentified burials in the kraals, Loci recommended that a watching brief and monitoring program be implemented during development at these sites. This would apply equally to the BESS installations, which would include 'chance find' procedures to be included in the ESMP and implemented during the construction phase of the project.

For the transmission lines, no archaeological or cultural surveys have been undertaken yet since the routes remain conceptual. Where the right of way for the routes falls outside of existing road servitudes, following completion of the preliminary design, specialist assessment of archaeological and cultural heritage will be required under the ESIA, in accordance with the requirements of the BNMM and ESS8.

ESS9 Financial Intermediaries

Not Relevant

ESS10 Stakeholder Engagement and Information Disclosure

Relevant

The main stakeholders for this project various agencies in energy sector in Botswana, local governments at the respective localities, vulnerable and disadvantaged groups and their representatives, community

leaders and representatives, and civil society organizations (CSOs). Given that the proposed distribution line will go through rural areas consistent engagement with local communities may be a challenge during implementation. The project will require inputs from different stakeholders, including those who will be directly affected as well as those who have other interests in the project interventions. Initial consultations and engagement with Project Affected Stakeholders, other stakeholders who have interest in the proposed project, and the and members of the public has previously occurred within the communities in the project areas engaged by the BPC in collaboration with local authorities, all before the Bank's anticipated financing. Consultations were conducted again in May 2024, prior to Appraisal, and the summary of them is provided in the SEP and this ESMF. Consultations that were undertaken were with the general public, and as well as the directly affected communities and individuals. Several methods of engagement that include telephone calls, notices, formal meetings, organised public consultations at kgotla, and meetings/presentation to district officials were used to consult with these stakeholders. SEP has been prepared by BPC, and disclosed prior to Appraisal.

4.5 Key gaps with national legislative requirements

Table *4-6* below provides a comparative analysis between the national legal requirements and the WB ESS requirements.

Table 4-6. Key gaps and gap filling measures

World Bank Environmental and Social Standard	Key gaps and gap filling measures
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts To identify, evaluate and manage the environment and social risks and impacts of the project in a manner consistent with the ESSs. To adopt a mitigation hierarchy approach to: (a) Anticipate and avoid risks and impacts; (b) Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; (c) Once risks and impacts have been minimized or reduced, mitigate; and (d) Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible. To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project. To utilize national environmental and social institutions, systems, laws, regulations and procedures in the assessment, development and implementation of projects, whenever appropriate. To promote improved environmental and social performance, in ways which recognize and enhance Borrower capacity.	The EIA regulations (2012) set out the types of projects for which EIA would be required. The regulations do not require offsetting of significant residual impacts. The EIA regulations do not adequately incorporate social aspects. The ESSs will be followed for preparing ESIAs and ESMPs.
ESS 2: Labor and Working Conditions To promote safety and health at work. To promote the fair treatment, non-discrimination and equal opportunity of project workers.	Occupational health and safety aspects a scattered in various pieces of legislation. The OHS requirements largely focus on factories and mining operations, however, are adopted in

To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate. To prevent the use of all forms of forced labor and child labor. To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law. To provide project workers with accessible means to raise workplace concerns.	construction projects. There are no specific regulations or specifications for OHS for construction projects. The ESS2 requirements will apply. BPC/PIU will be required to strengthen and elaborate on its OHS procedures for identifying and mitigating OHS risks and impacts on projects were as the contractors will be required to prepare an OHS plan prior to construction. A labor management plan has been prepared for the project.
ESS 3: Resource Efficiency and Pollution Prevention and Management To promote the sustainable use of resources, including energy, water and raw materials. To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities. To avoid or minimize project-related emissions of short and long-lived climate pollutants. To avoid or minimize generation of hazardous and non-hazardous waste. To minimize and manage the risks and impacts associated with pesticide use.	Botswana lacks robust regulations regarding handling and disposal of hazardous materials. Disposal of used batteries containing hazardous waste will be mitigated via risk management measures that will include product specifications and "cradle to grave" provisions in the contracts of supplier for batteries used in the BESS in accordance with International best practice. Furthermore, BPC will be required to prepare a Waste Electrical and Electronic Equipment Management Plan" (WEEEP) as part of the ESIA/ESMP for the BESS.
ESS 4: Community Health and Safety To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and nonroutine circumstances. To promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams. To avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials. To have in place effective measures to address emergency events. To ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.	There are no specific laws considering community health and safety aspects in projects. Therefore, the requirements of the ESS4 will be followed.
ESS 5: Land Acquisition, Restrictions on Land use and Involuntary Resettlement	

To avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives. To avoid forced eviction. To mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement cost and (b) assisting displaced persons in their efforts to improve, or at least restore, their livelihoods and living standards, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. To improve living conditions of poor or vulnerable persons who are physically displaced, through provision of adequate housing, access to services and facilities, and security of tenure. To conceive and execute resettlement activities as sustainable development programs, providing sufficient investment resources to enable displaced persons to benefit directly from the project, as the nature of the project may warrant. To ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected.	Compensation in terms of land related regulations and policies will be made to affected persons.
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources To protect and conserve biodiversity and habitats. To apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity. To promote the sustainable management of living natural resources. To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.	The EIA regulation requires assessment of project impacts on potential biodiversity sensitive areas. There are no clear guidelines on the need for offsets or protection of ecosystem-based livelihoods. The requirements of ESS6 will therefore be adopted if screened to be applicable for this project.
ESS 8: Cultural Heritage To protect cultural heritage from the adverse impacts of project activities and support its preservation. To address cultural heritage as an integral aspect of sustainable development. To promote meaningful consultation with stakeholders regarding cultural heritage. To promote the equitable sharing of benefits from the use of cultural heritage.	A chance finds procedure has been developed as part of this ESMF.
ESS 10: Stakeholder Engagement and Information Disclosure To establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties.	Ongoing engagements will be done through tribal administration and any other relevant organizations (Council, DC and Ministry of Youth Sports

To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance. To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them. To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format. To provide project-affected parties with accessible and inclusive means to raise issues and grievances and allow Borrowers to respond to and manage such grievances.	and Culture) as stipulated in the SEP.

4.6 World Bank Group Environment, Health and Safety (EHS) Guidelines

The World Bank EHS Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice. They are designed to assist managers and decision makers with relevant industry background and technical information. This information supports actions aimed at avoiding, minimizing, and controlling EHS impacts during the construction, operation, and decommissioning phase of a project or facility.

The EHS Guidelines serve as a technical reference source to support the implementation of the World Bank Environmental and Social Standards, particularly in those aspects related to the occupational health and safety aspects contained in ESS 2 – Labour and working conditions, ESS 3 Resource Efficiency and Pollution Prevention and Management, as well as ESS4: Community Health and Safety.

Where host country regulations differ from the levels and measures presented in the EHS Guidelines, projects seeking international funding may be expected to achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, a full and detailed justification for any proposed alternatives is required.

The following WBG EHS Guidelines are considered applicable to the project:

General EHS Guidelines – this includes a section on a range of environmental, occupational health and safety, community health and safety, and construction activities that would apply to the project. The guideline also contains recommended guidelines adopted form the World Health Organization (WHO) for ambient air and water quality, which are referred to in the relevant impact assessment sections in the EIA report.

Electric Power Transmission and Distribution (2007) - information relevant to power transmission between a generation facility and a substation located within an electricity grid, in addition to power distribution from a substation to consumers located in residential, commercial, and industrial areas.

5 Potential Environmental and Social Risks and Standard Mitigation Measures

5.1 Environmental and Social Risks

5.1.1 Defining Risks and Impacts

Environmental and social risk can be defined as a combination of the probability of certain hazard occurrences and the severity of impacts resulting from such an occurrence (World Bank, 2016). Environmental and social impacts can be defined as any (positive or negative) change, potential or actual, to (i) the physical, natural, or cultural environment, and (ii) impacts on surrounding community and workers, resulting from the business activity to be supported (World Bank, 2016). Examples could include (i) loss of natural habitat due to land clearing to enable construction of the BESS and transmission line, or (ii) new employment opportunities due to the development and operation of a new facility.

In this ESMF, environmental and social risks are defined in the following categories, in accordance with the World Bank (2016) guidance: *High, Substantial, Moderate and Low.* A risk rating guide is provided in Annexure 1.

5.2 Environmental and Social Risk Classification

5.2.1 Risk Rating Overview

The overall environmental and social risk rating for the project is considered *Substantial* and will be further assessed as information on the proposed route alignment of the Transmission line and distribution network and BESS becomes available during project implementation.

5.2.2 Environmental Risk Rating

The moderate to small scale civil works supported under Components 1 and 2 may lead to potential adverse impacts related to: (i) removal of vegetation, (ii) soil and water contamination due to disposal and management of general and hazardous waste during the construction and end-of life batteries disposal, (ii) occupational health and safety of workers, (iv) nuisances related to dust and noise emissions, and (v) community health and safety. The installation of BESS is expected to take place on land under the control of BPC, while upgrading of substations, SCADA, STATCOM and MDCC will take place within existing facilities. The route alignments of the 66 kV transmission line from Lobatse to Mabule (160 km) and the 33 kV line from Pitsane-Molopo to Hebron (46 km) are not yet finalized, and while they are planned within existing road reserves, it is likely that a part of their permanent rights of way will extend beyond the boundary of the road reserve, and depart from existing roads altogether in some areas where there is service congestion - to verified by BPC in the engineering studies and preparation of the detailed EA instruments. Component 3 supports TA and capacity building and is considered to have limited to no downstream environmental impacts.

5.2.3 Social Risk Rating

Potentially adverse social impacts may primarily occur in connection with the physical works under proposed Components 1 and 2, and may be related to: (i) potential small to medium scale land acquisition and land easement arrangements (to be assessed further and confirmed during EA instrument preparation); (ii) social aspects of environmental impacts related to construction-related activities, including community health and safety risks; (iii) temporary labour influx needed for construction

activities, and associated GBV/SEA/SH risks; and (iv) risk of potential exclusion of stakeholders, which creates the need for robust stakeholder engagement, and outreach to stakeholder and beneficiaries (including any vulnerable and/or disadvantaged groups);, as well as (iv) institutional coordination risks, which involve in particular the need for strengthening and coordination of grievance redress mechanisms between BPC and MME.

5.2.4 Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) Risk Rating

GBV/SEA/SH risk factors include potential labour influx, inadequate provision of water and sanitation facilities for women, lack of access to services including psychosocial, health and GRM, in rural/remote areas where rural electrification activities will take place. To effectively address project induced SEA/SH risks and impacts, the project will prepare a GBV prevention actions plans as part of site-specific ESMPs. The Action Plan will contain details of proportional risk mitigation measures that will be put in place to prevent and respond to project related SEA/SH. This may include, establishing a SEA/SH responsive GRM, signing codes of conduct by project and contractors' workers and other strategies, as well as establishing a response and accountability procedures for managing related grievances and supporting survivors.

5.3 Preliminary Assessment of Specific Risks and Management /Mitigation Measures

Table *5-1* summarizes the potential project risks and high-level generic management/mitigation measures to address them. Risks are rated in accordance with the World Bank rating scale, as high, substantial, moderate or low.

Table 5-1. Environmental *and social risks and mitigation /management measures for Components 1 & 2.*

Key	Adverse Risk (A)		Beneficial Risk (B)	
	High	A/H	High	B/H
	Substantial	A/S	Substantial	B/S
	Moderate	A/M	Moderate	B/M
	Low	A/L	Low	B/L

N/A Not applicable

Nature of Risk	Description and Possible Causes of Risks and Impacts	Risk Rating (pre – mitigation/enhancement		Potential High Level Mitigation/ Management Measures	Risk Rating (post – mitigation / enhancement)	
		BESS	TML & S/Stations		BESS	TML & S/Stations
CONSTRUCTION PHASE						
LAND USE, LAND CAPABILITY, SOILS AND AGRICULTURE						
Physical and economic displacement	• Land acquisition for project infrastructure and rights of way. Possible requirements for easements along the transmission line right of way. • Community use of BESS sites for grazing and ecosystem services presently unknown.	A/S	A/S	• Consultation with Project Affected Persons (PAPs) • Carrying out analysis of alternatives to avoid/minimize involuntary taking of land and other physical assets • Compensation prior to start of construction works Repair, replace or compensate for affected properties/structures or crops at current market value/replacement cost	A/L	/L
		A/S	A/S		A/L	A/L

Damage to private property/ other physical assets	• Land acquisition for project infrastructure and rights of way			• Consultation with Project Affected Persons (PAPs) • Carrying out analysis of alternatives to avoid/minimize involuntary taking of land and other physical assets • Compensation prior to start of construction works • Repair, replace or compensate for affected properties/structures or crops at current market value/replacement cost	
Loss of livelihoods	Land acquisition for project infrastructure and rights of way	A/S	A/S	Along with compensation: • Alternative livelihoods options and training for skill enhancement on businesses which they want to engage • Preferable employment during construction • Provision of technical support in business plan preparation, and implementation of the businesses • Facilitate Micro-finance support (savings and credit), and other small business development activities	**A/L** **A/L**
Land disputes	Land acquisition for project infrastructure and rights of way	A/S	A/S	• Obtain documentation i.e. leases and land board approvals before the start of the project	A/L A/L
Loss of access rights	Land acquisition for project infrastructure and rights of way	A/S	A/S	• Ensure thorough analysis of alternatives that access enjoyed by the community remains intact • In case of unavoidable circumstances, provide alternative access	A/L A/L
OCCUPATIONAL AND PUBLIC HEALTH, SAFETY AND SECURITY					
Air pollution affecting worker	• Caused by particulates from crushing plants and piling, earth moving	A/M	A/M	• Develop, implement, and monitor construction phase air quality	A/L A/L

and community health	equipment excavating and moving earth materials and exposure of bare soil piles to wind, and heavy vehicle diesel exhaust emissions.			management measures as a part of the project ESMP. • Prohibit burning of waste. Compost / recycle where possible, dispose remainder to registered landfill. Comply as far as possible with the Waste Management Hierarchy. • Practice water suppression for control of loose materials on roads and work sites. Do not use oil-based additives for dust control. Suitable ecologically sustainable commercially available products can be used, where necessary. • Cover heavy vehicle loads where material is friable and subject to wind-blow. • Where uncertain, undertake quantitative monitoring to comply with GOB legal and World Bank guidelines for stationary sources and fugitive sources where dust is finer than PM10 (health risk) and South African guidelines for settleable particulates (nuisance). • Implement good international industrial practice (GIIP) regarding vehicle maintenance. • Ensure workers wear appropriate PPE when operating point source equipment such as crushing plants.		
Health and safety of construction workers at work sites	• Accidents at construction sites due to unsafe working conditions and practices. • Failure to implement effective risk-based management measures for	A/S	A/S	• Contractor management to commit to developing and maintaining a culture of health and safety on site. • Develop, implement, monitor, and update Occupational and Community Health and Safety Management Plan.	A/L	A/L

	different construction activities. • Lack of training.			• Appoint competent health and safety managers to the PIU, the contractors, and Owners Engineer's staff with at least NEBOSH or similar international qualification and proven experience of management of civil works construction contracts. • Include thorough activity-specific hazard analysis and risk assessment of all activities on site and develop standard operating procedures (SOPs) and work instructions to manage/mitigate risks. Update regularly, as required by experience on site. • Provide induction training to all personnel on health and safety with regular refresher sessions. • Undertake daily task-specific toolbox talks prior to any work team undertaking activities on site. Maintain records of talk content, attendance and management / mitigation actions identified and implemented. • Ensure appropriate PPE used for all work tasks. • Ensure specialist training for tasks that involve higher risks e.g.: working at heights, heavy vehicle drivers. • Undertake regular, random drug and alcohol testing of employees.	
Construction worker transport safety	• Failure to implement safe vehicle and driver procedures. • Absence of seat belts for all passengers.	A/S	A/S	• Develop, implement, monitor, and update Traffic and Pedestrian Safety Management Plan. • Train all drivers in defensive driving techniques.	A/L	A/L

	• Shared use of open vehicles for materials, equipment and work teams • Failure to train drivers in defensive driver techniques , vehicle checks, and maintaining safe speed limits. • Driving under the influence of alcohol.			• Determine and enforce project vehicle speed limits and other safety measures particularly in areas of potential conflict with pedestrians. • Maintain vehicle safety checklists to roadworthiness of all project vehicles. • Ensure all project vehicles for transporting workers have seat belts. Drivers to be accountable for use of seat belts by passengers. • Regularly breathalyse drivers for alcohol.	
Public exposure to construction activities, including heavy vehicle traffic	• Boundaries of active construction sites not fully secured resulting in risk of exposure of surrounding communities to construction activities, vehicles and open excavations. • Lack of control of construction vehicles on public roads affecting other road users and pedestrians.	A/M	A/M	Secure construction sites, excavations, etc.	A/L	A/L
Increase in GBV/SEA/SH / HIV Aids	• Increased risk to local communities due to temporary influx of labour, project workers with disposable income.	A/S	A/S	• Prepare GBV Risk Assessment and Action Plan under the ESIA. • Awareness raising about public health impacts from labour influx • Promote local hiring for unskilled labour force from affected communities • Implementation of a comprehensive HIV/AIDS management plan by contractors and subcontractors developed for the project	A/L	A/L

				• Periodic monitoring of the project HIV/AIDS planned activities (as per the HIV/AIDS management plan) contractors			
Child labor	Use of child labor by contractors	A/S	A/S	• Strict compliance with national regulations on child labor by contractors	A/L	A/L	
Poor relations between the project and the community		A/S	A/S	• Consultation with surrounding landowners, communities and stakeholders • Make notifications for activities that may result in significant effects on activities practiced at the project area well in advance	A/L	A/L	
Occurrence of disputes between the PIU and the communities		A/S	A/S	• Develop detailed communications strategy with involvement of wide range of stakeholders	A/L	A/L	
SOCIO-ECONOMIC							
Employment opportunities for Botswana Nationals	• Prioritization of local employment during construction	B/M	B/M	• Acquisition of unskilled labour from the local areas where possible, to empower the local people • Skills development where possible • Establishment of transparent and agreed means of hiring	B/S	B/S	
Improved welfare of the communities	• Support of the PIU to local economic activity through local procurement of services	B/M	B/M	• Local contracting where possible, focus on local opportunities for economic development (Utilise local supplies and local subcontractors where possible) • Acquisition of unskilled labour from the local areas where possible, to empower the local people • Skills development where possible	B/S	B/S	

				• Establish transparent and agreed means of hiring	
Provision of work opportunities for disadvantaged and vulnerable households	• Prioritise employment of disadvantaged and vulnerable local households	B/L	B/L	• In identifying beneficiaries, conduct inclusive and accessible consultations with community members, community leaders and representatives, and local authorities. • Provide transparent information on project activities, benefits, and eligibility criteria to communities, through accessible channels, trusted intermediaries, and in relevant ethnic languages. • Proactively identify, consult with, and reach out to disadvantaged and vulnerable groups and households (through surveys, consultations, or other means, as appropriate). • Ensure that the grievance/beneficiary feedback mechanism is accessible by disadvantaged and vulnerable groups through raising awareness among these groups and in relevant ethnic languages, providing different intake channels, etc. • Follow the relevant measures included in the ***project design*** and the ***Stakeholder Engagement Plan (SEP)*** prepared for the project.	B/S	B/S
Influx of people into the Project area	Failure to manage influx of unskilled job seekers	A/S	A/S	• Development of a detailed and site-specific labour influx management plan. • Hiring from affected communities for unskilled labour force • For skilled work, training of available workers from local communities	A/L	A/L

GROUNDWATER						
Pollution of community groundwater boreholes or reduction in supply	• Pollution of groundwater due to leaching or spillage of hydrocarbons, sanitary effluent, etc. during construction, mainly due to poor waste management and sediment control, lack of control of diesel supply points, failure to manage contaminated runoff from workshops / car wash, inadequate provision for camp sanitation. • Pollution from erosion and sedimentation due to soil stripping and failure to manage runoff. • Reduction in community borehole water supply due to over-abstraction for construction use.	A/M	A/M	• Seek approval for use of groundwater from DEA. Monitor nearby community borehole levels and quality periodically. • Develop, implement, monitor, and maintain a hazardous materials and Waste Management Plan. • Store solid waste temporarily on-site in a designated place prior to off-site transportation and disposal. • Dispose of waste at designated place identified and approved by local authority. Do not permit open burning or burial of solid waste. Prohibit disposal of any debris or construction material/paint in environmentally and culturally sensitive areas (including watercourses, natural habitats, and cultural sites). • Comply with the waste principles (avoid, reuse, recycle, dispose). To the degree feasible, segregate and reuse / recycle materials such as wood, steel, plastic, packaging material, metal, and electrical scrap. • Label all hazardous waste, temporarily store in secured, bunded, facilities, and transport to approved hazardous waste disposal site by GoB registered contractors. If cross boundary removal, comply with BASEL convention requirements. • Strip and protect topsoil from construction working areas for replacement, where hard surfacing not in place. Prevent runoff during	A/L	A/L

				construction using temporary swales and control ponds.	
SURFACE WATER					
Pollution of surface water resources or reduction in supply	• Over-abstraction. • Pollution of resource from hydrocarbons, metals, effluent, etc. during construction, operation, or decommissioning, mainly due to poor waste management and lack of sediment control during construction • Pollution from erosion and sedimentation due to soil stripping and failure to manage runoff. • Failure to implement the mitigation hierarchy in accordance with ESS3.	A//M	A/M	• Seek approval for use of surface water from DWS. Monitor community borehole levels and quality nearby the BESS sites periodically. • Develop, implement, monitor, and maintain a Waste Management Plan. • Store solid waste temporarily on-site in a designated place prior to off-site transportation and disposal. • Dispose of waste at designated disposal site identified and approved by local authority. Open burning or burial of solid waste shall not be allowed. Prohibit disposal of any debris or construction material/paint in environmentally and culturally sensitive areas (including watercourses, natural habitats, and cultural sites). • To the degree feasible, segregate recyclable materials for reuse or recycling (sale). Demonstrate implementation of the waste management hierarchy. • Label all hazardous waste, temporarily store and transport to approved hazardous waste disposal site by GoB-registered contractors. If cross boundary removal, comply with BASEL convention requirements. • Strip and protect topsoil from construction working areas for replacement, where hard surfacing not in place. Control runoff during	A/L	A/L

				construction using temporary swales and sediment control ponds.		
BIODIVERSITY						
Loss of natural habitat	• Site clearing leading to permanent loss of natural habitats within the BESS security area and along transmission line rights of way	A/M	A/M	• Limit size and configuration of site via avoidance and minimization options analysis during project planning (preliminary design). Implement rehabilitation or restoration. • Where possible select sites which are already modified • Design and implement biodiversity offset if appropriate.	A/L	A/L
Loss of species of conservation concern	• Loss of terrestrial species of conservation concern due to habitat loss and fragmentation, direct mortality due to construction activities, proximity to noise nuisance and increased human presence during construction.	A/M	A/M	• Verify whether species of conservation concern occur within the area of direct influence of the construction sites • Verify whether ecological patterns or migratory corridors of any species of conservation concern are affected by the sites. • Propose mitigation / management measures if significant impact determined • Limit size and configuration of site via avoidance and minimization options analysis during project planning (preliminary design). Implement rehabilitation or restoration. • Design and implement biodiversity offset if appropriate. In unlikely event of endangered or critically endangered species found, undertake detailed critical habitat assessment, and consider alternative location and design options.	A/L	A/L
		A/M	A/M		A/L	A/L

Species/habitat loss due to increased harvesting for charcoal and firewood	• Increase in charcoal- and firewood-making, bush meat production etc. for sale to construction workers who have ready cash			• Prohibit harvesting of plant and animal materials • Implement fines and or disciplinary measures against workers found with unlawful plant or wild animal materials (bush meat) • No poaching or snaring is allowed within the project footprint, including workers accommodation areas provided by the project (if applicable).		
Fragmentation of habitat	• Fragmentation of ecological and migratory corridors caused by fencing	A/L	A/L	• Develop natural-resource management plan in partnership with communities. Explore options for alternatives to natural resource use or increased sustainability options. • Verify whether ecological patterns or migratory corridors of any species of conservation concern are affected within the area of influence of the BESS sites, substations and transmission line rights of way.	A/L	A/L
Hunting and persecution of wild animals	• Illegal hunting and persecution of wild animals by construction teams on the construction sites and surrounding areas	A/M	A/M	• Include training of all employees with regard to wild animal persecution and hunting • Monitor construction to ensure compliance	A/L	A/L
Habitat degradation due to alien invasive species	• Invasion of alien species caused by construction-related disturbance to soils and vegetation	A/M	A/M	• Rehabilitate all areas disturbed by construction • Monitor and remove alien invasive species during project infrastructure maintenance	A/L	A/L
CULTURAL HERITAGE						
Damage to /loss of sites of	• Destruction of archaeological sites,	A/M	A/M	• Comply with requirements by the Department of National Museum and Monuments for archaeological /	A/L	A/L

archaeological or cultural value	features, and artefacts due to land take.			palaeontological assessment for submission with the EA instruments. • Determine and implement measures to avoid, protect or recover, archaeological or palaeontological resources, as appropriate, if significant impact is likely. • Prepare a Chance Find Procedure for the project as part of the ESMPs (see Annexure 4 for example of a Chance Find Procedure)	
	• Destruction or damage to cultural and spiritual sites, features, material remains (including graves), and local culture due to land take or land-use conflicts, changes in sense of place due to expansion of industrial infrastructure.	A/M	A/M	• Comply with requirements by the Department of National Museum and Monuments for cultural heritage assessment for submission with the EA instruments. • Determine cultural sensitivity of project site and surrounding area within the project's direct area of influence. • Determine and implement measures to avoid, protect or recover, cultural heritage as appropriate, if significant impact is likely. • Follow the requirements set out in the Chance Find Procedure to be developed for this project	A/L	A/L
OPERATIONAL PHASE					
CLIMATE CHANGE					
Reduction in GHG emissions	• The project fosters grid integration with renewable energy, stores excess energy produced when these sources are at their	B/S	B/S	• Monitor and report on annual GHG reduction	B/S	B/S

	peak and releases it when needed. Significantly reduces carbon emissions.				
OCCUPATIONAL AND PUBLIC HEALTH, SAFETY AND SECURITY					
Fire hazard	• BESS fire-related air pollution and thermal health and safety risks including exposure to carbon monoxide, hydrogen fluoride, hydrogen chloride, methane, ethane, ethylene, and propylene; as well as extreme temperatures, as a result of thermal runaway caused by overcharging, deep discharging, high temperatures and physical stress to Li-ion battery cells. • Transmission lines subject to risk of grass and bush fires causing outages and interruptions in power supply to customers.	A/S	A/M	• For BESS, undertake a risk assessment as part of Environmental and Social Assessment (ESA) instruments. Determine possible physical extent of worst case incident. • Maintain buffer zone around facility based on risk assessment • Develop, implement, monitor and maintain an Operations Manual and Emergency Response Plan (ERP) • Ensure that all workers and surrounding communities within the zone of direct impact of a fire or explosion are familiar with the ERP and understand all necessary emergency actions. • Prohibit all site activities that could trigger a fire in a BESS unit (e.g. burning of waste on site, smoking outside of designated areas). Include controls in • Appoint a trained fire officer for co-ordinating rapid, appropriate responses in the event of a fire. • Ensure the appropriate fire response equipment is available on site during the construction and operational phases of the project.	A/L	A/L
Explosion hazard	• Thermal runaway resulting in explosion with consequent overpressure risks to worker health and safety.	A/M	N/A	• Undertake risk assessment as part of ESA instruments. Determine possible physical extent of worst-case incident. • Maintain buffer zone around facility based on risk assessment	A/L	N/A

			• Develop, implement, monitor and maintain a Fire Protection Plan and Emergency Response Plan (ERP). • Ensure that all workers and surrounding communities within the zone of direct impact of a fire or explosion are familiar with the ERP and understand all necessary emergency actions. • Maintain appropriate fire-fighting equipment on site and train fire-fighting teams in its use. • Ensure the appropriate fire response equipment is available on site during the construction and operational phases of the project.		
BIODIVERSITY					
Bird and other wildlife mortality	• Bird and other wildlife collisions with earth wires or conductors where route is on flight or migrating path of species prone to impact (typically large birds such as storks, bustards, cranes,) and flighting waterfowl. Other wildlife may include elephants, giraffes etc	N/A	A/M	• Determine risk of bird collision in ESA. • Install bird divertors, as necessary. • Monitor bird collisions if significant risk identified	N/A	A/L
Habitat degradation and species loss	• Caused by land take for BESS and transmission lines	A/M	N/A	• Develop and maintain fire management system including fire breaks around BESS facility	A/L	N/A
SOCIO-ECONOMIC					
Loss of ecosystem goods and services	• Caused by land take for BESS and transmission lines	A/L	A/L	• Verify existing natural resource use in project area • Replace lost natural resources	A/L	A/L

Employment opportunities for Botswana Nationals	• Prioritization of local employment during Project operation	B/L	B/L	• Acquisition of labour from the local areas where possible, to empower the local people • Skills development where possible • Establishment of transparent and agreed means of hiring	B/M	B/M
Improved welfare of the communities due to support of the PIU to local economic activity	• Support of the PIU to local economic activity through local procurement of services	B/L	B/L	• Local contracting where possible, focus on local opportunities for economic development (Utilise local supplies and local subcontractors where possible) • Acquisition of unskilled labour from the local areas where possible, to empower the local people • Skills development where possible • Establish transparent and agreed means of hiring	B/M	B/M
GROUNDWATER						
Deterioration of groundwater quality and quantity in community boreholes	• Over-abstraction by the project. Poor management of sanitary effluent and hazardous waste, including battery waste resulting in seepage to groundwater. • Fire resulting in pollution of soils and groundwater	A/S	N/A	• Seek approval for use of groundwater from DWS. Monitor nearby community borehole levels and quality periodically. • Disposal of used batteries containing hazardous waste must be mitigated via risk management measures that will include product specifications and “cradle to grave” provisions in the contracts of supplier for batteries used in the BESS in accordance with International best practice. • Develop, implement, monitor, and maintain a Hazardous Materials and Waste Management Plan.	A/L	N/A

			• Dispose of general waste at designated site identified and approved by local authority. Prohibit open burning or burial of solid waste. • To the degree feasible, segregate recyclable materials for reuse or recycling (sale). Demonstrate implementation of the mitigation hierarchy. • Label all hazardous waste, temporarily store in secured, bunded, facilities, and transport to approved hazardous waste disposal site by GoB registered contractors. If cross boundary removal, comply with BASEL convention requirements.	
DECOMMISSIONING PHASE				
BPC plans to maintain the BESS and the transmission lines in the long-term. Replacement of battery and transmission line and substation components may be required, however no decommissioning of the system as a whole is planned in the foreseeable future. Maintenance management measures that cover the recycling or disposal of certain components are to be included in the ESMP for the operational phase.				

5.4 Risks and Mitigation Measures Specific to Disadvantaged and Vulnerable Groups

It is likely that project-affected parties in the communities to be negatively impacted by the project activities will include vulnerable /disadvantages groups. "Disadvantaged and vulnerable groups" refer to persons who may be disproportionately impacted or further disadvantaged by the project(s) compared with other groups due to their vulnerable status (for example, due to age, gender identity, sexual orientation, ethnicity, disability, economic disadvantages, etc.). They include women headed households, child headed households, households made up of the aged or physically impaired and whose members are socially stigmatized (because of traditional or cultural bias) and economically underserved or disadvantage. They may also be limited in their ability to claim or take advantage of project development benefits and may require special engagement efforts to ensure their equal representation in the consultation and decision-making process associated with the project.

Impacts related to gender and other sources of vulnerability require the development of appropriate approaches. This may include income restoration measures that specifically target the vulnerable persons to ensure that they are reasonably assisted to overcome potential economic shock from the project and maintain the quality of life not less than their pre-project state because they are at higher risk than others based on their vulnerability status. The PIU, in consultation with stakeholders, will identify the type of livelihood restoration suitable to each vulnerable group. The following actions will be considered for vulnerable groups:

- creation of employment opportunities for them;
- provision of livelihood trainings with special attention to them;

Special attention will be given to the impact of the project on vulnerable groups during monitoring and evaluation of this ESMF and subsequent plans implementation.

5.5 Planning and Design Considerations for Avoidance of Environmental and Social Risks and Impacts

5.5.1 Location Alternatives

BESS Facilities

The BESS sites are planned close to the future solar farms at Jwaneng and Selibe Phikwe, the supply from which will be stored in BESS to extend the availability of energy for times when it is most needed. The lease of land for the solar farm and BESS has already been allocated (Mmadinare/Selibe Phikwe) or is presently being negotiated (Jwaneng). Each BESS facility is expected to require a 5ha site. At Mmadianre/Selibe Phikwe, BPC has a lease of 5 Ha reserved out of the 242 Ha allocated for the solar farm. BPC has also acquired the lease for the Jwaneng site and similarly 5 Ha is reserved for BESS out of the approved 248Ha. The exact location of the BESS sites within the leased areas is not presently determined. According to Tractebel (2024), there is currently no settlement on the leased areas, but it is not known whether they are being used for community grazing. It is also not known whether the proposed development will interrupt access to neighbouring farms. These issues require investigation in the project ESIA and, if necessary, adjustment to the engineering design.

Transmission Lines

BPC's initial planning for the 160 km 66 kV transmission line between Mabule and Lobatse proposes a route within the road reserves of existing main roads, which in most of the road sections is around 60 m wide. Similarly, a 46 km 33 kV line is proposed, nominally within the same road reserves, between Pitsane-Molopo to Hebron. The engineering work to confirm whether this is feasible has still to be done and there are a number of possible constraints that may affect both routes. Other services already exist in the road reserve in places, including overhead transmission lines, water pipelines and communication services. BPC has confirmed that there is an existing 33 kV line between Musi and Pitsane Molopo substation and that planning for a further 33 kV line between Pitsane Molopo and Mabule is being hindered by pre-existing 11 kV and other services in the road servitude. The Roads Department, whose responsibility it is to approve any applications for the joint use of road servitudes, generally want transmission lines and other services to be located as close to the edge of the servitude as possible, so as to minimize the impact on future plans to widen the road. Thus, even if the proposed routes for the present project are feasible given the congestion in the road servitudes, it is likely that the location would be along the edge of the road servitude, with half of the transmission line right of way extending into adjacent land use. For the 66 kV line, this would be 15 m and for the 33 kV line 7,5 metres. In sections where urban land uses are located close the edge of the road reserve, physical and economic impact may be significant and alternative routes which deviate from the road reserve would need to be considered.

The ESMF concludes that BPC's initial assumption that the 66 kV and 33 kV lines can be built within existing road reserves without impacting on surrounding land uses is optimistic. Engineering studies to determine the final route options must be undertaken, taking into account technical, cost, environmental and social route selection criteria. The proposed alignment will be screened using the screening tool in the ESMF, to determine any environmental and social assessments including specialist studies that need to be conducted once more information on the proposed design and route alignment becomes available. Where reasonable alternatives exist, these should be assessed as part of the preparation of the environmental and social assessments.

Substations

BPC expects to install the substation upgrades at Lobatse within the boundaries of the existing substation site. At Pitsane Molopo, a substation is presently under construction and the project will share this site without further extension of the boundaries. The substation will be green fields and will require approximately 1 ha of land. A location has not been determined yet. Alternative sites that meet technical requirements but minimize impact on surrounding land use must be considered.

5.5.2 Technology Alternatives

Technology alternatives have been a primary consideration in the development of the original project concept and the recent BESS feasibility study, which is aligned with global sustainable energy objectives. Based on calculations using World Bank methodology, the feasibility study estimates that the two 4-hour BESS systems will save ca. 80k ton of GHG emissions per year compared to the no-BESS case (Tractebel, 2024:86).

Battery system alternatives were also evaluated in the study, including reduction-oxidation (redox) flow, sodium-Sulphur (Na-S), lead-acid and advanced lead-acid, and lithium-ion batteries. The recommended technology is Lithium Iron Phosphate (LFP), due to its reliability, long cycle life, and enhanced safety

features. Lithium-ion technology is ideal for grid-scale connection and Li-ion battery chemistries have the highest energy density and have high specific energy and high load capabilities with power cells. The study concludes that LFP technology aligns with the project's objectives of ensuring a sustainable and robust energy storage solution, and LFP chemistry not only facilitates efficient energy storage and discharge but also prioritizes safety, minimizing the risk of thermal runaway and ensuring operational resilience.

The use of wooden poles for the 66 kV and 33 kV lines is well-established and technology alternatives are not required. Design considerations will be further assessed as part of the environmental and social assessments for the transmission and distribution lines.

5.5.3 Further Alternatives Assessment in the ESIA

No further work is required on BESS technological alternatives, which are thoroughly motivated in the Tractebel (2024) feasibility study. Refinement of location alternatives must be included in the ESIA, integrated with engineering studies to determine the most suitable options. This is particularly important for the transmission line routes, where uncertainty exists as to the viability of BPC's proposal to follow existing road reserves, and where diversion from the road reserves may result in significant physical and economic impact on local communities.

Other general alternatives that may require further assessment include:

- Supply of gravel and fill materials – options are to license new borrow pits or use existing borrow pits.
- Construction camp location alternatives - while BPC does not foresee the construction of labour camps, this may change if the EPC contractor sees a reason to have them and contractor's storage yards and offices will be necessary.
- Creation of new access link roads – the construction of new access roads to the BESS and substation sites to link to existing road infrastructure and to the solar farms has not been determined yet.

6 Procedures and Implementation Arrangements

6.1 Environmental and Social Risk Management Procedures

The environmental and social risk management procedures to be implemented during the project have been defined, based on the subcomponents that make up the Renewable Energy Support and Access Project. The procedures are summarized in **Table *6-1***.

Table 6-1. Project cycle and E&S management procedures.

Project stage	E&S stage	E&S management procedures
Formulation and Planning: Planning for subproject activities, including human and budgetary resources and monitoring measures	Planning	BPC will undertake the following: • Commission the independent ESIA/ESMP for the integrated project, including 2 x BESS installations, 2 new substations, 1 upgraded substation, 1 x 66 kV transmission line, 1 33 kV transmission line and distribution lines. • Submit all EA documentation for prior review and no objection by the World Bank prior to submission to DEA for Government authorization and prior to initiating bidding processes. • Commission a Resettlement Planning Framework or Resettlement Action Plan and ensure that all PAPs are compensated prior to project implementation. • Ensure that the contents of the ESIA/ESMPs are shared with relevant stakeholders in an accessible manner and consultations are held with the affected communities in accordance with the SEP. • Complete all documentation, obtain permits, and clearances required under the GoB Environmental Act and Regulation. • Train staff responsible for implementation and monitoring of plans. • Incorporate relevant environmental and social procedures and plans into contractor bidding documents; train contractors on relevant procedures and plans.
Implementation and Monitoring: Implementation support and continuous monitoring for projects	Implementation	BPC will: • Ensure implementation of plans through site visits, regular reporting from the field, and other planned monitoring. • Track grievances/beneficiary feedback. • Continue awareness raising and/or training for relevant staff, volunteers, contractors, communities.
Review and Evaluation: Qualitative, quantitative, and/or participatory data collection on a sample basis	Completion	BPC will: • Monitor E&S performance, assess whether plans have been effectively implemented and adapt plans and take corrective actions, as required. • Ensure that physical sites are meticulously restored.

6.2 Subproject Assessment and Analysis – E&S Screening

As a first step, all proposed activities should be screened to ensure that they are within the boundaries of the Project's eligible activities, and they are not considered as activities listed on the E&S Exclusion List below.

Exclusion list for World Bank Projects.

- Any construction in protected areas or priority areas for biodiversity conservation, as defined in national law
- Activities that have the potential to cause any significant loss or degradation of critical natural habitats, whether directly or indirectly, or which would lead to adverse impacts on natural habitats
- Activities involving changing forestland into agricultural land or logging activities in primary forest
- Purchase or use of banned/restricted pesticides, insecticides, herbicides, and other dangerous chemicals (banned under national law and WHO category 1A and 1B pesticides)
- Any activity affecting physical cultural heritage such as graves, temples, churches, historical relics, archaeological sites, or other cultural structures
- Activities that may cause or lead to forced labour or child abuse, child labour exploitation or human trafficking, or subprojects that employ or engage children, over the minimum age of 14 and under the age of 18, in connection with the project in a manner that is likely to be hazardous or interfere with the child's education or be harmful to the child's health or physical, mental, spiritual, moral, or social development
- Any activity on land that has disputed ownership or tenure rights
- Any activity that will cause physical relocation of households or will require the use of eminent domain
- Activities which requires use of equipment containing PCBs.
- Any activity with significant environmental and social risks and impacts that require an ESIA

As a second step, BPC will use the ***E&S Screening Form in Annexure 1*** to identify and assess relevant environmental and social risks specific to the activities and identify the appropriate mitigation measures. The *Screening Form* lists the various mitigation measures and plans that may be relevant for the specific activities (such as the standard operating procedures (SOPs), the ESIA / Environmental and Social Management Plan, the Labour Management Procedures, Chance Find Procedures, etc.).

BPC will also identify the documentation, permits, and clearances required under the government's Environmental Regulation and other relevant regulations pertaining to environmental and social management.

6.3 Subproject Formulation and Planning – E&S Planning

Based on the process above and the Screening Form, the PIU shall develop the relevant site-specific instruments for the life cycle of the project as follows:

- Site-specific ESIA and ESMP (covering all civil/electrical works subcomponents)
- Labour Management Plan (LMP) – Refer to Annexure 4
- Stakeholder Engagement Plan (SEP)
- Emergency Preparedness and Response Plan, including Fire Emergency Preparedness and response plan specific for the BESS operations)
- Code of Conduct
- GBV Risk Assessment and Action Plan
- Grievance Redress Mechanism (GRM)
- Resettlement Planning Framework or Resettlement Action Plan (RAP) (as required, following review of preliminary design of BESS and all transmission and distribution lines, substations and other project infrastructure).

The scope of the ESIA shall meet the requirements of the Botswana Environmental Act (2010) and the World Bank ESF (see Annexure 2 -Example ToR, and indicative ESIA and ESMP layout). The procedural steps for the preparation of ESIAs in Botswana (as indicated in Figure 4-1) provide an acceptable framework for conducting the ESIA. BPC shall through the design engineering contract commission the ESIA/ESMP and supervise the preparation of other applicable E&S instruments. The contents of the ESIA/ESMP must be shared with relevant stakeholders in an accessible manner, and consultations held with the affected communities on the environmental and social risks and mitigation measures. The ESMP shall distinguish between project phases, including design, construction, operation and decommissioning.

All E&S instruments must be submitted to the World Bank for prior review and no objection. BPC shall ensure that all documentation required for permits and clearances required under the Botswana's Environmental Act are submitted and approved by the regulator before any project activities begin on site. If a RAP or mini-RAP is required, following accurate determination of the boundaries of the permanent right of way of the transmission and distribution lines, substations and other project infrastructure, this can be prepared and submitted to the Bank and Botswana's regulator after the ESIA, but all compensation of Project affected persons (PAPs) must be completed before construction of the subcomponent starts.

During this stage, staff who will be working on the subcomponent activities shall be trained in the environmental and social management plans relevant to the activities they work on. BPC must provide such training to field staff. BPC must also ensure that all selected contractors, subcontractors, and vendors understand and incorporate environmental and social mitigation measures relevant to them as standard operating procedures for civil works. These measures shall be fully articulated in a Construction Contractor's Environmental Management Plan, to be prepared by the main contractors, which is to provide the detail of practical implementation of the general requirements of the project ESMP. The contractors' ESMPs shall be forwarded to the World Bank for no objection prior to approval by BPC and prior to site establishment. BPC shall provide training to selected contractors to ensure that they understand and incorporate environmental and social mitigation measures; and plan for cascading training to be delivered by contractors to subcontractors and vendors.

BPC shall further ensure that the entities responsible for ongoing operation and maintenance of the project have been trained on operations stage environmental and social management measures, as applicable.

6.4 Implementation and Monitoring – E&S Implementation

E&S Environmental and Social Reporting

The main contractors shall prepare monthly compliance reports for submission to the PIU. The Owners Engineer (OE) shall use data in these reports in support of monthly performance reports, which shall be separate from the monthly engineering progress reports and shall be submitted the World Bank in advance of progress meetings. A template for preparation of the OE's E&S report shall be agreed between the PIU and the World Bank prior to implementation. At a minimum, the reporting shall include (i) the overall implementation of E&S risk management instruments and measures, (ii) any environmental or social issues arising as a result of project activities and how these issues will be remedied or mitigated, including timelines, (iii) Occupational Health and Safety performance (including incidents and accidents), (iv) community health and safety, (v) stakeholder engagement updates, in line with the SEP, (vi) public notification and communications, (vii) progress on the implementation and completion of project works, and (viii) summary of grievances/beneficiary feedback received, actions taken, and complaints closed out, in line with the SEP.

E&S progress meetings between the PIU, the OE and World Bank shall be monthly unless otherwise agreed between the parties. High level quarterly performance reports, including a summary of E&S performance, shall be in accordance with the performance indicators defined in the legal agreement with the World Bank.

Incident Reporting

Health and safety, environmental, sexual orientation and gender identity (SOGI) and SEA/SH incidents shall be recorded by the project in accordance with the thresholds, methodologies and timelines specified in the World Bank environmental and social incident reporting (ESIRT) procedure. If the PIU becomes aware of an incident in connection with the project which may have significant adverse effects on the environment, the affected communities, the public, or workers, it should notify the World Bank within 24 hours. The thresholds for reporting incidents to the World Bank are defined in the incident reporting procedure and summarized in Annexure 5 of this ESMF.

All accidents involving project workers that result in (or are expected to result in) lost time of 3 days or more are reportable incidents, as are defined environmental incidents such as significant hydrocarbon spills, incidents of forced or child labor, abuses of community members by project workers (including gender-based violence incidents), violent community protests, or kidnappings. Incidents that do not meet the thresholds for reporting to the World Bank, must still be brought to the attention of the Bank through an email notification and corrective actions developed and implemented. The PIU, OE and contractor's shall all familiarize themselves with these requirements and shall work with the guidance of the Bank's team to ensure that immediate, underlying and root causes of incidents determined, and that corrective actions are promptly defined and effectively addressed.

Grievance Redress Mechanism (GRM)

Separate grievance registers shall be developed for labour grievances and community grievances. The mechanism for submitting grievances to the project shall be defined in the SEP (for community stakeholders) and the LMP (for project workers). The PIU must ensure that all project workers and project-affected communities are fully aware of the opportunities to submit grievances to the project, which may be through multiple channels, particularly for vulnerable people without easy access to communication tools.

The PIU shall be responsible for tracking grievances/beneficiary feedback during project implementation and ensuring that any agreed actions to close out the issues raised are promptly and effectively implemented. Tracking and close out of grievances shall be a standard agenda item in monthly E&Ss meetings with the World Bank.

6.5 Training

Throughout the Project implementation stage, the PIU shall continue to provide training and awareness raising to relevant stakeholders, such as staff, selected contractors, and communities, to support the implementation of the environmental and social risk management mitigation measures. Specific indicative capacity training needs for BPC are discussed in Section 6.5.

All internal staff and external agents undertaking work on the proposed development must undergo environmental inductions and training which must include the contents of the ESMPs. During the construction phase, regular health and safety toolbox talks must be held to discuss how to address potential occupational health and safety and environmental risks, near misses or incidents and how they can be avoided in future. Regular drills are to be held to ensure that all staff are aware of the spill contingency and other environmental health and safety emergency procedures as applicable and can perform these procedures in reasonable timeframes. The Contractor shall ensure that adequate environmental and social awareness training of all personnel takes place and that all construction phase workers receive an induction on the importance and implications of the ESMP prior to commencement with their work. The presentation shall be conducted, as far as possible, in the employees' *language of choice*.

The contractor shall keep records of all environmental training sessions, including names, dates and the information presented.

6.6 Review and Evaluation – E&S Completion

Upon completion of Project activities, BPC shall review and evaluate progress and completion of project activities, and all required environmental and social mitigation measures. Especially for civil works, the BPC shall monitor activities with regard to site restoration and landscaping in the affected areas to ensure that the activities are done to an appropriate and acceptable standard before closing the contracts, in accordance with measures identified in the ESMPs and other plans. The sites must be restored to at least the same condition and standard that existed prior to commencement of works. Any pending issues must be resolved before a subproject is considered fully completed. the PIU shall prepare the completion report describing the final status of compliance with the E&S risk management measures and submit it to the World Bank.

6.7 Technical Assistance Activities

The PIU shall ensure that the consultancies, studies (including feasibility studies, if applicable), capacity building, training, and any other TA activities under the Project are carried out in accordance with Terms of Reference acceptable to the Bank, that are consistent with the ESSs. The PIU shall also ensure that the outputs of such activities comply with the Terms of Reference determined for each activity.

6.8 Implementation Arrangements

6.8.1 Responsible Parties

The PIU shall ensure that monitoring practices include the environmental and social risks identified in the ESIA/ESMP and are a part of regular project monitoring. Day to day supervision and monitoring of the construction contracts shall be the responsibility of the Owner's Engineer (OE). The contractors' and OE's E&S Environmental and Social (E&S) specialists shall all be based in the vicinity of the project area to facilitate responsiveness to activities on site. All E&S specialists in the PIU, OE and contractor's organizations shall have the minimum qualifications and experience specified in Table 6-3.

The construction contractors shall be responsible for the implementation of all management and mitigation measures in the approved project instruments. The main contractors shall be responsible for ensuring that any subcontractor employed under their contract is fully familiar and complies with all E&S obligations in the approved E&S instruments.

Table *6-2* below summarizes the roles and responsibilities regarding the implementation arrangements for **environmental and social management** of the project.

Table 6-2. Implementation arrangements for the project

Level/responsible party	Roles and responsibilities
BPC PIU	• Manage overall implementation of the project. • Provide support, oversight, and quality control to field staff working on environmental and social risk management. • Collect, review, and provide quality assurance and approval of E&S instruments including Screening Forms, the ESIA/ESMP, the Contractors' C-ESMPs, Stakeholder Engagement Plan (SEP), Labour Management Plan (LMP), GRM, Emergency Preparedness and Response Plan (EPRP). Keep documentation of all progress. • Ensure that bidding documents for the appointment of the OE and Contractor's reflect all the environmental and social performance requirements specified in the project E&SE&S instruments, including the qualifications and experience of E&S personnel. • Oversee overall implementation and monitoring of environmental and social mitigation and management activities, compile progress reports from subprojects, and report to the World Bank on a quarterly basis. • Coordinate monthly E&S meetings with the Owner's Engineer and the World Bank. • Train central and field staff and contractors who will be responsible for implementing the ESMF.

BPC field EHS staff	• Ensure project activities do not fall under the exclusion List. Fill out Screening Forms for relevant subproject activities and submit forms to the national level. • Oversee daily implementation and monitoring of environmental and social mitigation measures, and report progress and performance to the national level on a monthly basis. • Provide training to local contractors and communities on relevant environmental and social mitigation measures, roles, and responsibilities.
Owner's Engineer (OE)	• Supervise day to day E&S performance of all contractors, including main Contractors and sub-contractors. • Monitor Contractors' compliance against the requirements of the project ESMP and the Contractors' C-ESMPs, LMP, SEP and contract documents. • Interact regularly with the Contractors, discuss performance issues, define corrective actions, and monitor close-out of agreed measures. • Prioritize actions to rectify persistent E&Ss performance failures by Contractors (eg: NCRs, warning letters, penalties, suspension of activities). • Prepare monthly E&S performance reports on behalf of the Owner. • Assist the PIU to prepare monthly E&S performance reports and submit to the PIU.
Contractors	• Prepare a C-ESMP based on the project E&S instruments, which provides the detailed working procedures for the management of risks and impacts on the project. • Comply with the Project's environmental and social mitigation and management measures as specified in the C-ESMP, ESIA/ESMP, LMP, SEP and contract documents, as well as national and local legislation. • Take all necessary measures to protect the health and safety of workers and community members, and avoid, minimize, or mitigate any environmental harm resulting from project activities. • Provide and maintain records of induction training for all project workers on environmental and social E&Ss specified in the project E&S instruments, the contract and legal requirements. • Develop and implement task-specific training for higher risk job/activity categories such as working at heights, driver training. • Undertake daily task-based toolbox talks for specific activities being undertaken by work teams. Record attendance, summary content of talk, identification of key risks, and any specific risk management actions determined for the task. • Prepare monthly performance reports for submission to the OE. • Promptly report any OHS, community safety, SOGI or SEA/SH incidents to the OE/PIU in accordance with the time frames and methodologies required by the World Bank. • Maintain a communications register with communities for submission to the OE/PIU for inclusion in a central communications database. • Maintain records of labour management as per the requirements of the LMP.

7 Assessment of Institutional Capacity to Implement the ESMF

Department of Environmental Affairs. At a National level, Botswana's legal and institutional framework for E&S management is satisfactory. The Environmental Assessment Act (No. 10 of 2010) and associated Environmental Assessment Regulations (2012) provide the overarching legal framework for environmental and social management. The aim of the Act is to promote sustainable socio-economic development in the country through mainstreaming of E&S considerations in project planning and implementation. The Department of Environmental Affairs is responsible for the implementation of the Act and its associated regulations, which includes determining the scope of statutory instruments required to manage project E&S risks and for approving the instruments, prior to implementation. The DEA's capacity to monitor projects under implementation is limited, and demonstration of compliance with the conditions of approval of the project authorization falls largely to the developer.

Botswana Power Corporation (BPC) through its PIU will have the overall responsibility to implement, monitor and report on the implementation of the project's E&S performance and compliance with the project's conditions of approval. BPC's capacity to manage environmental and social E&Ss will need to be strengthened since there is limited experience in the organization of the implementation of the World Bank environmental and social standards. Institutional strengthening of the PIU and implementation support together with a structured capacity building program by the Bank are required to strengthen BPC's capacity to implement the project E&S instruments.

In addition to the project manager, financial manager and procurement officer in the PIU, the following staff must be appointed to manage E&S on the project:

Environmental Specialist

- Shall be a primary focal point on all environmental issues.
- Ensure timely preparation of environmental instruments required to inform the project during preparation and implementation.
- Oversee the management of all environmental programs under the Project, in coordination with relevant BPC staff and consultants and report to the Botswana Department of Environmental Affairs.
- Ensure that technical proposals, contracts and implementation conform to the National law and the World Bank ESF environment standards and EHS guidelines.

Social Development Specialist

- Ensure timely preparation of social instruments required to inform the project during preparation and implementation.
- Oversee the management of all social programs under the Project, in coordination with relevant BPC staff and consultants.
- Support staff and consultants with the identification of stakeholders, sources of baseline data and documentation relevant to the Project.
- Ensure that technical proposals, contracts and implementation conform to the National and World Bank social standards and guidelines.

- Ensure that project activities avoid or minimize negative social impacts and where they cannot be avoided, such impacts are identified and the necessary mitigation measures are developed and implemented in compliance with the relevant national law, as well as the World Bank social standards, EHS guidelines and other relevant policies.
- Prepare and review all social instruments and ensure that they are to an international standard.
- Manage the activities of the CLOs.

Community Liaison Officer (CLO)

- Facilitate the smooth liaison between contractors, staff and local residents by maintaining regular contact and networking with communities (located within reasonable proximity to the project construction site) and other key relevant stakeholders.
- Manage expectations of community interest groups.
- Assist BPC to identify potential implementation problems and bottlenecks with regards to both the community and local government relationships.
- Disclose project related information to interest groups and people that are affected or likely to be affected by the project.
- Ensure that communities at construction sites are kept abreast of the project developments and communication channels remain open with the communities.
- Forward questions and grievances related to the project from the community members and leaders to appropriate BPC officers responsible for managing the Project GRM.
- Provide information to stakeholders within the community to assist them to realise opportunities and resolve grievances.
- Identify risk and impact mitigation measures (including managing and resolving local grievances, conflict resolution and mediation).
- Respond to community concerns by ensuring that they are brought to the attention of the social development officer and to conduct follow-ups to ensure issues are resolved on time to prevent risk and negative publicity to the project.

OHS Officer/Safety Officer

- Shall be a primary focal point on all OHS issues.
- Ensure timely preparation of OHS plans required to inform the project during preparation and implementation.
- Oversee the management of all OHS programs under the Project, in coordination with relevant BPC staff and the owner's engineer.
- Support the Owner's Engineer in monitoring the contractor's compliance with the Project OHS plan, compliance to National legislation, World Bank Environmental, Health, and Safety Guidelines (General and Electric Power Transmission and Distribution)

- Ensure implementation of the LMP in line with the World Bank requirements.

Owner's Engineer (OE) is primarily responsible for supervising the project on behalf of BPC, including compliance with all environmental and social E&Ss. The OE shall have sufficient capacity to manage all aspects of the contractor's environmental and social performance in accordance with Botswana law, the approved instruments and the World Bank ESS. The Terms of Reference for the OE shall make provision for the appointment of the following qualified field staff:

- Environmental Officer
- Social Officer
- Occupational Health and Safety Officer

7.1 Proposed Training and Capacity Building

Training and capacity building will be necessary for the key stakeholders in order to ensure effective implementation of the ESMF, SEP, and other environmental and social instruments. An initial training approach is outlined in **Table *7-1*** below. To the extent possible, training on environmental and social risk management will be integrated into the project cycle and operational procedures. The TA provided under Component 3 of the project will address any required training needs for the dedicated PIU in BPC.

Given the need to raise awareness among project workers and stakeholders at many levels, a cascading model is proposed where information will follow from the national level to the field levels.

Table 7-1. Proposed training and capacity building approach

Responsible party	Target Audience	Time Lines	Training Needs
BPC PIU	Regional field staff Project Contractors	At intervals throughout project implementation	• E&S monitoring and reporting • Incident and accident reporting • Application of LMP, including Code of Conduct, SEA/SH, COVID-19, HIV/AIDS mitigation • Application of SEP and the grievance/beneficiary feedback mechanism (GRM) • Worker and community health and safety • Task-specific risk assessment • Vehicle and driver safety • Environmental & Social Framework (ESF) • E&S monitoring and reporting • Incident and accident reporting • Labour Management Plan, including Code of Conduct, SEA/SH, GBV, HIV/AIDS, • GBV Risk Assessment and Action Plan • Stakeholder Engagement Plan (SEP) and the grievance /

			beneficiary feedback mechanism (GRM) • Worker and community health and safety • Vehicle and driver safety • Emergency Preparedness and Response Plan
BPC Local Staff	Local Government structures, community leaders, community groups	At intervals throughout project implementation	• Community health and safety • Worker Code of Conduct • SEA/SH issues, GBV prevention measures • HIV/AIDS • Community grievance redress • Workers' grievance redress (GRM)

7.2 Estimated Budget

The table below lists estimated cost items for the implementation for the ESMF, which have been included in the overall project budget:

Table 7-2. ESMF Implementation Budget

Activity/cost item	Potential cost (USD)
Trainings for staff (venue, travel, refreshments etc.)	10,000
Trainings for contractors (venue, travel, refreshments, etc.)	4,000
Printing of awareness raising materials / grievance redress materials	5,000
Software for data collection / supervision / monitoring / grievance redress	2,000
Preparation of site-specific ESMPs and other site-specific plans	130,000
Cost of obtaining clearances or permits	20,000
Implementation of site-specific ESMPs and other site-specific plans	9,000
Environmental and social staff (for different levels)	110,000
Travel and accommodation budget for environmental and social staff site visits	10,000
External monitoring or supervision consultant (if needed)	20,000
TOTAL (estimate)	**320,000**

8 Stakeholder Engagement, Disclosure, and Consultations

A separate SEP has been prepared for the Project, based on the World Bank's Environmental and Social Standard 10 on Stakeholder Engagement. The SEP can be found here www.bpc.bw. Initial draft pf SEP has been disclosed by Appraisal in May 2024.

The project will comply with the Botswana regulations and the World Bank's ESS 10 on stakeholder engagement and information disclosure. Informing all Project stakeholders about their rights and choices is critical and a key requirement of the World Bank's ESF and Botswana regulations. The engagement process will be an on-going activity throughout the project cycle to ensure that stakeholders are fully engaged in the Project and have the opportunity to participate in its development and implementation. Early and continuous stakeholder engagement enables stakeholders the opportunity to provide their input and feedback in order to strengthen project design, implementation and minimize negative impacts, or mitigate them where they cannot be avoided. BPC will as a result from the planning stage, provide sufficient information about the potential risks and impacts of the Project during consultations with Project stakeholders. Such information will be disclosed in a timely manner, in accessible places, and in a form and language understandable to project-affected parties and other interested parties as set out in ESS10, so they can provide meaningful input into project design and mitigation measures.

Stakeholder engagement will be undertaken with the purpose of affording stakeholders the opportunity to contribute to both the design and implementation of the project activities and reduce the likelihood of conflicts. Stakeholder consultations are thus, mainly undertaken for:

- Enhancement of public confidence in the project
- identification of the views of stakeholders (local communities, key institutions including business community, individuals affected by the project, traditional and local authorities, and other interested parties) for consideration in the project design and in decision-making;
- obtaining local and traditional knowledge that may be useful for decision-making;
- assessing mitigation measures which may be undertaken to minimize any adverse impacts of the proposed activities under the project;
- facilitating consideration of alternatives, mitigation measures and trade-offs;
- ensuring that important impacts are not overlooked, and maximization of benefits;
- reduction of conflicts through the early identification of contentious issues;
- providing stakeholders with an opportunity to influence the designs and implementation in a positive manner;
- improving transparency and accountability in decision-making.

Stakeholder engagement will be built through development and implementation of a comprehensive Stakeholder Engagement Plan (SEP) and setting up of an effective Grievance Redress Mechanism (GRM). The PIU will engage with stakeholders through information disclosure, consultation and informed participation in a manner proportionate to the risk to and impacts on affected communities.

The PIU's Environmental and Social section, which also handles public relations and stakeholder consultations will undertake targeted consultations and awareness campaigns to reach all stakeholders

The PIU will thus, using local language, employ different communication channels such as public gatherings, public notices at community level or chiefs places, place posters in strategic locations and many public places, local radio stations and television programs, newspapers, and the distribution of Project Information Sheets, news updates and posters through, or displayed in, public places such as schools, health centres, and market places.

A considerable amount of consultation and engagement with Project Affected Stakeholders, other stakeholders who have interest in the proposed project, and the and members of the public has previously occurred within the communities in the Project Area engaged by the BPC in collaboration with local authorities. Consultations that were undertaken were with the general public, and as well as the directly affected communities and individuals. Several methods of engagement that include telephone calls, notices, formal meetings, organized public consultations at kgotla, and meetings/presentation to district officials were used to consult with these stakeholders.

As required by ESS10, the PIU has prepared, a Grievance Redress Mechanism (GRM) as part of the SEP to receive and facilitate resolution of concerns and grievances of project stakeholders related to the project. The GRM is a critical component of the project cycle that is related to citizen feedback, incorporation of community consultation, concerns and complaints about the project's environmental and social performance and engagement, especially where it is anticipated that a project's planning, implementation and operations will involve ongoing risk and adverse impacts on surrounding. Thus, the project GRM will include issues related to environmental and social, including resettlement issues that will arise during project implementation. The GRM that will accommodate all complaints from stakeholders, will be implemented to ensure that all complaints from stakeholders are dealt with appropriately, with corrective actions being implemented, and the complainant being informed of the outcome.

The Project GRM is detailed in the project's SEP and has been developed to ensure that the project is proactive in terms of addressing stakeholders complaints or concerns. This GRM will only target cases involving the project and will make provisions for handling of issues related to vulnerable groups, gender-based violence and sexual exploitation.

The objectives of the GRM include, but are not limited to the following:

- creation of a mechanism through which the project will be able to accommodate all the complaints
- creation of a mechanism through which stakeholders can communicate their dissatisfaction or grievances
- creation of a mechanism through which the project will systematically, promptly and exhaustively respond to peoples' concerns
- creation of an avenue through which stakeholders and the project can together solve problems and handle issues arising from the project
- creation of a mechanism in which the project will ensure that all complaints are promptly and adequately attended

- creation of a mechanism for stakeholder feedback on environmental and social issues emanating from the project including compensation and resettlement issues

The PIU will maintain a GRM database and log book, which will contain all the information on complaints or grievances received from the stakeholders. This would include the following:

- the type of complaint,
- location of complainant, and date and time on which complaint was lodged and resolved,
- the assigned Project officer to address the complaints,
- actions to address these complaints, and final outcome.

The PIU will disclose the ESMF, and the SEP as required by the Botswana regulations as well as the World Bank Disclosure Policy on the World Bank's external website. Copies of other subsequent environmental and social instruments (such as ESIAs/ESMPs) will be disclosed in like manner. Prior to project appraisal, the ESMF document will be disclosed in the World Bank's external website and made available to the public via BPC's website: http://www.bpc.bw .

BPC has conducted in-depth consultations in early May 2024. Summary and the minutes of consultations are provided in the SEP.

Annexure 1: Environmental and Social Screening Checklist

The objective of these screening criteria is to identify potential environmental and social impacts that may arise due to implementation of identified subprojects.

1. Description of Intervention

Project identification

Project Title	
Project Proponent	
Proposed start date	
Proposed completion date	
Present land ownership	

2. Project Location

Location	*(Location Map and Site Photographs to be annexed)*
Description of Project Area *(The geographical extent of the project and area affected during construction)*	
Adjacent land use and features	

3. Screening for potential environmental and social impacts related to the proposed project interventions

Screening question	**YES**	**NO**	**Significance of Effect (Low, moderate, substantial or High impact)**	**Significance P- positive, N negative,** **U -unknown***	**Remarks**
Will construction and operation of the Project involve actions which will cause					

physical changes in the locality (topography, land use, changes in water bodies, etc)					
Will the Project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health?					
Will the Project produce solid wastes during construction or operation?					
Will the Project release pollutants or any hazardous, toxic or noxious substances to air?					
Will the Project cause noise and vibration or release of light, heat energy or electromagnetic radiation?					
Will the Project lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater or coastal waters?					
Will there be any risks and vulnerabilities to public safety due to physical hazards during construction or operation of the Project?					
Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected by the project?					
Are there any areas or features of high landscape or scenic value on or around the location which could be affected by the project?					
Are there any other areas on or around the location which are important or sensitive for reasons of their ecology e.g. wetlands, watercourses or other water bodies, mountains, forests which could be affected by the project?					
Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, migration, which could be affected by the project?					

Is the project located in a previously undeveloped area where there will be loss of green-field land					
Will the project cause the removal of trees in the locality?					
Can any of the identified historic or culturally importance sites on or around the location be affected by the project?					
Are there existing land uses on or around the location e.g. homes, gardens, other private property, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism, mining or quarrying which could be affected by the project?					
Are there any areas on or around the location which are densely populated or built-up, which could be affected by the project?					
Are there any areas on or around the location which are occupied by sensitive land uses e.g. hospitals, schools, places of worship, community facilities, which could be affected by the project					
Are there any areas on or around the location which contain important, high quality or scarce resources e.g. groundwater, surface waters, forestry, agriculture, fisheries, tourism, minerals, which could be affected by the project?					
Will the project involve treatment of Solid Waste, if so indicate the amounts, nature of waste and briefly describe proposed waste management technologies to be implemented on site.					
Will the project create significant/ limited/ no social impacts? If so please provide details of what they will be.					
Land acquisition resulting in loss of income from agricultural land, plantation or other existing land-use.					
Land acquisition resulting in relocation of households.					
Cause any displacement or adverse impact on tribal settlement(s).					

Lead to any specific gender issues.					
Will the project create significant / limited / no Social impacts during the construction stage?					
Will it involve the improper storage and handling of substances leading to contamination of soil and water					
Will the activity lead to elevated noise and dust emission?					
Will project activities lead to disruption to traffic movements					
Will project activities lead to damage to existing infrastructure, public utilities, amenities etc.					
Possible conflicts with and/or disruption to local community					
Will lead to likely damage to existing infrastructure, public utilities, amenities etc.					
Are there adequate facilities for storage of construction goods & materials					
Will need to establish facilities for storage of any hazardous material					
Facilities for long term housing for operational workers					
Are facilities for construction workers (temporary labour camp, drinking water, waste disposal, etc.) required during implementation					
Are facilities for disposal of solid waste available within the nearby towns/villages - please specify the forms in the comments					
Cumulative effects due to proximity to other existing or planned projects with similar impacts					

**Key - Assuming that all mitigation measures are implemented as proposed, the following effects can be predicted*

N/S – Effect not significant, or can be rendered insignificant with mitigation measures
SN – Significant negative effect and requires further studies and
SP – Significant Positive effect
U – Outcome unknown or cannot be predicted, even with mitigation

4. Project operating requirements

	YES	NO
Does the project belong to a prescribed category of the EIA for preparation of an EIA		
Does the project need to obtain any other permits/licences/ authorizations prior to construction?		
Does the project need to obtain any other permits/licences/ authorizations prior to the operational phase?		

5. Screening Decision Recommendations (check one):

Screening Decision	Tick applicable option
Potential adverse effects are considered insignificant and can be monitored through checklists.	
All potential adverse effects can be classified as general construction impacts and are mitigatable with known technology and operational impacts are minimal. Public concern does not warrant further assessment. Therefore, standalone Environmental and Social Assessment not required, an Environmental and Social Management Plan would be required prior to the proceeding with project physical activities.	
Potential adverse impacts are significant, hence a standalone Environmental and Social Impact Assessment, including and Environmental and Social Management Plan is needed before commencing with physical activities. An assessment is required under national legislative requirements.	
Potential adverse impacts are significant; hence project cannot be justified	

Details of Person responsible for the screening checklist

Screening report completed by

Name:_____ Designation:_____
Date:_____

Annexure 2: Example Terms of References for an ESIA and ESIA and ESMP Indicative layout

TERMS OF REFERENCE For
DETAILED ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR XXXXXXXXXXXXX

1. **Background**

Provide a short background of the project

2. **Objective**

Provide a short description of the objective

3. **Scope of Work**

The Consultant will carry out an Environmental and Social Impact Assessment (ESIA) of the project to assess its environmental and social risks and impacts of the project throughout the project life cycle. The assessment will be proportionate to the potential risks and impacts of the project, and will assess, in an integrated way, all relevant direct, indirect and cumulative environmental and social risks and impacts throughout the project life cycle, including those specifically identified in the Environmental and Social Standards (ESSs) 2–10 of the World Bank's Environmental and Social Framework (ESF).

In addition to preparing the ESIA to meet the World Bank ESF requirements, the consultant will be required to meet all requirements as stipulated under the Environmental Assessment Act (Act No. 10 of 2011) by preparing a Project Brief for submission to Department of Environmental Affairs.

The ESIA will be based on current information, including an accurate description and delineation of the project and any associated aspects, and environmental and social baseline data at an appropriate level of detail sufficient to inform characterization and identification of risks and impacts and mitigation measures. The ESIA will evaluate the project's potential environmental and social risks and impacts; examine project alternatives; identify ways of improving project selection, siting, planning, design and implementation in order to apply the mitigation hierarchy for adverse environmental and social impacts and seek opportunities to enhance the positive impacts of the project. The consultant will be required to liaise with the project proponent to determine where alterations could be made to the proposed alignment and site location of the infrastructure.

The ESIA will be an adequate, accurate, and objective evaluation and presentation of the known risks and impacts, prepared by qualified and experienced persons.
The Consultant will ensure that the ESIA considers an appropriate manner of all issues relevant to the project, including:

- the country's applicable policy framework, national laws and regulations, and institutional capabilities (including implementation) relating to environment and social issues; variations in country conditions and project context; country environmental or social studies; national environmental or social action plans; and obligations of the country directly applicable to the project under relevant international treaties and agreements;
- applicable requirements under the ESSs; and
- the Environmental and Health Safety Guidelines (EHSGs), and other relevant Good International Industry Practice (GIIP).

The ESIA will set out and apply a mitigation hierarchy, which will:

- Anticipate and avoid risks and impacts.
- Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels.
- Once risks and impacts have been minimized or reduced, mitigate; and
- Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.

The ESIA, informed by the scoping of the issues, will take into account all relevant environmental and social risks and impacts of the project, including:

Environmental risks and impacts, including: (i) those defined by the EHSGs; (ii) those related to community safety (including dam safety and safe use of pesticides); (iii) impacts on biophysical and biological aspects of the receiving environment; (iv) any material threat to the protection, conservation, maintenance and restoration of natural habitats and biodiversity; and (v) those related to ecosystem services and (vi) the use of natural resources.

Social risks and impacts, including: (i) threats to human security through the escalation of personal, communal or inter-state conflict, crime or violence; (ii) risks that project impacts fall disproportionately on individuals and groups who, because of their particular circumstances, may be disadvantaged or vulnerable; (iii) any prejudice or discrimination toward individuals or groups in providing access to development resources and project benefits, particularly in the case of those who may be disadvantaged or vulnerable; (iv) negative economic and social impacts relating to the involuntary taking of land or restrictions on land use; (v) risks or impacts associated with land and natural resource tenure and use, including (as relevant) potential project impacts on local land use patterns and tenurial arrangements, land access and availability, food security and land values, and any corresponding risks related to conflict or contestation over land and natural resources; (vi) impacts on the health, safety and well-being of workers and project-affected communities; and (vii) risks to cultural heritage.

Where the ESIA identifies specific individuals or groups as disadvantaged or vulnerable, the Consultant will propose and implement differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing any development benefits and opportunities resulting from the project.

The ESIA should identify communities, properties and developments that might be affected by the transmission line alignment and substation location and advice alternative routes/locations. If unavoidable, the consultant will be required to prepare a RAP as per the requirements of ESS 5 and those requirements as stipulated under national law.

The ESIA will also identify and assess, to the extent appropriate, the potential environmental and social risks and impacts of any potential Associated Facilities. The Consultant will address the risks and impacts of Associated Facilities in a manner proportionate to the Borrowers level of control or influence over the Associated Facilities. To the extent that the Borrower cannot control or influence the Associated Activities to meet the requirements of the ESSs, the environmental and social assessment will also identify the risks and impacts the Associated Facilities may present to the project.

The ESIA will also consider risks and impacts associated with the primary suppliers as required by ESS2. The Borrower will address such risks and impacts in a manner proportionate to the Borrower's control or influence over its primary suppliers as set out in ESS2.

The ESIA will consider potentially significant project-related transboundary and global risks and impacts, as may be relevant to the project, such as impacts from effluents and emissions, increased use or contamination of water resources, emissions of short- and long-lived climate pollutants, and impacts on threatened or depleted migratory species and their habitats.

In particular, the consultant will be required to conduct the following specialist studies, as required under national law, as a minimum and will be required to identify any further specialist studies as may be needed:

- Archaeological study in the project area and provide mitigation measures for approval by relevant departments.
- Ecology study to determine the type of vegetation, sensitivity of the ecosystems to be impacted and provide mitigations.
- Avi-fauna study and provide mitigations to protect bird life. *(Stipulate the relevant studies that will be required based on the scope of work)*

The ESIA will include stakeholder engagement as an integral part of the assessment, in accordance with ESS 10. The consultant will be required to conduct stakeholder engagement with interested and affected parties including communities that may be affected, and provide sufficient information to stakeholders, in a manner appropriate to the nature of their interests and the potential environmental and social risks and impacts of the project.

The ESIA must contain a summary of the stakeholder engagement process that was undertaken for the project including a description of how the Borrower will propose and implement a grievance redress mechanism to address concerns and receive complaints and facilitate their resolution. This description should be derived from the Stakeholder Engagement Plan (SEP) prepared for the project. The ESIA will clearly define roles, responsibilities and accountabilities and designate the persons who will be responsible for implementing and monitoring stakeholder engagement activities and ensuring compliance with national laws and regulations, as well as the requirements of the World Bank ESF through the life cycle of the project.

As part of the ESIA, the consultant will be required to prepare an Environmental and Social Management Plan. The ESMP should contain a clear set of mitigation, monitoring, and institutional measures to be taken during implementation and operation of a project to eliminate adverse environmental and social risks and impacts, offset them, or reduce them to acceptable levels. The ESMP also includes the measures and actions needed to implement these measures. The ESMP will therefore:

- identify the set of responses to potentially adverse impacts;
- determine requirements for ensuring that those responses are made effectively and in a timely manner; and
- describe the means for meeting those requirements.

Provide required survey reports and cadastral survey drawings that meets the Land Authority submission standard for Wayleave application

Prepare all relevant reports and documents necessary to execute the services in accordance with the Terms of Reference and the statutory requirements of Botswana

4. Deliverables

Cleary stipulate the deliverables based on the scope of work

5. Schedule

The study is scheduled to last for XXX months.

6. Contract Type

The contract is Lump sum. The term of contract is binding and elapse upon approval of the report by DEA and clearance of the ESIA and ESMP by the Bank

7. Key Staff

The project team and their qualifications have to reflect the scope of services and show excellent technical and professional qualifications. The Consultant will ensure that appropriately qualified experts are available, as required, for each of the tasks outlined above. The Consultant shall provide the list of proposed key Staff with copies of academic qualification and CVs and practicing/registration documentation from respective professional regulatory bodies.

The following experts should form part of the ESIA team as a minimum *(To be elaborated or changed based on the type of study and its specific needs)*

ESIA Team Lead/ Environmental expert; shall have at least a recognized Bachelors' Degree in Environmental Science, Environmental Engineering or in a related environmental discipline and at least 15 years of experience in Environmental and Social Impact Assessment. They shall have performed EIA/ESIA/SEA studies for similar projects, it would preferable that they have prior experience working in the region and preparing lender funded projects. The expert must be a registered and certified environmental assessment practitioner at Principal Environmental Assessment Practitioner Level per the Botswana Environmental Assessment Practitioners Board (EAPB).

ESIA Socio-Economist (Social) Expert; shall have at least a Bachelors' Degree in Social Science, Sociology or similar with at least 10 years of experience in consultancy, preferably in EIA/ESIA and economic analysis of infrastructure projects.

Biodiversity Specialist; shall have at least a Bachelors' Degree in Terrestrial Ecology or similar with at least 8 years of experience in consultancy and projects, preferably engineering and energy infrastructure projects.

Avi-fauna Specialist; shall have at least a Bachelors' Degree in Biology or Environmental Science with at least 8 years of experience in consultancy and projects, preferably engineering and energy infrastructure projects.

Archaeological and Cultural Heritage Specialist; shall have at least a Bachelors' Degree in Archaeology or other relevant qualification with at least 8 years of experience in consultancy and projects, preferably engineering and energy infrastructure projects. The expert must be accredited with the Department of National Museum and Monuments.

Geological Information Systems (GIS) Specialist; Bachelors' Degree in Geography, Geoscience, Computer Science, Surveying, Engineering, Forestry or Earth Science with at least 5 years of experience surveying engineering and energy infrastructure projects and similar assignments.

Annexure to ToR: Indicative Outline and Content of the ESIA

Executive summary

Concisely discusses significant findings and recommended actions.

Project description

- Concisely describes the proposed project and its geographic, environmental, social, and temporal context, including any offsite investments that may be required (e.g., dedicated pipelines,
- access roads, power supply, water supply, housing, and raw material and product storage facilities), as well as the project's primary suppliers.
- Through consideration of the details of the project, indicates the need for any plan to meet the requirements of ESS1 through 10.
- Includes a map of sufficient detail, showing the project site and the area that may be affected by the project's direct, indirect, and cumulative impacts.

Baseline data

- Sets out in detail the baseline data that is relevant to decisions about project location, design, operation, or mitigation measures. This should include a discussion of the accuracy, reliability, and sources of the data, as well as information about dates surrounding project identification, planning, and implementation.
- Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions.
- Based on current information, assesses the scope of the area to be studied and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences.
- Takes into account current and proposed development activities within the project area but not directly connected to the project.

Legal and institutional framework

- Analyzes the legal and institutional framework for the project, within which the environmental and social assessment is carried out, including the issues set out in ESS1, paragraph 26
- Compares the Borrower's existing environmental and social framework and the ESSs and identifies the gaps between them.
- Identifies and assesses the environmental and social requirements of any co-financiers.

Environmental and social risks and impacts

Takes into account all relevant environmental and social risks and impacts of the project. This will include the environmental and social risks and impacts specifically identified in ESSs2–8, and any other environmental and social risks and impacts arising as a consequence of the specific nature and context of the project, including the risks and impacts identified in ESS1, paragraph 28.

Mitigation measures

- Identifies mitigation measures and significant residual negative impacts that cannot be mitigated and, to the extent possible, assess the acceptability of those residual negative impacts.
- Identifies differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable.
- Assesses the feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of proposed mitigation measures, and their suitability under local conditions; the institutional, training, and monitoring requirements for the proposed mitigation measures.
- Specifies issues that do not require further attention, providing the basis for this determination.

Analysis of alternatives

- Systematically compares feasible alternatives to the proposed project site, technology, design, and operation—including the "without project" situation—in terms of their potential environmental and social impacts.
- Assesses the alternatives' feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of alternative mitigation measures, and their suitability under local conditions; the institutional, training, and monitoring requirements for the alternative mitigation measures.
- For each of the alternatives, quantifies the environmental and social impacts to the extent possible, and attaches economic values where feasible.

Design measures

- Sets out the basis for selecting the particular project design proposed and specifies the applicable EHSGs, or if the ESHGs are determined to be inapplicable, justifies recommended emission levels and approaches to pollution prevention and abatement that are consistent with GIIP.
- Key measures and actions for the Environmental and Social Commitment Plan (ESCP)
- Summarizes key measures and actions and the time frame required for the project to meet the requirements of the ESSs.

Appendices

- List of the individuals or organizations that prepared or contributed to the environmental and social assessment.
- References—set out the written materials, both published and unpublished, that have been used.
- Record of meetings, consultations, and surveys with stakeholders, including those with affected people and other interested parties. The record specifies the means of such stakeholder engagement that were used to obtain the views of affected people and other interested parties.
- Tables presenting the relevant data referred to or summarized in the main text.
- List of associated reports or plans.

Annexure to ToR: Indicative outline and content of an ESMP

An ESMP consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation of a project to eliminate adverse environmental and social risks and impacts, offset them, or reduce them to acceptable levels. The ESMP also includes the measures and actions needed to implement these measures. The Borrower will (a) identify the set of responses to potentially adverse impacts; (b) determine requirements for ensuring that those responses are made effectively and in a timely manner; and (c) describe the means for meeting those requirements.

Mitigation

The ESMP identifies measures and actions in accordance with the mitigation hierarchy that reduce potentially adverse environmental and social impacts to acceptable levels. The plan will include compensatory measures, if applicable. Specifically, the ESMP:

- Identifies and summarizes all anticipated adverse environmental and social impacts (including those involving indigenous people, involuntary resettlement or SEA/SH risks);
- Describes—with technical details—each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate;
- Estimates any potential environmental and social impacts of these measures; and
- Takes into account, and is consistent with, other mitigation plans required for the project (e.g., for involuntary resettlement, Indigenous Peoples, or cultural heritage).
- Includes an SEA/SH action plan proportional to a moderate SEA/SH risk civil works project. SEA/SH Action plan shall include following core risk mitigation measures:
    - Code of Conduct (CoC) for project workers
    - SEA/SH-sensitive GRM with response and info-sharing protocols
    - Service-mapping (for GRM prevention and response actors)
    - Training/sensitizations for workers and project personnel
    - Community consultations with women and sensitizations about SEA/SH and GRM reporting channels

Monitoring

The ESMP identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the environmental and social assessment and the mitigation measures described in the ESMP.48 Specifically, the monitoring section of the ESMP provides (a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and (b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

Capacity development and training

To support timely and effective implementation of environmental and social project components and mitigation measures, the ESMP draws on the environmental and social assessment of the existence, role, and capability of responsible parties on site or at the agency and ministry level.

Specifically, the ESMP provides a specific description of institutional arrangements, identifying which party is responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training).

To strengthen environmental and social management capability in the agencies responsible for implementation, the ESMP recommends the establishment or expansion of the parties responsible, the training of staff, and any additional measures that may be necessary to support implementation of mitigation measures and any other recommendations of the environmental and social assessment.

Implementation schedule and cost estimates

For all three aspects (mitigation, monitoring, and capacity development), the ESMP provides an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the ESMP. These figures are also integrated into the total project cost tables.

Integration of ESMP with project

The Borrower's decision to proceed with a project, and the Bank's decision to support it, are predicated in part on the expectation that the ESMP (either stand alone or as incorporated into the ESCP) will be executed effectively. Consequently, each of the measures and actions to be implemented will be clearly specified, including the individual mitigation and monitoring measures and actions and the institutional responsibilities relating to each, and the costs of so doing will be integrated into the project's overall planning, design, budget, and implementation.

Annexure 3: Labour Management Procedures

REPUBLIC OF BOTSWANA

BOTSWANA POWER CORPORATION

RENEWABLE ENERGY SUPPORT AND ACCESS PROJECT

P181221

Annex 3 to ESMF

LABOUR MANAGEMENT PROCEDURES

9 INTRODUCTION

9.1 **For successful implementation of Renewable Energy Support and Access (RESA) Project, the Government of Botswana recognizes that comprehensive management of the human resources is important in augmenting its positive outcomes. This Labour Management Plan (LMP) covers the direct and contracted workers to be engaged in all the components of the proposed RESA project. This LMP describes the requirements and expectations in terms of compliance, reporting, roles, supervision and training with respect to labour and working conditions, including child labour, discriminatory working conditions etc. The purpose of this LMP is to facilitate the planning and implementation of the project by identifying the main labour requirements, the associated risks, the procedures and resources necessary to address the related labour issues.**

9.2

9.3 **The approach will be assessed as part of the initial screening of environmental and social risks and impacts carried out by the Botswana Power Corporation (BPC)-Project Implementation Unit (PIU). This LMP identifies the labor requirements and risks associated with the project, and sets out the procedures for addressing labour conditions and risks associated with it. The LMP and the procurement documents will inform each other and key aspects of the LMP will be incorporated as contractual obligations of all contractors and subcontractors who will be engaged during implementation of RESA project.**

9.4

9.5 **The LMP has been prepared for the RESA project to ensure compliance with the Botswana Employment Act CAP 47:01 as well as the World Bank's Environmental and Social Framework (ESF), specifically Environmental and Social Standard 2 (ESS 2) on Labor and Working Conditions and Standard 4: Community Health and Safety (ESS4). As per the ESS2, the LMP should be developed and implemented for project related workers, and the BPC has thus prepared this LMP which will be implemented defining the potential project workers, the risks and impacts in relation to issues of labor and working conditions. The primary objective of ESS 2 is to promote sound worker-management relationships, and to enhance the development benefits of a project by treating workers in the project fairly while also providing them with safe and healthy working conditions. Specific objects rooted in this general objective include the following:**

(a) Promotion of safety and health at work;

(b) Promotion of fair treatment, non-discrimination and equal opportunity of project workers;

(c) Protection of project workers, including vulnerable workers such as women, persons with disabilities, youth (of working age, in accordance with Botswana legal provisions and WB's ESF-ESS2) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate.

(d) Prevention of the use of all forms of forced and child labor;

(e) Support of the principles of freedom of association and collective bargaining of project workers in a manner consistent with the laws of Botswana;

(f) Providing employees and contractors with a grievance mechanism for them to raise concerns, complaints and grievances and to receive feedback on the response and any associated corrective action

This LMP thus seeks to achieve the following specific objectives:

- Establishment of arrangements to appropriately manage and protect the Occupational Health and Safety (OHS) and welfare of workers including both employees and contractors and others who may be exposed to risks associated with the RESA project activities;
- Ensuring that employees understand their rights in relation to labour and working conditions;
- Allowing employees to exercise their right to freedom of association and collective bargaining;
- Preventing discrimination in hiring, remuneration, access to training, on the grounds of race, national or social origin, birth, religion, disability, gender, sexual orientation, union membership, political opinions and age and promote equal opportunities;
- Managing disciplinary practices and grievances in a manner that treats affected individuals with respect and dignity and without threat, abuse or ill-treatment;
- Banning the use or support of child, forced or compulsory labour

This LMP is a living document, which is developed by the BPC during RESA project preparation and will be reviewed and updated throughout development and implementation of the project, and adequate measures and procedures to manage negative impacts will be put in place.

9.6

10 1.0 OVERVIEW OF LABOR USE ON THE PROJECT

10.1 1.1 Number of Project Workers:

The LMP applies to all RESA project workers (members of staff within the administrative and operational departments, and outreach program staff) whether full-time, part-time, temporary, and or seasonal workers. The exact number of project workers which will be engaged during implementation of the RESA project (mainly for Components 1 and 2) is currently not known. BPC has implemented medium and low voltage lines upgrading projects as well as mini grid installation projects before, and the number of workers to be involved in the construction phase has therefore been estimated based on BPC's prior experience gained from these similar projects undertaken in Botswana. It is estimated that the approximate total number of workers for the construction of the medium voltage lines would be about 20 to 40 persons, about 40 to 60 for a single mini-grid, and about 10 to 20 for a single solar systems. It is also understood that the main construction crews for the proposed RESA project works will be local workers from the project's sites and other parts of the country.

10.2 1.2 Characteristics of Project Workers:

Implementation of the RESA project is expected to engage different categories of workers for different activities associated with its implementation as defined by ESS2. The ESS2 classifies project workers into the following five categories of project workers: direct workers, contracted workers, migrant workers, primary supply workers, and community labor, and the procedures identified in this LMP apply to all of them.

10.2.1 1.2.1 Direct Workers:

The Direct Workers will be recruited as soon as the project is approved, especially those forming part of the PIU. These are workers that are expected to work directly on the project management team. This team is responsible for overall project management with oversight responsibility on fiduciary (financial management, procurement and disbursement) environmental and social. Components 1, 2, 3 will be implemented by BPC. BPC will form a Project Implementation Unit (PIU) to manage the administration, development, implementation, monitoring and evaluation of the Project. Experience has shown that a strong PIU with adequate capacity in technical, procurement, financial management, environmental and social safeguards, and results monitoring and evaluation is necessary for ensuring smooth and timely implementation of projects. BPC will establish a project implementation unit (PIU) dedicated for the implementation of the project, with all departments relevant to the Project mobilized and coordinated by senior staff who has adequate experience with reporting arrangements that will ensure that senior management of BPC has visibility over the project. The senior staff will also coordinate all project activities and will be the main counterpart of the World Bank during project implementation. The PIU will be resourced with adequate staff having skills in engineering, procurement, project management, accounting, legal, and environmental and social risks management.

Direct workers are current employees of the BPC from different departments who will be assigned to work specifically in the PIU, and will include project managers and supervisors who are BPC employees. They include technical staff, Environment and Social, as well as Health and Safety experts, to be recruited and

included within the PIU, and new employees to be hired at all regions to carry out work in relation to community outreach especially environmental and social safeguard issues.

The estimated number of direct workers would not likely exceed 10 staff from the international projects unit, technical unit, resettlement and permissions unit and legal department. It is estimated that the direct workers would include current BPC employees from different departments who will be assigned to work on this Project and that about10 to 20 new employees would be hired to carry out work in relation to environment and community related activities.

In addition to these permanent staff required for the full duration of the Project, the Project may directly hire other technical staff for limited duration based on specific needs. It is expected that direct workers would also include independent consultants, who are specialized in certain disciplines (training, supervision, and environment and social safeguards and community relations, etc.). These consultants will be hired under individual contracts, on part-time basis, with specific definition of the assigned tasks and responsibilities, and are supported through RESA Component 3, Capacity building, technical assistance and implementation support. All these staff, including consultants, are considered as direct staff of the project under ESS2 and the respective standards/provisions will apply.

The civil servants assigned to serve in the PCMU/PIU of the Project, whether full-time or part-time, will be bound by their existing public sector employment agreement or arrangement, and provisions under this LMP will not apply to such parties. However, their health and safety need as required under ESS2 will be considered, and the measures adopted by the project for addressing occupational health and safety issues will apply to them.

The current safeguards staff of BPC do not have the capacity for implementation of the proposed project. The expected Environmental and Social (E&S) risks and impacts of the proposed project are as a result rated substantial, and to enhance capacity in implementation and knowledge in ESF/ESS, the staffs involved in E&S will regularly attend training to discuss and address emerging issues and challenges in E&S implementation. The project will finance technical assistance and funds allocated under Component 3 will support capacity building of PIU staff. With the Environmental risk rating at Moderate and Social risk rating at Substantial, the overall environmental and social risk rating is Substantial. Potentially adverse environmental and risks and impacts, is primarily associated with the physical civil works supported under Components 1 and 2. BPC has limited in-house Environmental and Social (E&S) capacity for the management of such risks, hence the substantial risk rating. To ensure adequate implementation and monitoring of the project's E&S performance, BPC will be required to appoint dedicated and qualified environmental and social resources for the management, supervision and implementation of the preparation of the E&S instruments. The TA provided under Component 3 will address any required training needs for the dedicated PIU in BPC.

The RESA project will build and strengthen BPC capacity through technical assistances designed under component 3. In addition, the RESA project will prepare a systematic framework under Component 3 to include socio-economic aspects in Renewable Energy (RE) projects, which will enable these aspects to be

effectively mainstreamed in future RE program roll out. Furthermore, building capacity of PIUs in safeguards, procurement planning and oversight is required during the initial stages of preparation and implementation as learned from previous and ongoing projects with the Government of Botswana.

BPC has no experience in implementing Bank-funded projects and there are several aspects of project management in which BPC needs support, including fiduciary and safeguards aspects. Component 3 will be used to hire consultancy services to support the BPC as the case may be on procurement, contract management, safeguards, and other relevant aspects, with the aim to strengthen its capacity in undertaking/managing procurement contracts and safeguards. Specifically, the following consultants are expected to support BPC during project preparation and implementation: (i) technical consultant to carry out the feasibility study of the BESS (study on-going), (ii) consultant to carry out the environmental and social impact assessment of BESS, (iii) consultant to carry out the environmental and social impact assessment of the transmission lines and associated substations, (iii) consultant to support the procurement of BESS, (iv) consultant to support the procurement of STATCOM, (v) consultant to support the procurement of digital upgrades. An owners engineer will also support BPC supervise BESS construction and first years of operation in line with market practice.

There will be program managers from the concerned departments, each for the BESS, STATCOM, SCADA, MDCC, MDMS and grid expansion (lines and substations) activities. Other key staff will include experts in legal affairs, logistics, M&E, risk management, budget, procurement, finance, environment, as well as engineers and technical specialists to evaluate technical proposals, and monitor implementation of all contracts and studies.

10.2.2 1.2.2 Contracted Workers

Contracted workers are people employed or engaged through third parties to perform work related to core functions of the project regardless of the location. These workers will be hired for activities such as design, supervision, supply and installation of construction activities, construction, and commissioning contractor (s) for Components of 1 and 2. The construction sites are distributed over the country, and as such several separate contracts will be awarded with each contractor likely to need engagement of subcontractors. The subcontractors' workforce will also be considered as contracted workers. It is estimated that the Project would engage between 40 and 100 contracted workers.

At this time, it is difficult to estimate the number of contracted workers that will be engaged in the RESA components 1 and 2, as the number of contractors and subcontractors required for the set of project activities. Data for this and other types of workers will be amended in the upcoming updates of this LMP.

10.2.3 1.2.3 Migrant Workers:

It is anticipated that the project will require a combination of local workers from nearby villages and workers from other parts of Botswana and possibly from other countries as domestic migrants and foreign migrants, respectively. The previous experience with the transmission line projects shows that the contractor and

subcontractors will probably hire employees from different regions of Botswana. These domestic migrants are workers who already have experience working on high voltage transmission lines. The foreign migrant workers are likely to be management and technical staff.

The number of migrant workers would depend on decisions made by contractors. Based on previous experience the distribution could be between 1 and 2 percent international, 20 and 30percent from other parts of Botswana, and 40 and 45 percent from the local area. Taking into account the nature of the project workforce (mostly unskilled and semiskilled construction labor) and characteristics of labor force market in Botswana, it is expected that the number of female workers will be low. It is estimated that women would represent between 30 and 50 percent of the workforce, and those would likely be technical (engineering) and/or staff working in the operation offices and camps (office assistants, cooks, etc.). Based on experience under similar projects implemented by BPC, all workers will be over 18 and would likely average ages between 23 and 26 years old.

10.2.4

10.2.5 1.2.4 Primary supply workers

Primary supply workers are people employed or engaged by the borrower's primary suppliers. Primary supply workers will be engaged by BPC's primary suppliers to the project materials such as electric wires, power-poles, solar systems (generators, PV panels, batteries, inverters and charge controllers) protection and control equipment, construction materials, etc. Where primary supply workers are engaged necessary steps will be taken to ensure that no child and/or force labor is involved and OHS requirement for the laborers are followed.

10.2.6 1.2.5 Community Labor

These are people engaged and employed in providing community labor. The project is not likely to engage community labor or security forces. Government civil servants, who will provide support to the Project, will remain subject to the terms and conditions of their existing public sector employment agreement or arrangement. However, ESS2 provisions of health, safety, child and forced labor will apply in this regard.

10.3 1.3 Timing of Labor Requirements

It is expected that the construction phase of the RESA project would last approximately 18 months broken down as follows:

- Component 1 12 months)
- Component 2 (18 months)

It is estimated that there will be at least 2 main teams responsible for the construction of the transmission line, and each made up of teams to complete specific jobs, such as land-clearing, foundation excavation, foundation installation, tower assembly and erection, conductoring (that is, stringing the wires between towers), land restoration, and tree-cutting.

About 30% percent of the workers will be unskilled laborers, with semiskilled and skilled positions such as managers, engineers, forepersons, drivers and equipment operators, and electrical workers.

Unskilled labor will come from local communities, while other workers that include managerial and technical staff are expected to come from other parts of Botswana. Most workers involved in substation construction will be unskilled, at least in the early stages. Once the land is cleared and foundations are installed, however, more skilled labor will install the electrical equipment.

10.4 2.0 ASSESSMENT OF KEY POTENTIAL LABOR RISKS

10.5 2.1 Project activities

BPC as an implementing agency, will play a key role in the implementation of RESA project Component 1: Grid upgrades to enable integration and management of VRE including its Sub-component 1.2 that consists of the installation of STATCOM at four substations: Francistown 1, Legothwane, Segoditshane 1 and Ramotswa (132 kV networks), and Component 2: Rural electrification. Construction of this type of projects would usually include the following activities:

- clearance of right of way;
- construction of access roads (wherever required),
- land-clearing and construction of foundation;
- soil stabilization;
- erection of poles/towers,
- cutting of trees and high vegetation;
- demolition of buildings; and
- stringing of conductors
- Reinstatement and revegetation of impacted areas.

10.6 2.2 Key Labor Risks

The potential key labor risks for these RESA Components that have been identified by the environmental and social assessment include health and safety risks related to the construction activities of transmission lines such as exposure to physical, chemical and biological hazards during construction activities and as well as exposure to occupational health and safety hazards. These would include the following:

i. workplace accidents/injuries/inappropriate use of personal protective equipment (PPE)
ii. working at heights,
iii. inadequate payment,
iv. likely incidents of child labor or forced labor,
v. risks of Gender-Based Violence (GBV),
vi. extended working hours without pay,

vii. community health and safety issues, including community exposure to hazardous materials (production of wastes from used solar panels and batteries/ both lead acid and lithium ion);
viii. communicable diseases,
ix. inadequate awareness and implementation of occupational health and safety requirements,
x. discriminatory labor recruitment.
xi. trip and fall hazards,
xii. exposure to noise, dust and falling objects,
xiii. exposure to hazardous materials and electrical hazards from the use of tools and machinery
xiv. Exposure to chemicals (as paints, solvents, refrigerant oil for transformers and switches, lubricants, and fuels)
xv. Chain saws and treefall during timber cutting
xvi. Traffic accidents
xvii. Lifting of heavy structures
xviii. Environmental hazards (snakes, wasps, bees, etc.)
xix. Steel erection (towers) hazards.

In accordance to ESS2, due to the hazardous nature or project work involving use of hazardous materials and the Botswana Employment Act (CHAPTER 47:01 EMPLOYMENT), Section 108, sub section 1 stipulates that young persons should not be involved in any work that endangers their lives or health. Given the hazardous nature of the project work, the project will not recruit any labor of under 18 years of age.
To manage the risk that child and/ or young worker under engagement in relation to works, the project will carry out important steps like documentation and verification of age to prevent employment or engagement of child labor. Hence, obtaining written confirmation from the applicant of their age, and where there is any reasonable doubt as to the age of the applicant, requesting and reviewing available documents to verify age (such as a birth certificate, national identification card, passport, or other document or community verification demonstrating age) will be undertaken prior to the employment or engagement of a project worker and kept on file.

Discrimination is the other potential risk under the proposed RESA project. These include potential inappropriate treatment or harassment of project workers related, for example, to gender, age, disability, ethnicity, or religion, potential exclusion or preferences with respect to recruitment, hiring, termination of employment, working conditions, or terms of employment made on the basis of personal characteristics unrelated to inherent work requirements, in training and development provision. In the proposed RESA project, all forms of discrimination are unacceptable as per the Botswana Employment Act and ESS2 and it supports equal opportunities for women and men, with emphasis on equal criteria for selection, remuneration, and promotion, and equal application of those criteria.

Measures to prevent harassment of project workers, including sexual harassment, in the workplace will be put into place. These will include signing of Codes of Conduct (CoC) by project employees, and project protocol briefings will address this, and include session on SEA/SH awareness training, in the training and capacity building interventions. Moreover, focus will be given on the sharing of key messages with project

staff. It is expected that most of the project labor requirements could be fulfilled from local employment except few skilled labors. Hence, the potential for influx of immigrant labor to the proposed project areas is expected to be relatively low. However, the project needs specific requirements to manage risks associated with labor influx, related to interaction between project workers and local communities. In such a way, Gender-Based Violence (GBV) will be managed through contractual requirements, code of conduct and training programs.

To mitigate GBV risks, contractor/s will be required to implement measures to manage GBV risks at project level. This will among others, be through assigning of a GBV specialist who will be responsible to manage the risks and that works in close contact with Women, Youth and Children Affairs Offices, to put in place administrative measures to:

- prevent and minimize GBV,
- prepare an administrative measures (for example through Code of Conduct) to prevent Sexual Harassment in the workplace and acknowledging zero tolerance for GBV
- strengthen GRM and other monitoring mechanisms to ensure safe and ethical reporting systems, and
- to alert cases of GBV and assure them to access adequate response.

BPC shall ensure that an area/ site specific assessment of GBV/SEA/SH risks is undertaken within subsequent project ESIAs/ESMPs and that prevention and response measures are put in place. Concerning community health and safety, construction/ installation companies will actively collaborate and consult with communities in promoting the understanding, and methods for the implementation of community health and safety, including HIV/ AIDS and other communicable diseases prevention and informing communities about the requirements of workers' Codes of Conduct. Contractors will also provide project workers with training on respectful relations with communities, including on health and safety practices. There will be a need to develop and implement a Health, Safety and Environmental (HSE) Plan in line with World Bank Group Environment, Health and Safety Guidelines (EHSG) for construction activities. The BPC will remain committed to provide awareness/orientation sessions on OHS/ Community health and safety, STD/ HIV/AIDS, GBV/SEA/SH, GRM, etc. related aspects aimed at staff from PIU, private sector, cooperatives, contractors of civil works, etc.

Occupational Health and Safety (OHS) related risks might be expected during construction activities of the RESA project components. Thus, will be mitigated with the use of personal protective equipment (PPEs) and rigorous and regular occupational H&S trainings and awareness raising activities, including training on the appropriate use of PPE at work sites. There will be Workers' Grievance Redress Mechanism for labor issues, drawing from national law and procedures. Worker accommodation and influx will need to be managed in line with ESS2 and ESS4. To ensure health and safety of workers during the construction and operational phases of the project, the Health, Safety and Environmental (HSE) plan shall be prepared and tailored to each ESMP of the subprojects.

10.7 3.0 BRIEF OVERVIEW OF LABOR LEGISLATION: TERMS AND CONDITIONS

This section sets out terms and conditions that apply for workers as per the Government of Botswana Employment Act that relates to items set out in ESS2, paragraph 11. The Government of Botswana Employment Act serves as a comprehensive legal framework governing employment matters. Its primary objectives are to promote productive, gainful and decent employment for Batswana. Key goals of this act include the following:

- Creation of employment opportunities that lift Batswana out of poverty
- Secure employment that respects fundamental human rights and worker rights
- Contribution towards reducing income inequality

10.7.1 3.1 Minimum Wages

According to the Employment Act, the relationship between the employer and employee is based on a contract, whereby the employer is obliged to pay wages while an employee has a duty to work for the employer. The Employment Act regulates minimum wages in Botswana. The minimum wages can be fixed for industries that include building, construction, road transport, manufacturing, domestic services, security guards employed by security companies, etc. Labour Officers ensure compliance with the provisions of the Employment Act, 2010 including the provisions on minimum wages and wage payment. A contract of employment may fix periods concerning when wages are payable. However, no wage period is to exceed one month and with regards to casual employees, no wage period can be less than one week. Where the contract of employment is silent as to the wage period, the period is one month.

10.7.2 3.2 Working Hours and Breaks

The Act states that the ordinary working hours shall be eight hours in any one day and forty-eight hours in any one week. According to this Act if the working week is five (5) days, then the working day may not be more than nine (9) hours and a period of rest totaling one (1) hour should be provided during the day. If the working week is more than five (5) days, then the working day may not be more than eight (8) hours or more than forty eight (48) hours in a week. A break of at least thirty (30) minutes must be given after five (5) consecutive hours of work. A rest day of not less than twenty four (24) consecutive hours, normally including Sunday, must be given in every period of seven (7) consecutive days. Shift workers must be given a rest day of at least thirty (30) consecutive hours in a period of seven (7) consecutive days.

10.7.3 3.3 Overtime Work

The Act allows overtime work. An employee may not work more than fourteen (14) hours overtime in any one week. For normal days of work overtime is calculated at one and a half times the basic hourly rate. For rest days or paid public holidays overtime is calculated at double the hourly rate.

10.7.4 3.4 Annual Leave

The right to annual leave is guaranteed to all employees under the Botswana Employment Act. A minimum of fifteen (15) working days of paid leave is given per year. At least eight (8) leave days must be taken within six (6) months of the leave earning period. The remaining days may be accumulated for up to three (3) years

when they must be taken. If the contract is terminated by either party the employee must be paid for any outstanding or accumulated leave.

10.8 4.0 BRIEF OVERVIEW OF LABOR LEGISLATION: OCCUPATIONAL HEALTH AND SAFETY

Even though there are Occupational Health and Safety (OHS) objectives and requirements set out in ESS2 paragraphs 24-30, implementation and enforcement of these provisions are likely to be generally weak mainly due to inadequate backup of Botswana OHS legal framework as currently there is no occupational health and safety law. Even though there is no dedicated legislation solely focused on workplace safety and health in Botswana, the country has made strides in occupational health and safety, and the process of developing its National Occupational Safety and Health Profile is in progress.

The BPC-PIU will therefore need to ensure that all applicable provisions are implemented and contractually enforceable by ensuring appropriate clauses and provisions are included in all relevant contracts. In situations like this, the ESS2 will apply because in case of variations between the national legislations, regulations and the World Bank Environment and Social Standards, the more stringent provision will prevail.

The BPC-PIU will identify all potential hazards to project workers' health and life at the design stage of the RESA project. Under the Botswana **Employment Act**, employees have several rights including safe working conditions. Thus, employers are obliged to provide employees with a safe and healthy working environment. Employers are therefore obliged to take the necessary measure to safeguard adequately the health and safety of the workers. Contractors implementing this project will as a result develop and implement procedures to establish and maintain a safe working environment, including that workplaces, machinery, equipment and processes under their control are safe and without risk to health. This will include use of appropriate measures related to chemical, physical and biological substances and agents. Whenever avoidance of health and safety hazards is not possible, appropriate protective measures will be provided. These measures include controlling the hazard at source using protective solutions and providing adequate PPE at no cost to the project worker.

Measures that must be taken include, but are not limited to the following:

- controlling access to hazardous workplaces
- informing workers of the potential risks their jobs may present to their health and safety
- Complying with the occupational health and safety requirements
- Taking appropriate steps to ensure that workers are properly instructed and notified concerning the hazards of their respective occupations; and assigning safety officer
- training and information campaigns as well as adoption of relevant preventive measures
- Providing workers with protective equipment, clothing and other materials and instructing them of their use;
- Organizing and managing health and safety programs, providing emergency care and services, and responding to accidents
- Registering employment accidents and occupational diseases and reporting same to the labor inspection service;

- Arranging, according to the nature of the work, at own expense for the medical examination of newly employed workers and for those workers engaged in hazardous work, as may be necessary with the exception of HIV/AIDS unless and otherwise the country has obligation of international treaty to do so;
- Ensuring that the workplace and premises of the undertaking do not pose threats to the health and safety of workers;
- Taking appropriate precautions to ensure that all the processes of work in the undertaking shall not be a source or cause of physical, chemical, biological, ergonomic and psychological hazards to the health and safety of the workers
- Allowing employees to take part in consultation process regarding health and safety issues, and to provide recommendation and raise concerns related to risks and hazards

Obligations of workers include the following:

- Co-operate in the formulation of work rules to safeguard the workers' health and safety, and implement same;
- Inform forthwith to the employer any defect related to the appliances used and incidents of injury to health and safety of workers that they are aware of in the undertaking;
- Report to the employer any situation which they may have reason to believe could present a hazard and which they cannot prevent on their own, and any incident of injury to health which arises in the course of or in connection with work;
- Make proper use of all safety devices and other appliances furnished for the protection of their health and safety or for the protection of their health and safety of others;
- Observe all health and safety instructions issued by the employer or by the Competent Authority
- Not Interfere with, remove, displace, damage or destroy any safety devices or other appliances furnished for their protection or the protection of others; or
- Obstruct any method or process adopted with a view to minimizing occupational hazard

Employer-employee occupational safety and health collaborations will be through the health and safety personnel (that should be at each work place), which empower the worker with the ability to manage the health and social consequences from the work being done. In addition, there will be a need for the creation of public awareness, which will further empower all persons in the workplace to safeguard their own health through training and workplace publicity-campaign (mainly through signage) to generate social consciousness of potential occupational safety and health hazards.

Contractors will assign health and safety officer(s) at construction sites. Project workers will receive OHS training at the beginning of their employment and on a regular basis thereafter. Training will cover the relevant aspects of OHS associated with daily work, including the ability to stop work without imminent danger and respond to emergency situations. Training records will be kept on file. These records will include a description of the training, the number of hours of training provided, training attendance records, and results of evaluations. Contractors will develop and implement reporting system for any accidents, diseases and incidents. Every accident will be reported to the employer, investigated and relevant measures will be

designed to avoid the accident in the future. Also remedies for adverse impacts such as occupational injuries, disabilities and diseases will be provided.

10.9 5.0 RESPONSIBLE STAFF

The summary of responsibility with respect to labor issues is appended below:

10.9.1 5.1 Overall Management

The direct workers will be managed by the PIU whereas the contract and primary supply workers will be managed by their respective companies, contractors/subcontractors, etc., engaged to conduct implementation of the activities under the RESA project components 1 and 2.

The PIU will have the overall responsibility to oversee all aspects of the implementation of the RESA project. The PIU will therefore be responsible for management of workers' issues in the field, and will be required to adopt and implement good labor management practices. The Social/Environmental Specialist will be the focal point of overall management of labor issues.

10.9.2 5.2 Occupational Health and Safety (OHS)

Companies, contractors/subcontractors will ensure that respective company's code of conduct are followed to ensure harmonious personnel relation at sites with focus on safe working conditions and access to basic facilities for the workforce deployed at site and the workers. Safety, Health and Environment Officers will ensure day-to-day compliance with acceptable safety measures and will record safety incidents. Minor incidents will be reported to PIU on a monthly basis, while serious incidents will be reported immediately. Minor incidents will be reflected in the quarterly reports to the World Bank (WB). The PIU is responsible to promptly notify the World Bank of any incident or accident related to the project within 48 hours, which will be followed by formal investigation towards a root-cause analysis within 14 days and identification of a set of corrective actions.

10.9.3 5.3 Labor and Working Conditions

Contractors will comply with the provision of labor conditions including non-discrimination, wages, safer working conditions etc. The PIU will carry out periodic monitoring to ensure that labor working conditions are met as per national legislation.

10.9.4 5.4 Management of Grievances and GBV /SEAH

A Grievance Redress Mechanism (GRM) has been detailed with this LMP and the PIU will be required to abide by its provisions. The Social/Environmental Specialists will review records on a monthly basis. The PIU will keep abreast of resolutions and reflect in quarterly reports to the World Bank.

The PIU will be fully responsible to ensure that their personnel know and are trained on their obligations with respect to avoidance of any form of GBV/SEAH, safe disposal of waste. It will be the responsibility of contractors to monitor and report on these issues, but the PIU will also have a monitoring team to ensure the same.

10.9.5 5.5 Additional Training

The PIU and contractors will be required to ensure that the assigned personnel are adequately trained and briefed with overall safety arrangement, use of equipment, GRM procedure, and working conditions of the project. Training on use of PPE, hygiene facilities and behavior, GBV/SEAH and preparation and obtaining signed code of conduct are also their responsibility. Verification, Monitoring and Evaluation (M&E) will be an integral part of the project under the responsibility of the PIU.

10.10 6.0 AGE OF EMPLOYMENT

In the Botswana Employment Act, it is mentioned that no child shall be employed to work in any occupation. Section 105 of the Employment Act prohibits the employment of children under the age of 15 in any capacity whatsoever. The World Bank strictly prohibits child labor and it is clearly mentioned that the minimum age of 18 years is required for anyone to get employment in such works. According to the World Bank standards and guidelines, the minimum age of employment for projects of this nature will be 18 years. To ensure compliance, all employees will be required to produce national identification cards, a birth certificate, or a passport as proof of their identity and age. If anyone employs a person under the age of 18 years, measures to address the same will be taken by the PIU. Where a child under the minimum age is discovered working on the project, measures will be taken to immediately terminate the employment or engagement of the child in a responsible manner, considering the best interest of the child.

10.11 7.0 GRIEVANCE MECHANISM

Besides the grievance mechanism for the RESA project, a separate GRM will be established for the project workers. Workers will be able to lodge their complaints relating to their work environment or conditions. Management will treat grievances seriously and take timely and appropriate action in response. Information about the existence of the grievance mechanism will be readily availed to all project workers (direct and contracted) through notice boards, and other means as needed. Different ways in which workers can submit their grievances will be allowed, such as submissions in person, by phone, text message, mail and email and suggestion boxes. Contract workers will be informed of the grievance mechanism at the induction session prior to the commencement of work.

This workers GRM is not same as the grievance mechanism to be established for project affected stakeholders. The PIU and other responsible project management will treat grievances seriously and take timely and appropriate action in response. BPC will require contractors to develop and implement a grievance mechanism for their workforce including sub-contractors, prior to the start of design stage. The construction contractors will prepare their labor management procedure before the start of civil works, which will also include detailed description of the workers grievance mechanism.

A worker or any person who has any complaint or grievance will have the right to present it and get proper response. The grievance redress mechanism for addressing and managing workplace and employment related conflicts or complaints as well as gender-based violence (GBV), SEA/SH are crucial for the RESA project. Designed in such a way that to address concerns promptly, using an understandable and transparent process ESS2, paragraphs 26 and 27 that provides timely feedback to those concerned in a language they understand, without any retribution, and will operate in an independent and objective manner. The workers will be informed of the grievance mechanism at the time of recruitment and the measures put in place to protect them against reprisal for its use. Measure will be put in place to make the grievance mechanism easily accessible to all such project workers. The GRM will be described in the induction trainings, which will be provided to all project workers.

The mechanism for workers' GRM will be based on the following principles:

- channel to receive grievances such as comment/complaint form, suggestion boxes, email, a telephone hotline, that might also be anonymous;
- Stipulated timeframes to respond to grievances;
- A register to record and track the timely resolution of grievances;
- A responsible section/wing/committee to receive, record and track resolution of grievances.
- Handling of grievances will be objective, prompt and responsive to the needs and concerns of the aggrieved workers.
- The process will be transparent and allow workers to express their concerns and file grievances
- There will be no discrimination against those who express grievances
- All grievances will be treated confidentially, and individuals who submit their comments or grievances may request that their names be kept confidential.
- Anonymous grievances will be considered, and anonymous grievances will be treated equally as other grievances, whose origin is known.

A PIU representative will monitor the records and resolution of grievances, and report these in PIU's monthly progress reports. Where the aggrieved workers wish to escalate their issue or raise their concerns anonymously and/or to a person other than their immediate supervisor, the workers may raise their issue with the PIU. It should be emphasized that this GRM is not a substitution to legal system for receiving and handling grievances. Contractors will be required to identify focal points and communication channels for lodging grievances, and workers shall not be victimized in any way for reporting a grievance.

10.12 8.0 CONTRACTOR MANAGEMENT

This section sets out references to the contractual provisions and measures and procedures that will be put in place by contractors to manage and monitor relevant health and safety issues. As part of the process to select design and build contractors who will engage contracted workers, the PIU (including safeguards staffs) and/or the supervision consultant may review the following information:

- Business licenses, registrations, permits, and approvals;
- Documents relating to a labor management system, including OHS issues, for example, labor the prepared management procedures;
- Identification of labor management, safety, and health personnel, their qualifications, and certifications;
- Workers' certifications/permits/training to perform contracted work;
- Records of safety and health violations, and responses;
- Accident and fatality records and notifications to hierarchical authorities;
- Records of legally required worker benefits and proof of workers' enrollment in the related programs;
- Worker payroll records, including hours worked and pay received;
- Identification of safety committee members and records of meetings; and
- Copies of previous contracts with contractors and suppliers, showing inclusion of provisions and terms reflecting ESS2.

The contracts with selected contractors will include provisions related to labor and occupational health and safety, as provided in the World Bank 2018 Standard Procurement Documents which include language referring to labor and occupational, health and safety requirements of ESS2 that must be complied with. The Contractor (s) shall be required to hire a qualified and experienced OHS Specialist and prepare detailed OHS plan for the management of labor/OHS issues. In addition, the Contractor shall develop a TOR for recruiting an OHS specialist, subject to review and approval by the safeguard team of the PIU.

The PIU will be responsible for monitoring the performance of Contractor(s) in relation to contracted workers. In case a Supervision and Monitoring Consultant or Engineer is hired by the PIU, the Consultant may assume some of these responsibilities on behalf of the Employer. The monitoring may include periodic audits, inspections of work sites, labor management records and reports compiled by contractors. Contractors' labor management records and reports may include:

a. a representative sample of employment contracts or arrangements between third parties and contracted workers;
b. records relating to grievances received and their resolution;
c. reports relating to safety inspections, including fatalities and incidents and implementation of corrective actions;
d. records relating to incidents of non-compliance with national law; and
e. records of induction for newly hired employees, and training provided for contracted workers to explain labor and working conditions and OHS for the project.

10.13 9.0 COMMUNITY WORKERS

The RESA project is not expected to use any community workers, as defined by ESS2. However, if community workers are engaged necessary steps will be taken to ensure that no child and/or force labor is involved and OHS requirement for the laborers are followed.

10.14 10.0 PRIMARY SUPPLY WORKERS

Where a significant risk of child or forced labor or serious safety issues in relation to primary suppliers has been identified, this section sets out the procedure for monitoring and reporting on primary supply workers.

The primary suppliers to the transmission line shall be companies that manufacture transmission towers and conductors. These sectors are not known to involve significant risks of child labor and forced labor. If fill material is needed, then local quarries also would be considered from primary suppliers. For the substation, the primary suppliers would be companies that manufacture electrical switching equipment, transformers, and other major electrical equipment. These sectors are also not known to involve significant risks of child labor and forced labor. Except for the local quarries, it is expected, that the primary suppliers will be large scale international companies. In instances where local suppliers would be engaged, contractors shall be required to carry out due diligence procedure to identify if there are significant risks that the suppliers are exploiting child or forced labor or exposing workers to serious safety issues. In instances where foreign suppliers would be contracted, contractors will be required to inquire during their procurement process whether the supplier has been accused or sanctioned for any of these issues and also on their corporate requirements related to child labor, forced labor, and safety.

If there are any risks related to child and forced labor, and safety identified, the PIU will prepare the procedures to address these risks. The PIU will track suppliers' performance to help inform whether procedures and mitigation measures are being appropriately implemented and provide feedback on performance and any new areas of risk. Where there is a significant risk of child labour, forced labour, serious safety issues related to primary supply workers, the PIU will require the relevant primary supplier to introduce procedures and mitigation measures to address such issues. Such procedures and mitigation measures will be reviewed periodically to ascertain their effectiveness.

Annexure 4: Chance Find Procedure

Chance Find Procedures outline, step by step, what needs to be done when Projects come across archaeological sites, historical sites, remains and objects, including graveyards or individual graves during excavations or construction. This procedure responds to ESS 8. This procedure addresses tangible cultural resources which are defined as movable or immovable objects, sites, structures that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Tangible cultural resources may be located in urban or rural settings and may be above or below the ground.

CHANCE FIND PROCEDURES

If the contractor(s) discovers archaeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavations or construction, the implementers will carry out the following steps:

- Stop the construction or excavation activities in the area of the chance find;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities, or the Department of Culture take over;
- Notify the Social Safeguards Specialist of PIU or the Project Manager who in turn will notify the responsible officer in the Departments of Culture immediately (within 24 hours or less);
- Responsible officer from the Department of Culture would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archaeologists. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;
- Decisions on how to handle the finding shall be taken by the responsible authorities at the Department of Culture. This could include changes in the layout (such as when finding an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage;
- Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the Department of Culture to DoE; and
- Construction work could resume only after permission is given from the responsible local authorities or department responsible for culture concerning safeguard of the heritage.

Annexure 5: World Bank Requirements for Incident Reporting

The Bank will be duly notified of any EHS related incidents associated with the project, after which the necessary documentation and evidence with be prepared with guidance from the Bank.

Where incidents related to Gender-Based Violence, Sexual Abuse or Harassment, specialist formats are provided in the ESIRT guidance from the World Bank.

Where required Incidents will be recorded and reported to the applicable authorities in accordance with the process set out in the relevant regulations

To be completed and submitted to the World Bank within 24 hours

B1: Incident Details			
Date of Incident:	**Time:**	**Date Reported to PIU:**	**Date Reported to WB:**
Reported to PIU by:	**Reported to WB by**:	**Notification Type**: Email/'phone call/media notice/other	
Full Name of Main Contractor:		**Full Name of Subcontractor**:	

B2: Type of incident (please check all that apply, see definitions)
Fatality Lost Time Injury Displacement Without Due Process Child Labor Acts of Violence/Protest Disease Outbreaks Forced Labor Unexpected Impacts on heritage resources Unexpected impacts on biodiversity resources Environmental pollution incident Dam failure Other

B3: Description/Narrative of Incident
Please replace text in italics with brief description, noting for example: • *What is the incident?* • *What were the conditions or circumstances under which the incident occurred (if known)?* • *Are the basic facts of the incident clear and uncontested, or are there conflicting versions? What are those versions?* • *Is the incident still ongoing or is it contained?* • *Have any relevant authorities been informed?*

B4: Actions taken to contain the incident			
Short Description of Action	**Responsible Party**	**Expected Date**	**Status**

For incidents involving a contractor:
Have the works been suspended (for example, under GCC8.9 of Works Contract)? Yes ☐; No ☐; Trading name of Contractor (if different from B1): Please attach a copy of the instruction suspending the works.

B5: What support has been provided to affected people

Following investigation, where required, fill in and submit to the World Bank

C1: Investigation Findings
Please replace text in italics with findings, noting for example: • *where and when the incident took place,* • *who was involved, and how many people/households were affected,* • *what happened and what conditions and actions influenced the incident,* • *what were the expected working procedures and were they followed,* • *did the organization or arrangement of the work influence the incident,* • *were there adequate training/competent persons for the job, and was necessary and suitable equipment available,* • *what were the underlying causes; where there any absent risk control measures or any system failures,*

C2: Corrective Actions from the investigation to be implemented (To be fully described in Corrective Action Plan)

Action	**Responsible Party**	**Expected Date**

C3a: Fatality/Lost time Injury information

Immediate cause of fatality/injury for worker or member of the public (please check all that apply, see definitions):

1. Caught in or between objects 2. Struck by falling objects 3. Stepping on, striking against, or struck by objects 4. Drowning 5. Chemical, biochemical, material exposure 6. Falls, trips, slips 7. Fire & explosion

8. Electrocution 9. Homicide 10. Medical Issue 11. Suicide 12. Others

***Vehicle Traffic:* 13. Project Vehicle Work Travel 14. Non-project Vehicle Work Travel**

15. Project Vehicle Commuting 16. Non-project Vehicle Commuting 17.Vehicle Traffic Accident (Members of Public Only) ☐

Name	Age/DOB	Date of Death/Injury	Gender	Nationality	Cause of Fatality/Injury	Worker (Employer)/Public

C3b: **Financial Support/Compensation Types (To be fully described in Corrective Action Plan template)** **1. Contractor Direct 2. Contractor Insurance 3. Workman's Compensation/National Insurance** **4. Court Determined Judicial Process 5. Other 6. No Compensation Required**			
Name	**Compensation Type**	**Amount (US$)**	**Responsible Party**

C4: Supplementary Narrative

Definitions:

The following are incident types to be reported using the environmental and social incident response process:

Fatality: Death of a person(s) that occurs within one year of an accident/incident, including from occupational disease/illness (e.g., from exposure to chemicals/toxins).

Lost Time Injury: Injury or occupational disease/illness (e.g., from exposure to chemicals/toxins) that results in a worker requiring 3 or more days off work, or an injury or release of substance (e.g., chemicals/toxins) that results in a member of the community needing medical treatment.

Acts of Violence/Protest: Any intentional use of physical force, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, deprivation to workers or project beneficiaries, or negatively affects the safe operation of a project worksite.

Disease Outbreaks: The occurrence of a disease in excess of normal expectancy of number of cases. Disease may be communicable or may be the result of unknown ethology.

Displacement Without Due Process: The permanent or temporary displacement against the will of individuals, families, and/or communities from the homes and/or land which they occupy without the provision of, and access to, appropriate forms of legal and other protection and/or in a manner that does not comply with an approved resettlement action plan.

Child Labor: An incident of child labor occurs: (i) when a child under the age of 14 (or a higher age for employment specified by national law) is employed or engaged in connection with a project, and/or (ii) when a child over the minimum age specified in (i) and under the age of 18 is employed or engaged in connection with a project in a manner that is likely to be hazardous or interfere with the child's education or be harmful to the child's health or physical, mental, spiritual, moral or social development.

Forced Labor: An incident of forced labor occurs when any work or service not voluntarily performed is exacted from an individual under threat of force or penalty in connection with a project, including any kind of involuntary or compulsory labor, such as indentured labor, bonded labor, or similar labor-contracting arrangements. This also includes incidents when trafficked persons are employed in connection with a project.

Unexpected Impacts on heritage resources: An impact that occurs to a legally protected and/or internationally recognized area of cultural heritage or archaeological value, including world heritage sites or nationally protected areas not foreseen or predicted as part of project design or the environmental or social assessment.

Unexpected impacts on biodiversity resources: An impact that occurs to a legally protected and/or internationally recognized area of high biodiversity value, to a Critical Habitat, or to a Critically Endangered or Endangered species (as listed in IUCN Red List of threatened species or equivalent national approaches) that was not foreseen or predicted as part of the project design or the environmental and social assessment. This includes poaching or trafficking of Critically Endangered or Endangered species.

Environmental pollution incident: Exceedances of emission standards to land, water, or air (e.g., from chemicals/toxins) that have persisted for more than 24 hrs or have resulted in harm to the environment.

Dam failure: A sudden, rapid, and uncontrolled release of impounded water or material through overtopping or breakthrough of dam structures.

Other: Any other incident or accident that may have a significant adverse effect on the environment, the affected communities, the public, or the workers, irrespective of whether harm had occurred on that occasion. Any repeated non-compliance or recurrent minor incidents which suggest systematic failures that the task team deems needing the attention of Bank management.