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BOSA

TRANSMISSION PROJECT

BOSA TRANSACTION ADVISORY SERVICES

DRAFT SCOPING REPORT

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Document prepared by

Aurecon South Africa (Pty)

Reg No 1977/003711/07

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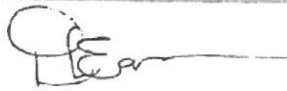

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Document control						
Report title	<i>Draft Scoping Report – BOSA Transaction Advisory Services: Draft Scoping Report – BOSA Transaction Advisory Services</i>					
Document ID	112581REP001	Project number	112581112581			
File path	P:\Projects\112581 Botswana-South Africa (BOSA) Transm\03 PRJ Del\6 REP\07 Environment\5. DSR\Report					
Client	SAPP CCSAPP CC	Client contact	Mr. Alison Chikova			
Rev	Date	Revision details/status	Author	Reviewer	Verifier (if required)	Approver
0	17 June 2017	Draft Scoping Report	Wendy Mlotshwa	Diane Erasmus	Nigel Waters	
1	26 June 2017	Draft Scoping Report	Wendy Mlotshwa	Diane Erasmus	Nigel Waters	
Current revision	1					

APPROVALS

Document Title: Draft Scoping Report – BOSA Transaction Advisory Services: Draft Scoping Report – BOSA Transaction Advisory Service.

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Legislative requirement with reference to the relevant section of this report

Section	Content	Reference in report
App 2(a)	(i) Details of the EAP who prepared the report; and	Section 1.2.2
	(ii) Details of the expertise of the EAP, including a curriculum vitae.	Annexure A
Reg 8(a)	The name of applicant and consulting team	Section 1.2.1 & 1.2.3
2 (b)	The location of the activity, including:	Section 4.1
	(i) The 21 digit Surveyor General code of each cadastral land parcel;	Annexure D.4 & D.5
	(ii) Where available, the physical address and farm name;	
	(iii) Where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section 4.1
2 (c)	A plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is-	Section 1.1 Annexure D.1 & D.2
	(i) A linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or	Section 4.1 Annexure D.4 & D.5
	(ii) On land where the property has not been defined, the coordinates within which the activity is to be undertaken;	
2 (d)	A description of the scope of the proposed activity, including:	Section 2.3.3
	(i) All listed and specified activities triggered;	
	(ii) A description of the activities to be undertaken, including associated structures and infrastructure;	Section 4.2 & 4.3
2 (e)	A description of the policy and legislative context within which the development is proposed, including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;	Section 2.3
2 (f)	A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section 4.4
2 (h)	A full description of the process followed to reach the proposed preferred activity, site and location within the site, including:	Section 5 Annexure F
	(i) Details of all the alternatives considered;	
	(ii) Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Section 7 Annexure E
	(iii) A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	Annexure E.7
	(iv) The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 6
	(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and	Section 6 & 8.5.4

Section	Content	Reference in report
	(cc) can be avoided, managed or mitigated;	
	(vi) The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	Section 8.5
	(vii) Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 6 & 8.5.4
	(viii) The possible mitigation measures that could be applied and level of residual risk;	Section 8.5.4
	(ix) The outcome of the site selection matrix;	Section 5.2.1 Annexure F
	(x) If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and	N/A
	(xi) A concluding statement indicating the preferred alternatives, including preferred location of the activity;	Section 5.3 Annexure F
2 (i)	A plan of study for undertaking the environmental impact assessment process to be undertaken, including:	Section 8
	(i) A description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;	
	(ii) A description of the aspects to be assessed as part of the environmental impact assessment process;	
	(iii) Aspects to be assessed by specialists;	
	(iv) A description of the proposed method of assessing the environmental aspects, including aspects to be assessed by specialists;	
	(v) A description of the proposed method of assessing duration and significance;	
	(vi) An indication of the stages at which the competent authority will be consulted;	
	(vii) Particulars of the public participation process that will be conducted during the environmental impact assessment process; and	
	(viii) A description of the tasks that will be undertaken as part of the environmental impact assessment process;	
	(ix) Identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	
2 (j)	An undertaking under oath or affirmation by the EAP in relation to:	Annexure B.1 & B.2
	(i) The correctness of the information provided in the report;	
	(ii) The inclusion of comments and inputs from stakeholders and interested and affected parties; and	
	(iii) Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;	
2 (k)	An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;	
2 (l)	Where applicable, any specific information required by the competent authority; and	Annexure C.1 & C.2
2 (m)	Any other matter required in terms of section 24(4)(a) and (b) of the Act.	N/A

LIST OF ACRONYMS

AfDB	African Development Bank
BID	Background Information Document
BOSA	Botswana-South Africa
CA	Competent Authority
CBD	Convention on Biological Diversity
DBSA	Development Bank of Southern Africa
DoE	Department of Energy
DEA	Department of Environmental Affairs
DSR	Draft Scoping Report
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EHS	Environmental, Health, and Safety
EIA	Environmental Impact Assessment
EIAA	Environmental Impact Assessment Act
EIA*	Early Iron Age
EIR	Environmental Impact Report
EPFI	Equator Principles Financial Institutions
ESA	Early Stone Age
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
GEF	Global Environmental Fund
IBA	Important Bird Areas
IFC	International Finance Corporation
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
LIA	Late Iron Age
MIA	Middle Iron Age
MSA	Middle Stone Age
NEES	National Energy Efficiency Strategy
NEMA	National Environmental Management Act (No. 107 Of 1998)
NWA	National Water Act (Act No. 36 of 1998)
POPs	Persistent Organic Pollutants



PoS	Plan of Study
READ	Rural, Environment and Agricultural Development
SADC	Southern African Development Community
SAPP	Southern African Power Pool
UNCCD	UN Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
WMA	Water Management Area
WULA	Water Use Licence Application

TERMINOLOGY

Alternatives	<p>in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to the-</p> <ul style="list-style-type: none">(a) property on which or location where the activity is proposed to be undertaken;(b) type of activity to be undertaken;(c) design or layout of the activity;(d) technology to be used in the activity; or(e) operational aspects of the activity; <p>and includes the option of not implementing the activity;</p>
Cumulative impacts	<p>relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities.</p>
Environmental Impact Assessment	<p>means a systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes basic assessment and S&EIR.</p>
Interested and Affected Parties	<p>in relation to an application, means an interested and affected party whose name is recorded in the register opened for that application in terms of regulation 42;</p>
Mitigation	<p>means to anticipate and prevent negative impacts and risks, then to minimise them, rehabilitate or repair impacts to the extent feasible.</p>
Public Participation Process	<p>A process of involving the public in order to identify issues and concerns, and obtain feedback on options and impacts associated with a proposed project, programme or development. Public Participation Process in terms of NEMA refers to: a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to specific matters.</p>
Significant impact	<p>means an impact that may have a notable effect on one or more aspects of the environment or may result in non-compliance with accepted environmental quality standards, thresholds or targets and is determined through rating the positive and negative effects of an impact on the environment based on criteria such as duration, magnitude, intensity and probability of occurrence.</p>

INTRODUCTORY NOTE

This report serves a Draft Scoping Report (DSR) as required by the National Environmental Management Act (Act No. 107 of 1998) in South Africa, the Environmental Assessment Act (Act No. 10 of 2011) in Botswana and in terms of the International Finance Corporation (IFC) Performance Standards. This public document forms part of the environmental authorisation process in South Africa and Botswana and will be circulated for public comment. All concerns raised during the Scoping phase will be addressed appropriately and incorporated, where relevant to guide the impact assessment phase. Once all the comments have been incorporated this report will be submitted to the Competent Authority (CA) as a Final Scoping Report (FSR) for approval to proceed to the assessment phase of the process.

This report is available for comments (30 days) from **30 June to 31 July 2017**.

Hard copies of the Draft Scoping Report and Appendices will be available during the specified commenting period at the following strategic public venues [**Note: the report may not be removed from the premises**].

SOUTH AFRICA		BOTSWANA	
Town/ Community	Venue	Town/ Community	Venue
Bewley/Miga	Supreme Poultry Ramatlabama; Ramatlabama Border Control; Klippand Boereverening	Tlokweng	Main Kgotla
		Modipane	Main Kgotla
Lehurutshe:	Lehurutshe Community Library Mangope drive, Lehurutse; Lehurutshe Civic Centre.	Dikwididi	Main Kgotla
Serake/ Driefontein	Driefontein Clinic – Stand no 99, Driefontein; Swartfontein Post Office	Mokatse	Main Kgotla
		Mochudi	Main Kgotla
Supingstad	Supingstad Clinic: 247 Monneng Section Supingstad Clinic: 247 Monneng Section	Monametsana	Main Kgotla
		Malotwane	Main Kgotla

Electronic copies of the report are also available for download from the following website:

<http://www.aurecongroup.com/en.aspx> (Listed under Public Participation)

I&APs can submit any comments and concerns on the Draft Scoping Report in writing by fax or e-mail to Public Participation Office **on or before 31 July 2017**. The project's name and commenter's contact detail must be noted.

The Public Participation Office

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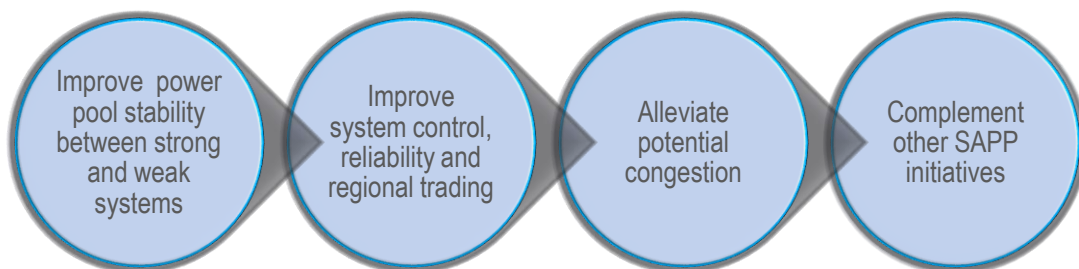
EXECUTIVE SUMMARY

What is proposed?

The Southern African Power Pool (SAPP) coordinates planning, generation and transmission of electricity for national electricity suppliers in the Southern African Development Community (SADC) region. SAPP identified the Botswana-South Africa (BOSA) Transmission Interconnection Project as one of the initiatives to reduce electricity supply constraints and assist in improving distribution of electricity in the region. Eskom of South Africa (Eskom) and the Botswana Power Corporation (BPC) will be the beneficiaries of the project.

The SAPP appointed Aurecon South Africa (Pty) Ltd to undertake the Preliminary Design and the Environmental and Social Impacts Assessment (ESIA) on the transmission corridor. The project is for a 400kV transmission power line. The proposed 210 km transmission line stretches between the Mahikeng area in South Africa and Gaborone in Botswana, with the longest section (approximately 149 km) of the line within South Africa. There will be two transmission lines located 60m apart and 210 km in length. The line will connect the existing Isang substation in Botswana to the proposed Watershed B substation in South Africa.

The objectives of the BOSA interconnector are primarily as follows:



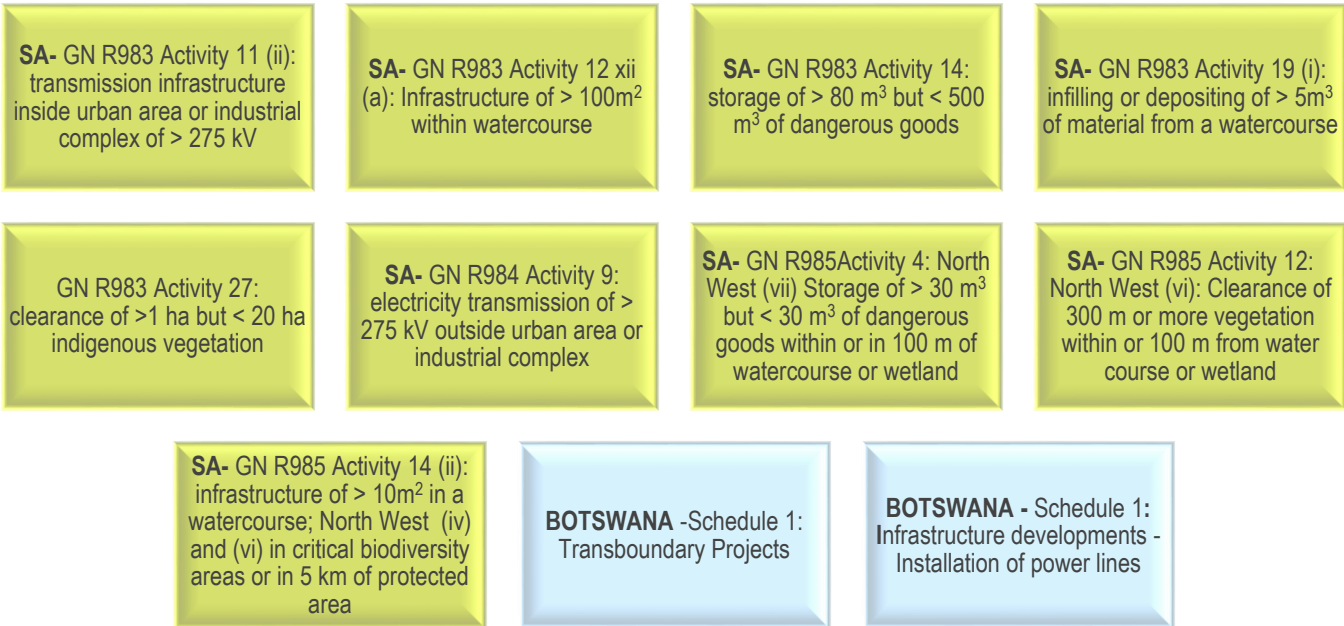
Given the challenging economic climate; the construction of the 400 kV transmission line between Botswana and South Africa is important for supporting economic development in the Region.

What are the legal requirements?

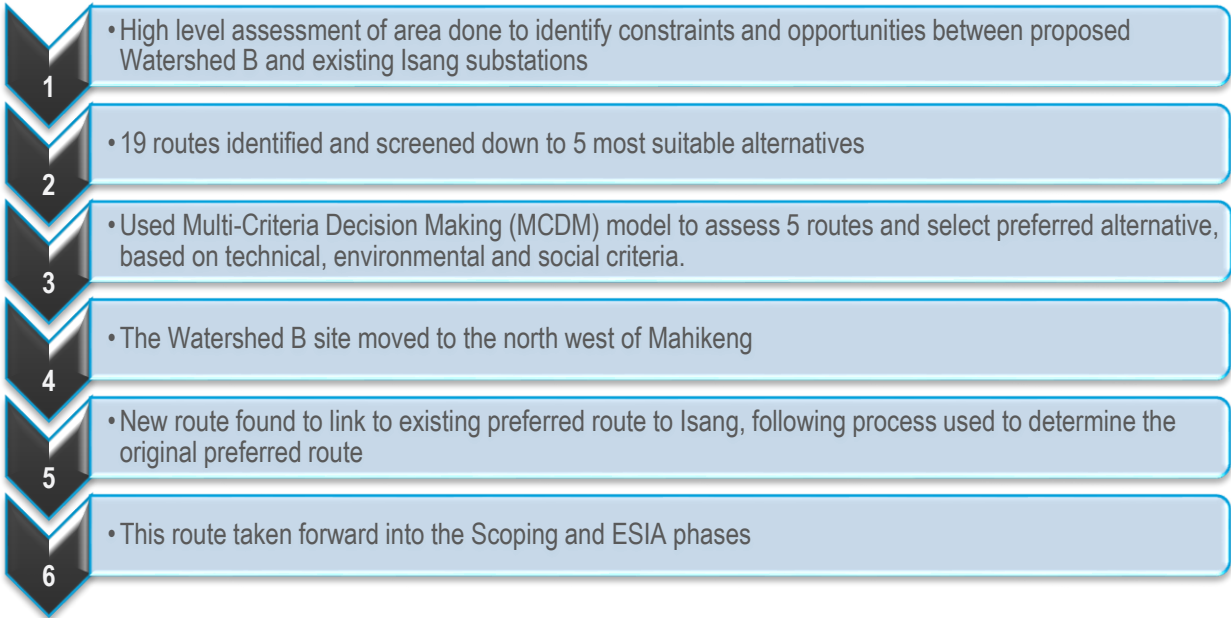
The project is funded by the European Union (EU) and the funds are administered by the Development Bank of Southern Africa (DBSA). An environmental assessment process is required to meet the international funder standards for environmentally and socially sustainable development and will be termed an Environmental and Social Impact Assessment (ESIA). The DBSA Environmental and Social Safeguards Standards, closely linked to the Performance Standards of the International Finance Corporation (IFC) will guide the overall ESIA. Two “sub-Environmental Impact Assessments (EIAs)” will run in parallel, to ensure that the specific South African and Botswana requirements are met.

The ESIA authorisation process is required in terms of the South African National Environmental Management Act (No.107 of 1998) (NEMA), as amended and Botswana. Environmental Impact Assessment Act (No. 6 of 2005) (EIAA). One application (which incorporates aspects from both countries) will be compiled and submitted to the Department of Environment Affairs (DEA) in South Africa and in Botswana for review and approval. The application for environmental authorisation is for a 1 km wide corridor within which the transmission lines will be located (i.e. 500 m on either side of the centreline of the route) to allow area for design changes and allow some flexibility for later stages of the project.

The Departments of Environmental Affairs (DEA) in Botswana and South African will be the Competent Authorities (CAs) that will handle or process the application. A Water Use Licence Application (WULA) process will also be required in terms of the National Water Act (Act No. 36 of 1998) [NWA]. The WULA will be handled by the provincial (Mahikeng) Department of Water and Sanitation (DWS).

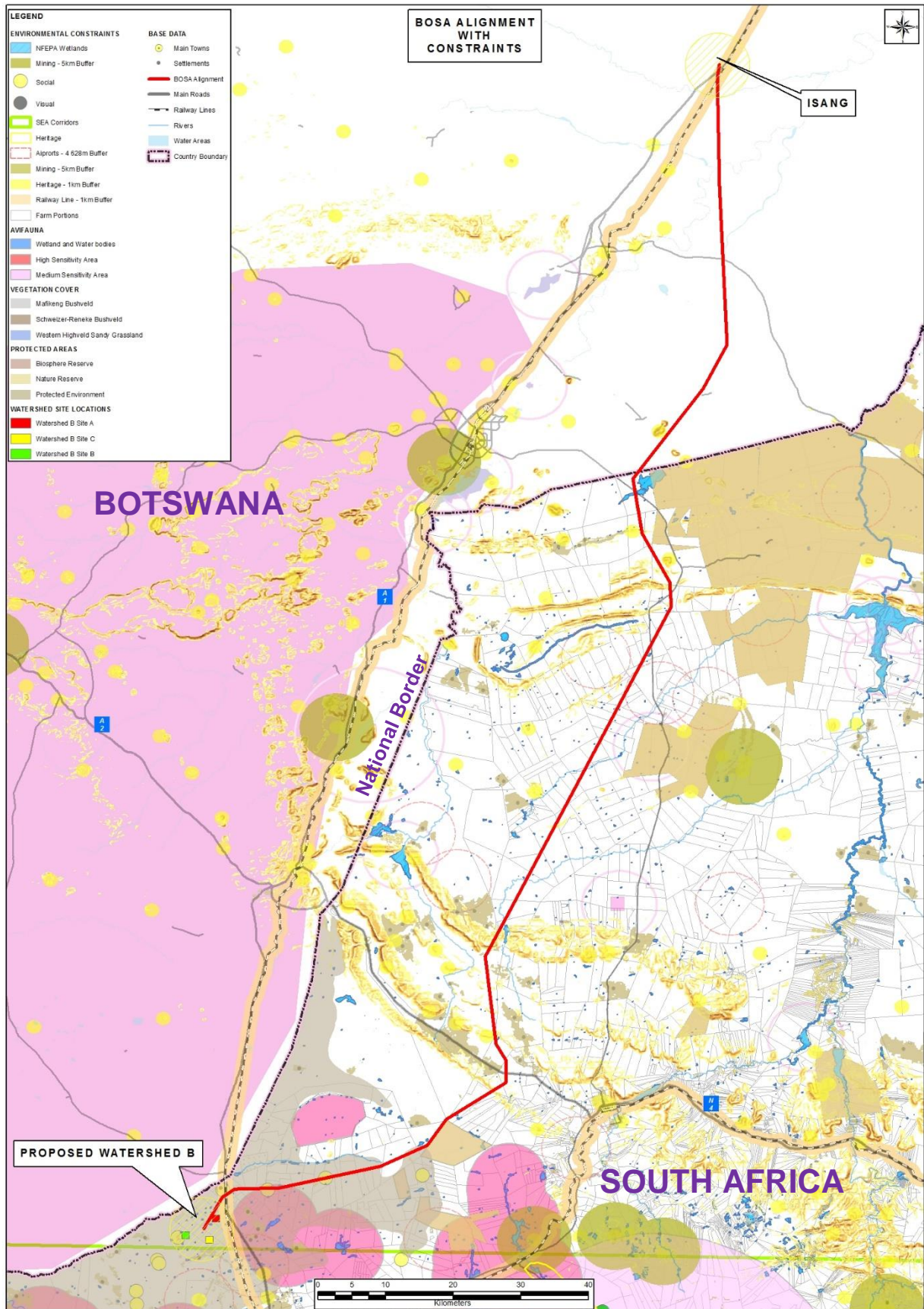


What has been done to date?



This report presents the findings of the Scoping Phase and outlines the scope of work proposed for the ESIA Phase.

The process and the Scoping and ESIA Reports will be peer reviewed by Prof. Francois Retief of Global Green Consultants, as required in South Africa because the design engineers and the environmental practitioners are both from Aurecon.



Proposed Transmission Line Locality and Sensitivity Map

What is the ESIA Process and Approach?

The ESIA is an interdisciplinary process that typically follows distinct phases. Each includes some form of public engagement and/or consultation. While this process is not uniform from country to country it generally consists of similar procedural steps as described below. The process in the centre represents best international practice for ESIA, as informed by the IFC Performance Standards

SOUTH AFRICA

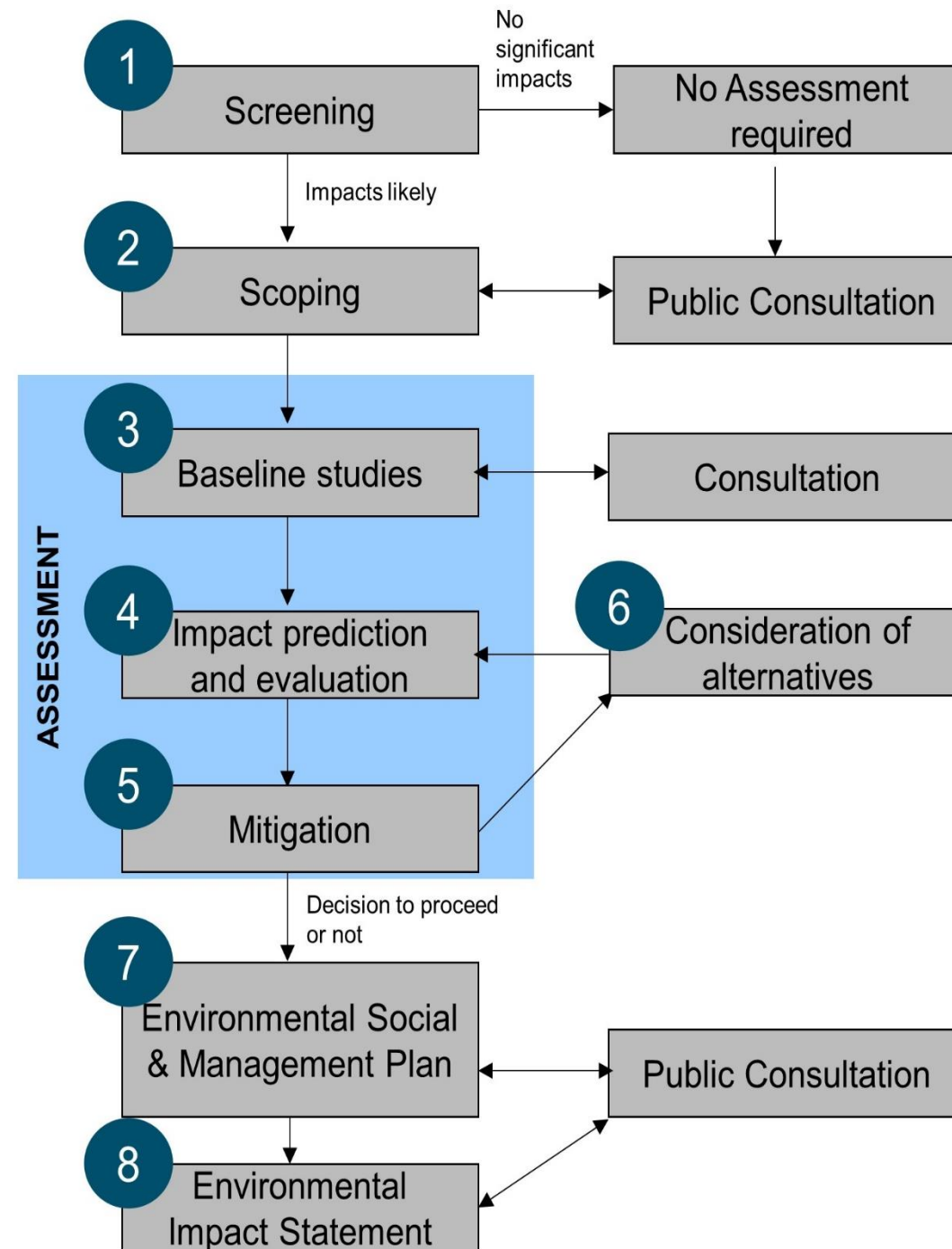
- Pre-application consultation with Competent Authority (CA)
- Initial Public Engagement (Issuing of notifications and BIDs)
- Submission of Environmental Authorisation (EA) application

NOTE: Screening is not stipulated as part of the regulatory process therefore has no specified timeframes. It is the responsibility of the applicant to do the screening exercise.

- Preparation and submission of a Draft Scoping Report (DSR) and Plan of Study (PoS) for ESIA (**44 days** from acceptance of application including the commenting period of **30 days**).
- DSR is finalised by addressing the comments received. Final Scoping Report and PoS for ESIA are submitted for authority review. The CA has **43 days** to make a positive or negative decision.

- Draft Environmental Impact Report (EIR) and ESMP Phase: **106 days** including the commenting period of **30 days**.
- Final EIR and ESMP – the CA has **107 days** to review – grant or refuse Authorisation.

- Applicant is notified of the decision within **5 days**.
- All registered I&APs are to be notified, in writing within **14 days** of the date of the Department's decision.
 - EA appeal process is finalised in **90 days**.



BOTSWANA

- Submission of a Project Brief to DEA Botswana
- Review by DEA Botswana should take a week

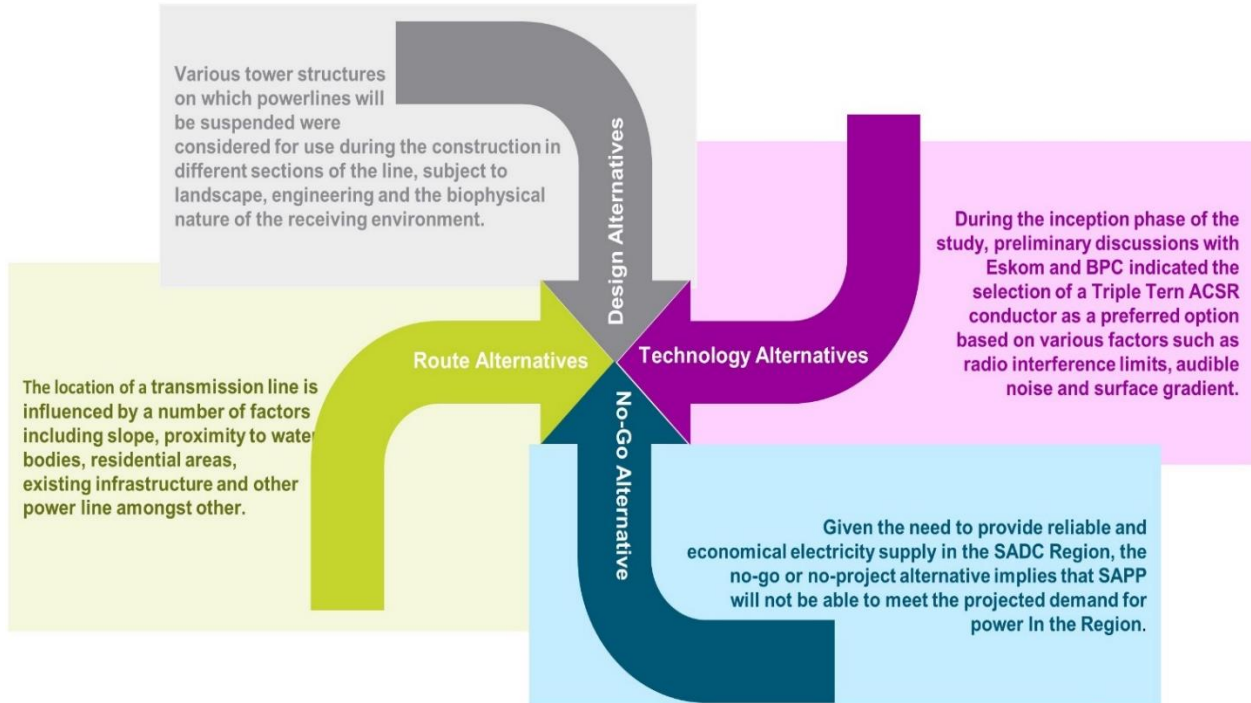
- Terms of Reference and Scoping Report
- Advertising of intended activity once for a period not less than 21 days using official languages.
 - After **21 days** hold public meetings
- Consultations with government departments, NGOs and businesses.
 - Submission of ToR and Scoping report to DEA
 - The Act provides **30 days** for review.

- Draft Environmental Impact Assessment Report
- Develop an Environmental Management Plan
 - Develop a Monitoring Plan
 - Further consultations if necessary
- Submit Environmental Impact Assessment Statement (EIS) to DEA
 - The Act provides **60 days** for review.

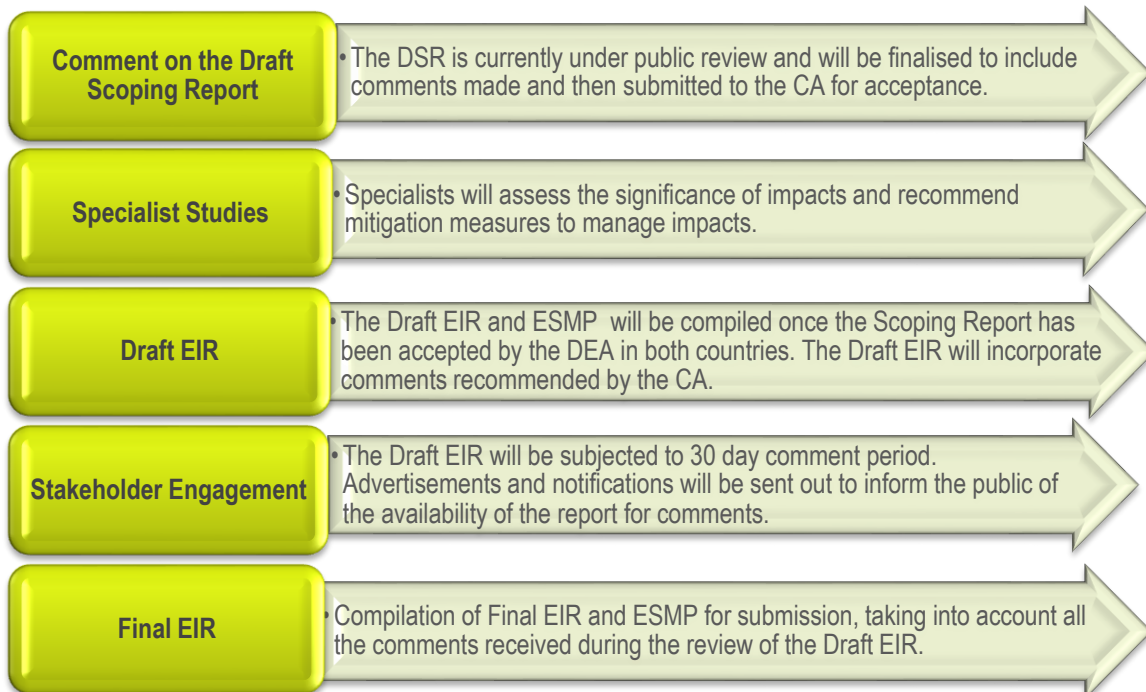
- Public Review Period
- Draft adverts stating impacts and mitigation measures as contained in the EIS for DEA approval
- Publish adverts in a nationally circulating paper and Government Gazette for **4 weeks**
- Obtain approval from DEA if no further comments are raised
 - The Act provides **60 days** for review.

What are the alternatives?

Route alternatives have been assessed at a high level assessment early in the process so that the line can be designed around the constraints and opportunities. This assists in ensuring a smoother transition through the project phases and prevents delays.



What is the process going forward?

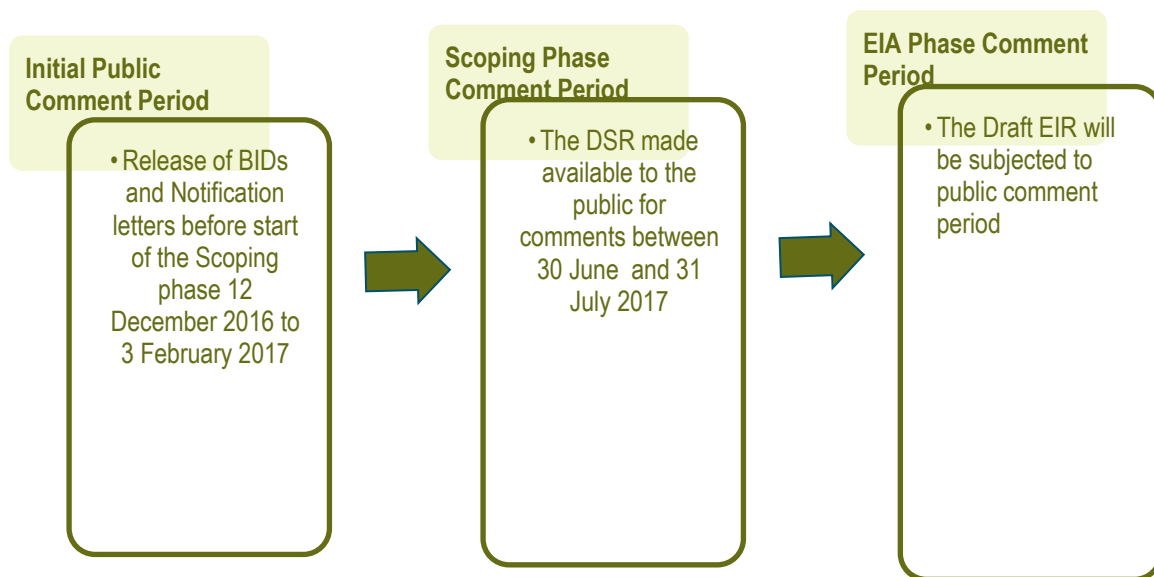


A Plan of Study (PoS) for ESIA forms part of the Scoping Report and includes a description of the so that the methodology and tasks proposed for the next phase of the ESIA. This must be approved by the CA and includes a description of the following:

- i. The alternatives to be assessed – the preferred option and the “No-Go” alternative
- ii. The impacts to be assessed by the specialists and the team
- iii. The proposed methodology to assess significance of impacts
- iv. The stakeholder engagement and authority consultation process
- v. How measures to avoid, reverse, mitigate or manage identified impacts will be identified.

Stakeholder Engagement

Throughout the ESIA process, I&APs have the opportunity to contact the EAP to discuss the project and raise any issues or concerns they might have. Focus group meetings will also be held with specific stakeholders to discuss issues related to the proposed development. All comments received during public comment period on the Draft EIR will be compiled into an updated CRR. The public will thus have 3 opportunities to participate during the ESIA process, which include the following:



What is the biophysical and social environment?

A description of the receiving environment is detailed in the Scoping Report and the sensitive aspects in each country are summarised below:

<u>SOUTH AFRICA</u>	<u>BOTSWANA</u>
1.1.1 Topography	
The main feature is being flat plains, with a ridges and isolated higher areas north of the N4 and drainage lines between ridges. Mean elevation ranges from 779 meters above mean sea level (mamsl.) to 2328 mamsl.	Uninterrupted flat areas dominate the landscape north the border towards Mochudi, with two river valleys, north of Mochudi.
1.1.2 Landuse	
There are several game and cattle farms, as well as croplands north east of Mafikeng and to west of line, concentrated close to larger towns. The closest mine is 7 km away from the proposed alignment. There are rural and urban settlements in the area, with larger settlements to the north of the N4. The largest formalised protected area is the Madikwe Nature Reserve.	The area supports small scale farming associated with small rural settlements. The only formalised town is Mochudi, which lies west of the proposed alignment. The natural landscape is contributes to the sense of place and aesthetic appeal and includes riverine, wetlands grassland and shrubland.
1.1.3 Surface water	
The study area falls within the Crocodile (West) Marico Water Management Area. The main rivers in the study area the Ngotwane, Sandloot and Brakfonteinspruit amongst other natural drainage lines, wetlands and artificial water features.	The South East District is characterised by a number of seasonal rivers which are prone to flash floods with the main rivers being the segoditshane, Notwane and Peleng.
1.1.4 Biodiversity	
The study area extends over the Savanna, Azonal and Grassland biomes and the power lines will cross about 11 vegetation units. The Dwarsberg-Swartruggens Mountain Bushveld, Klerksdorp Thornveld and Zeerust Thornveld are endemic, with >80% of the national extent occurring within the North-West Province.	Two Savanna / Woodland vegetation units within the study area. Most of these vegetation types and the associated species are common and widespread, with similar habitats extending into both Zimbabwe and South Africa.

1.1.5 *Avifauna*

The power line will not cross Important Bird Areas (IBA). One IBA, the Botsalano Nature Reserve, is 15 km from the proposed line.

The power line will not cross an IBA, but two IBAs occur within the broader area located between 15 km and 50 km west of the proposed power line.

1.1.6 *Visual Resources*

The landscape is defined by the vast, open flat terrain, predominant agricultural and natural landscape features and overall rural feel. Scattered rural settlements, towns and grasslands will not screen the line. The landscape quality is moderate - high because of few man-made structures, little visual discontinuity and interruption of the natural environment.

The landscape is defined by a patchwork of smaller scale agricultural fields and an overall rural feel. There are few vertical manmade or natural features. The landscape quality is considered moderate - high of the few man-made structures, little visual discontinuity and interruption of the natural environment.

1.1.7 *Human settlements*

The study area falls in the Ngaka Modiri Molema District Municipality. Ramotshere Moiloa and Mahikeng Local Municipalities will be affected. The main towns and settlements within 10 km of the study area are Mahikeng, Slurry, Ottoshoop, Lehurutshe, Dinokana, Ntswelesoku, Mmutshweu, Mantsie, Motswedi, Driefontein and Supingstad. The main economic driver of the Province is mining. Almost all of South Africa's platinum is found in North West.

The proposed development falls within the Kgatleng and South-East Regions, which has two sub-districts; Ramotswa and Tlokweng. The major settlements are Monametsana, Malotwana, Mochudi, Dikwididing, Mokatse and Modipane. Botswana has benefited from a stable social structure and a wealth of natural mineral resources. However, the economy is dependent on mining and agriculture, and has had to cope with the fluctuating diamond market and frequent droughts.

1.1.8 *Heritage and Cultural environment*

Based on the geographic and geological situation of the South Africa section of the line, it is anticipated that heritage sites and/or resources will be present.

The Iron Age is well represented in the area with the majority of sites, with Late Iron Age sites identified by prominent stone walling. Early Iron Age sites are mostly associated with the San people, with rock art sites in the study area. The later Iron Age sites such as Kaditshwene (close to Mafikeng) has Sotho-Tswana scalloped stone walling.

Gaborone is one of the richest regions in country in terms of archaeological, historical and heritage resources with over 200 archaeological sites recorded in the area. The proposed alignment area contains several small village sites. Due to the rural and primitive nature of these occupational units, burials are often performed close to the houses or huts. Although the documentation of grave sites will be part of the social impact assessment their relocation will form a second phase of the heritage management project.

What impacts are expected?

During the screening process various potential impacts on the biophysical and socio-economic environment were identified. The table below indicates the specialist baseline that have already been undertaken as part of the scoping phase. During the ESIA phase the specialists will undertake detailed impact assessments, which will be incorporated into the Draft EIR.

Potential Impact	Assessment	Specialist
Avifauna	Avifaunal Assessment	Chris van Rooyen Chris van Rooyen Consulting
Aquatic and terrestrial biodiversity	Aquatic and Terrestrial Biodiversity Assessment	Brian Colloty Scherman Colloty and Associates
Heritage resources	Heritage Impact Assessment	Stephan Gaigher GH Heritage Management Consultants
Visual resources	Visual impact assessment	Elmie Weideman Aurecon SA (Pty) Ltd
Socio-economics	Social Impact Assessment (SIA) and Livelihoods Restoration Plan (LRP)	Tebogo Sebogo Aurecon SA (Pty) Ltd

Potential Impact		Assessment	Specialist
	<ul style="list-style-type: none">– Crime– Economic displacement– Informal settlements		

SECTION 1

1 Introduction

This section introduces the purpose of this Scoping Report, provides a brief overview of the project background, the project team and lists the assumptions and limitations that pertain to the study and the compilation of this report.

1.1 Project Background

The Southern African Power Pool (SAPP) is a prominent power pool initiative tasked with coordinating the planning, generation and transmission of electricity on behalf of member state utilities in the Southern African Development Community (SADC) region. As such SAPP has identified Botswana-South Africa (BOSA) Transmission Interconnection Project as one of the energy pool initiatives. The aim of the project is to alleviate the current electricity supply constraints and contribute towards energy security of supply in the long run by enhancing the distribution of electricity in the region. Given the transborder nature of the project, both Eskom of South Africa (Eskom) and the Botswana Power Corporation (BPC) will subsequently be the beneficiaries of the project.

The SAPP appointed Aurecon South Africa (Pty) Ltd (hereafter referred to as Aurecon) as an independent consulting firm to provide transaction advisory services and project scoping for the proposed transmission interconnector project between the two countries. Aurecon was commissioned to undertake the Preliminary Design and the Environmental and Social Impacts Assessment (ESIA) on the referred transmission corridor. The design and environmental authorisation processes to be undertaken are for the construction of a 400kV transmission power line. This will consist of two transmission lines located approximately and 60m apart and 210 km in length. The line will connect the existing Isang substation in Botswana to the proposed Watershed B substation near Mafikeng in South Africa (**Figure 1**).

The project is funded by the European Union (EU) and the funds are administered by the Development Bank of Southern Africa (DBSA). An environmental assessment process is required to meet the international funder standards for environmentally and socially sustainable development and will be termed an Environmental and Social Impact Assessment (ESIA). The DBSA Environmental and Social Safeguards Standards, closely linked to the Performance Standards of the International Finance Corporation (IFC) will guide the overall ESIA, which will be conducted as two “sub-Environmental Impact Assessments (EIAs)”, run in parallel, to ensure that the specific South African and Botswana requirements are met.

The ESIA authorisation process is required in terms of the South African National Environmental Management Act (No.107 of 1998) (NEMA), as amended and Botswana Environmental Impact Assessment Act (No. 6 of 2005) (EIAA). One application (which incorporates aspects from both countries) will be compiled and submitted to the Department of Environment Affairs (DEA) in South Africa and in Botswana for review and approval. The application for environmental authorisation is for a 1 km wide corridor within which the transmission lines will be located.

The detailed project description is provided in **Section 4**.

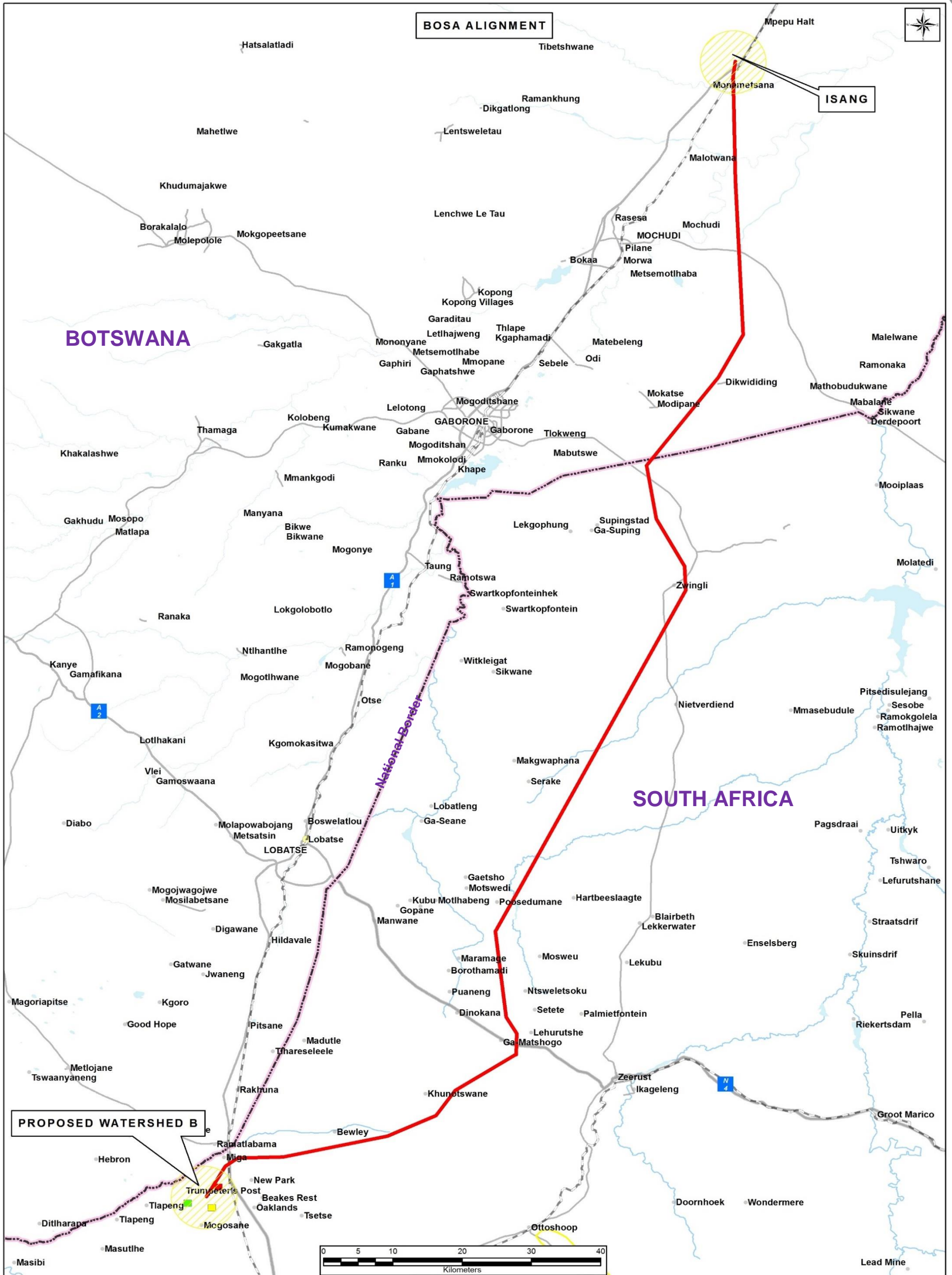


Figure 1: Proposed Transmission Line Locality Map

1.2 Project Team

1.2.1 Project proponent

The SAPP has commissioned the BOSA Transmission Interconnection Project on behalf of the national electricity suppliers in Botswana and South Africa, namely BPC and Eskom respectively. The details of these state utilities are listed below (**Table 1**):

Table 1: Details of the project proponents

Details	South Africa	Botswana
Company	Eskom SOC Ltd	Botswana Power Corporation (BPC)
Contact Person	Sebenzile Vilakazi	Jenamiso Moalosi
Telephone	+27 11 800 4902	+267 71375643
Fax	+27 44 805 5454	+267 395 9404
Email Address	Vilakazs@eskom.co.za	moalosij@bpc.bw
Postal Address	PO Box 1091 Johannesburg 2000	-
Physical address	Megawatt Park, Maxwell Drive, Sunninghill, Sandton, Johannesburg	BPC Head Office (Motlakase House) Macheng way Industrial site, Gaborone

1.2.2 Environmental Assessment Practitioner

In line with the South African Regulation 13 of the EIA Regulations (GN R982 of 2014) as amended and Botswana EIAA the proponent is required to appoint a registered Environmental Assessment Practitioner (EAP) to undertake the EIA process for any activities regulated in terms of the NEMA. The details of the project EAPs are listed below (**Table 2**):

Table 2: Details of the project EAPs

Details	South Africa	Botswana
Company	Aurecon South Africa (Pty) Ltd	Digby Wells Environmental, trading as RMP
Contact Person	Diane Erasmus	Kagiso Sakarea
Telephone	+27 44 805 5428	+267 390 5414
Fax	+27 44 805 5454	+267 397 5993
Email Address	Diane.Erasmus@aurecongroup.com	Kagiso.Sakarea@digbywells.com
Postal Address	PO Box 509 George 6530, South Africa	P O Box 3026 Gaborone
Physical address	Suite 201, 2nd Floor, Bloemhof Building, 65 York Street, George South Africa 6529	Unit 12, Kgale Court Plot 127, GIFP, Gaborone, Botswana

Aurecon has selected a team of experienced specialists and multi-disciplinary practitioners in order to execute this project in a professional and objective manner. A synopsis of the qualifications and experience of the Environmental Assessment team this project is provided hereunder (**Table 3**). Full CVs are available in **ANNEXURE A**.

Table 3: Details of the environmental assessment team

Name	Position	Firm	Qualification(s)	Years of Experience	Professional Affiliations
Diane Erasmus	Project Leader	Aurecon South Africa (Pty) Ltd	MSc Nature Conservation	28	Environmental Assessment Practitioners Association of South Africa
Wendy Mlotshwa	Environmental Scientist	Aurecon South Africa (Pty) Ltd	BSc (Hons) Environmental Science	4 years	Candidate – South African Council of Natural Scientific Professions
Amelia Visagie	Public participation consultant	Aurecon South Africa (Pty) Ltd	BComm Hons Industrial and Organisational Psychology	28 years	South Africa Board for People Practices
Kagiso Sakarea	Environmental Scientist	Digby Wells Environmental	BA Environmental Science MSc Environmental Science (year one completed)	8 years	Botswana Environmental Assessment Practitioners Association
Francois Retief	*Independent peer reviewer	North West University and Global Green Consultants	PhD Environmental Impact Assessment	20 years	International association for Impact Assessment

In terms of the requirements stipulated in the Regulation 13 (1) of NEMA, the EAP must be independent. The requirement for independence of the environmental consultant is aimed at reducing the potential for bias in the environmental process.

Neither Aurecon nor any of its sub-consultants are subsidiaries of SAPP, Eskom or BPC, nor is SAPP, Eskom or BPC a subsidiary to Aurecon. Furthermore, none of these parties have any interests in secondary or downstream developments that may arise out of the authorisation of the proposed project.

*The ESIA process, Scoping and ESIA reports will be peer reviewed by Prof. Francois Retief of Global Green Consultants, as required in South Africa because the design engineers and the environmental practitioners are both from Aurecon.

1.2.3 Competent Authorities

The details of the Botswana and South African Competent Authorities (CAs) that will handle or process the EIA applications for the BOSA project are listed in **Table 4** below:

Table 4: Details of the Competent Authorities

Name	South Africa	Botswana
Department	Department of Environmental Affairs (DEA) <i>(Director: Integrated Environmental Authorisations)</i>	Department of Environmental Affairs (DEA)
Contact Person	Fiona Grimett	The Director
Telephone	(012) 399 9393	(00267) 390 2050
Email Address	fgrimett@environmenta.gov.za	N/A
Postal Address	Private Bag X447 Pretoria 0001	Private Bag 0068 Gaborone Botswana

Name	South Africa	Botswana
Physical address	Environment House 473 Steve Biko Road Arcadia, Pretoria	Gaborone West Industrial Travaglini House

A Water Use Licence Application (WULA) process will also be required in terms of the National Water Act (Act No. 36 of 1998) [NWA]. The WULA will be handled by the provincial (Mahikeng) Department of Water and Sanitation (DWS). This process will commence after the scoping phase.

1.3 Assumptions, Limitations and Knowledge Gaps

The following assumption(s) have been identified for this Scoping Phase of the ESIA process:

- The information provided by Eskom and BPC is accurate, adequate and unbiased, and that no information that could change the outcome of the ESIA process has been withheld.
- The information obtained from the specialist baseline studies undertaken for this project is accurate and objective.
- The alignment will not deviate from the preferred route that has been assessed by the EAP and the specialists.
- Eskom and BPC will adhere to the conditions of the Environmental Authorisation (EA) and applicable legislation for the duration of the project.
- Impacts of the project on specific watercourses will be addressed in detail in the WULA process.
- There is no certainty the outcome of the EIA for the proposed Watershed B substation and what issues will be raised in this study.

This DSR is based on the following limitation(s):

- The scope of this investigation is limited to identifying the environmental impacts associated with the preferred alignment or corridor.
- Limited spatial information is available on the extent and types of vegetation found within the study area located within Botswana.
- The information, as presented in this document, only has reference to the study area(s) as indicated on the accompanying maps.

Knowledge gap(s):

During the scoping phase climate change was identified as one of the potential environmental impacts that could be associated with proposed project. Anticipated climate change impacts have not been identified or assessed at this stage. Provision has been made for a statement on climate change to determine the potential impact of climate change on the project and how the project may contribute to climate change. The impact analysis will be undertaken as part of the ESIA phase.

It is important to note that the scope of impacts presented in this report could change, should new information become available.

1.4 Purpose of this Report

This report aims to present the findings of the Scoping Phase and outline the scope of work proposed for the ESIA Phase. In line with the NEMA requirements, the Scoping Report must include but not be limited to the following aspects:

- ESIA process and/or approach being undertaken for the proposed project;
- Legal and policy framework within which the project takes place;
- Description of the proposed project, motivation of the need for the project and description of the different alternatives considered;
- Description of the baseline receiving environment – both the biophysical and socio-economic context;
- Identified potential impacts, including issues to be assessed in the ESIA Phase;
- Assessment methodology that will be adopted;
- The Stakeholder Engagement / Public Participation Process (PPP)¹ that has been conducted to date; and
- Recommendations and key procedural aspects going forward.

1.5 Report Structure

This report serves to document the Scoping Phase of the ESIA process and is structured as follows:

- Section One:** Provides an overview and/or background to the project and team involved in the ESIA process. It also outlines the purpose of this document, assumptions and limitations of the study.
- Section Two:** Describes the legislation and policy framework for the ESIA process applicable to the project.
- Section Three:** Outlines the ESIA approach to be followed and progress to date.
- Section Four:** Provides a detailed project description from planning to decommission. In addition, provides a motivation of the need for the proposed BOSA project.
- Section Five:** Outlines the different project alternatives considered and the process followed to identify the feasible options.
- Section Six:** Provides a description of the the biophysical and social aspects of the affected environment.
- Section Seven:** Describes the Public Participation Process (PPP) that has been conducted to date, and that will be undertaken during the remainder of the process.
- Section Eight:** Describes the Plan of Study the Assessment phase of the ESIA process based on the potential issues identified during the scoping phase.
- Section Nine:** Provides conclusions of the study and way forward.

¹ Stakeholder Engagement is the term used in the DBSA Environmental and Social Safeguards Standards and the IFC Performance Standards for engaging with those affected by the proposed activity, while NEMA in South Africa uses the term Public Participation. In the context of this report, the meaning of the terms is taken to be the same and the term used by the DBSA is used in this process, namely Stakeholder Engagement.

SECTION 2

2 Legislative and Policy Framework

This section provides an overview of the legal and policy framework within which the project takes place. Other relevant guidelines and policies to be considered when undertaking an ESIA process are listed under this section.

2.1 Overarching international standards and policies

The ESIA process will be undertaken in line with South African and Botswana environmental legislation, alongside other international standards, policies and regulations. As a donor funded, transboundary project, the ESIA process needs to comply with both sets of national legislation and the IFC performance standards and the World Bank Environmental Health and Safety Guidelines, as informed by the Equator Principles. The IFC policy ensures that all the operations are carried out in an environmentally and socially responsible manner².

2.1.1 DBSA Environmental and Social Safeguards Standards

The DBSA is a development finance institution involved in delivering developmental infrastructure in Southern Africa and the Southern African Development Community (SADC). It aims to advance development that improves the quality of life of people, support economic growth and regional integration (DBSA, 2017). The DBSA has developed the Environmental and Social Safeguards Standards as an extension of its Environmental Appraisal Framework and the Social and Institutional Appraisal Guidelines. It has developed these to synchronise with the environmental and social standards of other Development Finance Institutions such as the Global Environmental Fund (GEF) Minimum Environmental and Social Safeguards Standards, the World Bank Environmental and Social Safeguards, the IFC Performance Standards and the AFDB Safeguards (DBSA, 2015).

Safeguard 1 is an umbrella standard which emphasises the need for integrated environmental and social management to identify and manage environmental and social impacts, risks and opportunities of the lifecycle of the project. It also requires effective community consultation with those affected by the project and specifically the local communities.

Safeguards 2 to 6 establish objectives to avoid, minimise and manage or compensate for residual impacts from the project. These, and the relevance to this project, are discussed in more detail in **Section 2.3**. The process outlined by the DBSA is indicated below (**Figure 2**) (DBSA, 2015).

² IFC, 1998. Procedure for Environmental and Social Review of Projects

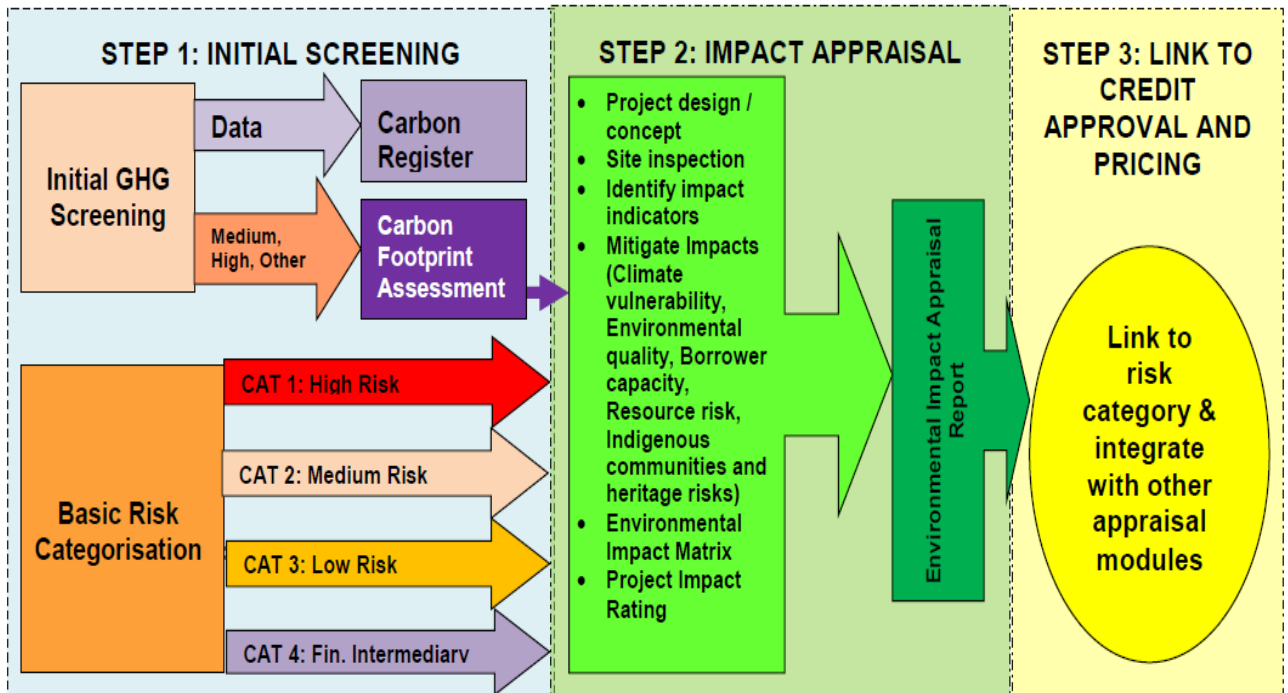


Figure 2: Process for environmental assessment outlines by the DBSA (DBSA, 2015)

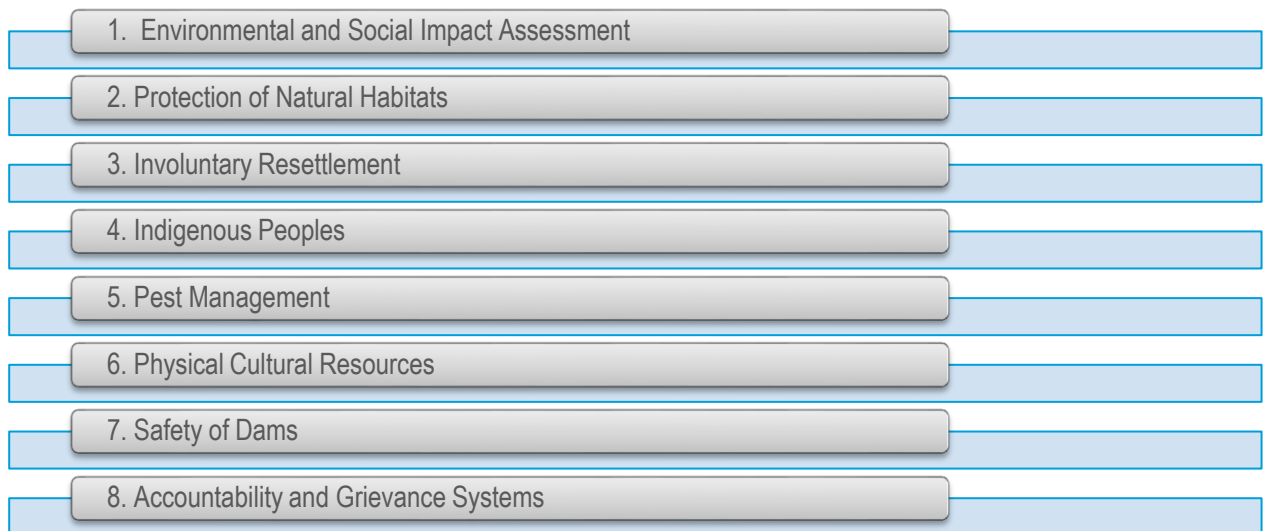
2.1.2 Global Environmental Fund (GEF) Minimum Standards

The GEF unites 183 countries in partnership with international institutions, civil society organisations and the private sector to address global environmental issues while supporting national sustainable development initiatives (GEF, 2017). It is the largest public funder of projects providing grants for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.

The GEF also serves as financial mechanism for the following conventions:

- Convention on Biological Diversity (CBD);
- United Nations Framework Convention on Climate Change (UNFCCC);
- UN Convention to Combat Desertification (UNCCD);
- Stockholm Convention on Persistent Organic Pollutants (POPs); and
- Minamata Convention on Mercury.

The 8 Minimum Standards, the first 7 of which are carried across in to the DBSA Environmental and Social Safeguard Standards, are as follows:



2.1.3 *Equator Principles and IFC Policy on Environmental and Social Sustainability*

The Equator Principles are a set of principles for determining, assessing and managing social and environmental risk in project financing. The Equator Principles were developed by private-sector banks and were launched in June 2003. Equator Principles Financial Institutions (EPFI) can voluntarily agree to adhere to Equator Principles, and by doing so, agree to apply them to all new project financings. The aim is that EPFIs only finance projects which are developed in an environmentally and socially sound manner. The Equator Principles incorporate, by reference, the International Finance Corporation (IFC) Performance Standards and the World Bank Group Environmental, Health, and Safety (EHS) Guidelines. The importance of climate change, biodiversity and human rights are recognised in these principles and negative impacts on project-affected ecosystems, communities and the climate should be avoided where possible.

The Equator Principles have greatly increased the attention and focus on social/community standards and responsibility, including robust standards for indigenous peoples, labour standards, and consultations with locally affected communities within the Project Finance market. They have also promoted convergence around common environmental and social standards and inform the IFC and OPIC’s Performance Standards.

The IFC is an international financial institution that offers investment, advisory, and asset management services to encourage private sector development in developing countries. The IFC’s Performance Standards offer a framework for understanding and managing environmental and social risks for high profile, complex, international or potentially high impact projects. They define clients’ responsibilities for managing their environmental and social risks and are regarded as an international benchmark which have been adopted by many organisations as a key component of their environmental and social risk management (IFC, 2012).

The Performance Standards provide guidance on how to identify risks and impacts and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable manner, including stakeholder engagement and disclosure obligations of the client in relation to project-level activities.

The IFC Performance Standards encompass eight Performance Standards (**Figure 3**). Performance Standards 1 establishes the importance of (i) integrated assessment to identify the environmental and social impacts, risks, and opportunities of projects; (ii) effective community engagement through disclosure of project-related information and consultation with local communities on matters that directly affect them; and (iii) the client’s management of environmental and social performance throughout the life of the project.

Performance Standards 2 through 8 establish objectives and requirements to avoid, minimise, and where residual impacts remain, to compensate/offset risks and impacts to workers, the affected community and the environment, if applicable to the project.



Figure 3: IFC Performance Standards

The IFC also produces manuals and guidelines on best practice on key elements such as the IFC’s 2007 Manual Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets. This Manual promotes the principles indicated below (Figure 4).

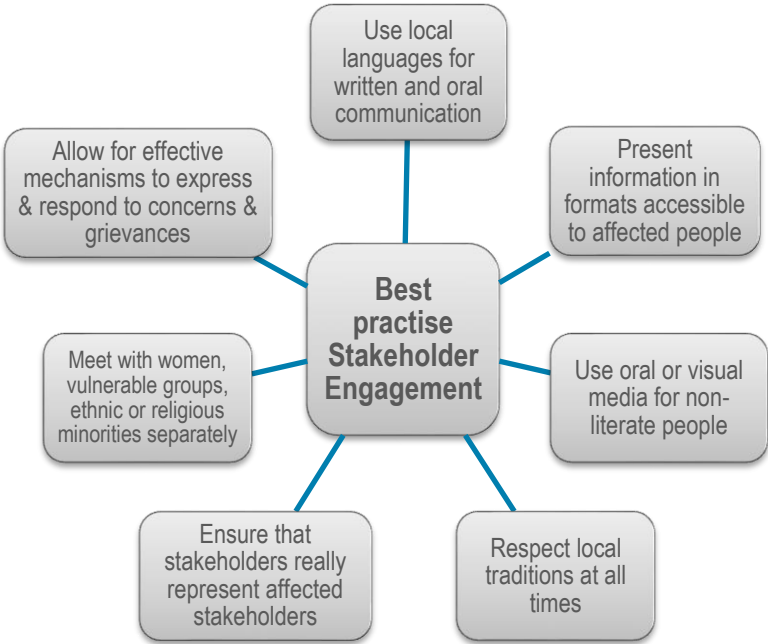


Figure 4: Best Practice or principles for the Stakeholder Engagement

2.1.4 Environmental, Health, and Safety (EHS) Guidelines

The World Bank Group EHS Guidelines are referred to in Performance Standards 1 as the technical reference documents with general and industry-specific examples of good international industry practice, to be used as a technical source of information during project appraisal. The EHS Guidelines contain the performance levels and measures that are normally acceptable to the World Bank, the IFC and the DBSA, and that are generally considered to be achievable in new facilities at reasonable cost using existing technology.

The General EHS Guidelines are used together with the relevant Industry Sector EHS Guidelines to provide guidance on EHS issues in specific industry sectors. The EHS Guidelines provide performance levels and measures to be achieved in new facilities by existing technology at reasonable costs. The EHS Guidelines should be tailored to each project based on the outcomes of an environmental assessment. Additionally, environmental issues specific to the construction, operation, and decommissioning addressed in the EHS Guidelines for electric power transmission and distribution are as follows (**Figure 5**):

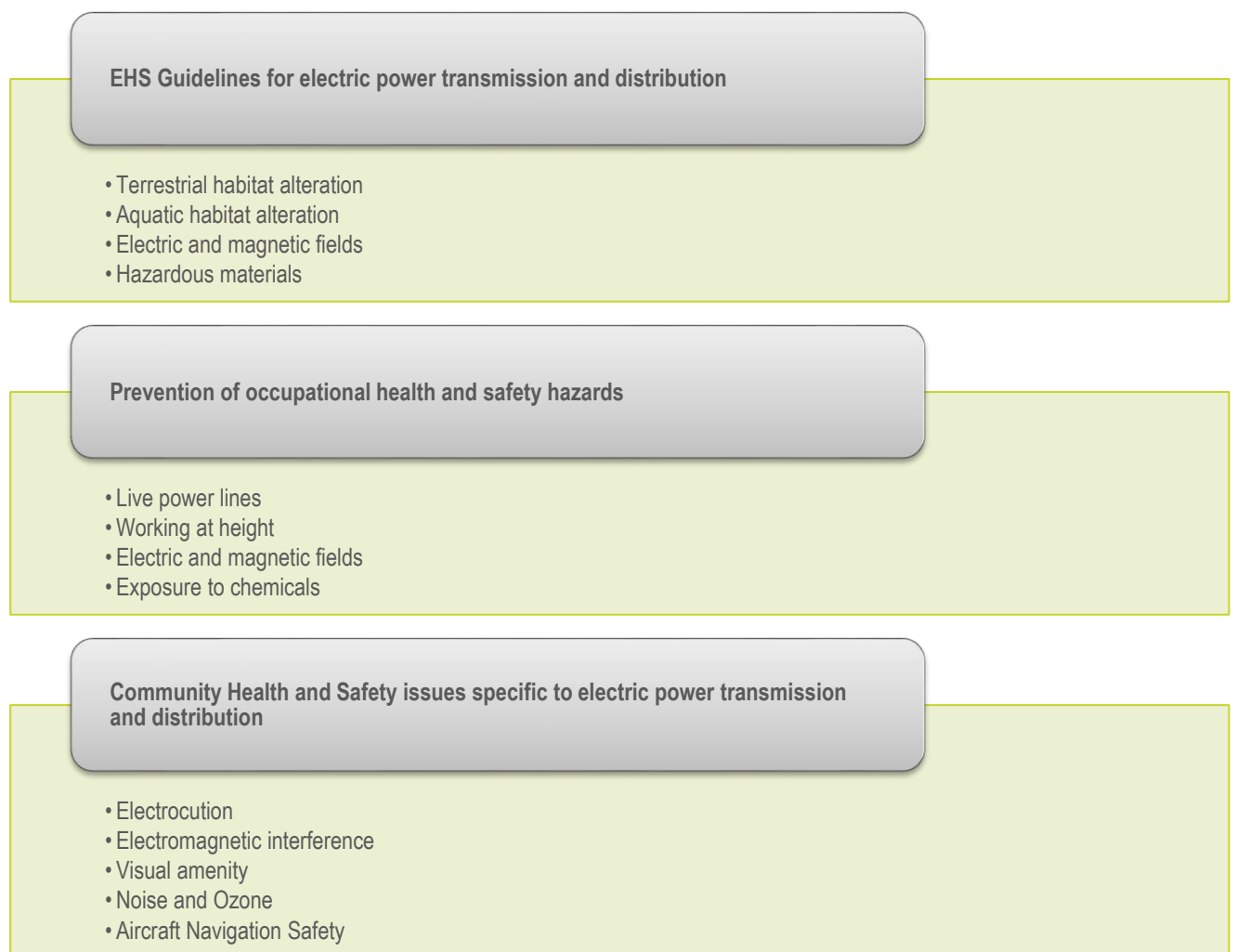


Figure 5: EHS Guidelines for electric power transmission and distribution

The IFC's General Environmental, Health, and Safety Guidelines, Section 2.0: Standards and Guidelines (2007) provides guidelines for construction and civil works and impacts such as erosion, impacts to water quality, solid waste disposal and occupational health and safety issues, as follows (**Figure 6**):



Figure 6: Guidelines for construction and civil works and impacts

For the above, the EHS Guidelines establish performance indicators that should be achieved as a minimum. The requirements of these guidelines have to be accomplished during the different implementation phases of the project. If the host country has more stringent performance indicators then these must be guaranteed.

2.1.5 SAPP Policy

The SAPP is a regional body that optimises the use of available energy resources in the region, allowing countries to support each other during emergencies. The Power Pool consists of 12 SADC member countries represented by their respective power utilities (**Figure 7**) (SAPP, 2010).

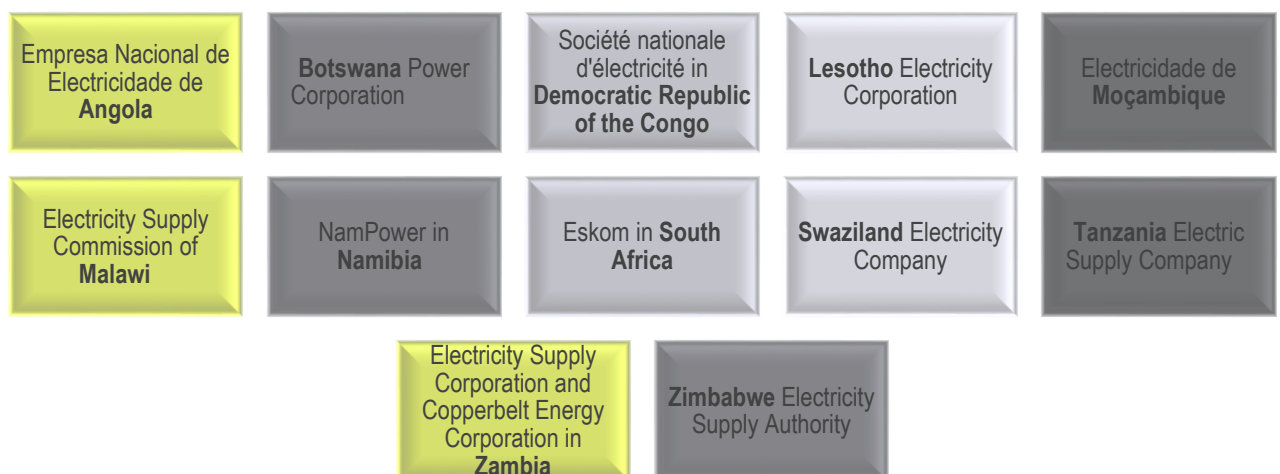


Figure 7: Member countries of the SADC Power Pool

The SAPP is committed to reasonable utilisation of natural resources and limiting the impact on the environment (SRK, 2017) and therefore developed a guide as a tool to assist in completing an ESIA that will meet the environmental and social requirements of the host country and the Finance Institutions such as the World Bank, the DBSA, the African Development Bank (AfDB) and the IFC (SAPP, 2010). An Environmental and Social Management Framework was further developed in 2017 to assist in screening projects at a high level to strengthen the assessment, mitigation and management of environmental and social risks and impacts at a high-level (SRK, 2017) and to cater for different categories of projects based on the extent and significance of likely impacts and risks. The SAPP subscribed to the IFC Performance Standards, which are also considered in this ESIA, together with the DBSA Safeguards Standards.

2.1.6 Utilities Environmental and Social Policy

2.1.6.1 Eskom

Eskom aims to provide affordable energy and related services sustainably through integrating and considering economic development, environmental quality and social equity into business practices. This allows us to take a long-term view and ensure that the scope of our work covers all relevant elements, assesses the practicality of implementation and includes issues such as technology development and deployment, quality, risk, safety and skills development (Eskom, 2016).

As a means to implementing this policy, Eskom commits to:

- Minimise pollution and environmental degradation and address safety and occupational health in management systems;
- Comply with legislative and policy requirements;
- Implementation of management systems in accordance with, but not limited to ISO 9001, ISO 14001, and OHSAS 18001 requirements;
- Educate its employees in terms of occupational health, safety, and environmental issues;
- Engaging stakeholders by promoting open communication and engagement that is safety, health and environment and purpose-driven;
- Setting safety, health, environment and quality intended outcomes and measuring performance to ensure continual improvement;
- Ensuring Eskom's contractors meet Eskom's safety, health environment and quality requirements;
- Ensuring that adequate resources are available for safety, health, environment and quality management;
- Proactively managing Eskom's environmental footprint, prevention of pollution and environmental degradation, pursuing a low-carbon future, and prioritising energy and water efficiency and conservation within and outside Eskom by transitioning to cleaner energy mix;
- Ensuring the sustainable use of resources, climate change mitigation and adaptation and protection of biodiversity and ecosystems.

2.1.6.2 BPC

BPC, as part of its environmental policy, implement an integrated management system for environmental and occupational safety, health and fire protection throughout the Corporation. In terms of this, BPC aims to identify and pro-actively manage all safety, health and environmental risks posed by its operations and major project activities. The systems include provision for:

- Identification of safety, health and environmental risks in BPC operations;

- Assessment and characterisation of the potential consequences of safety, health and environmental related risks to employee, contractors, customers, communities and the environment; and
- Evaluate the effectiveness of BPC SHE controls, including preventative and mitigation measures (BPC, 2017).

2.2 Environmental and social categorisation and rationale

International funders require that certain identified projects are classified in terms of the activity proposed and the receiving environment as to the level of assessment required in terms of environmental and social aspects (**Figure 8**).

DBSA categorises projects based on environmental and social factors (DBSA, 2015) as follows:

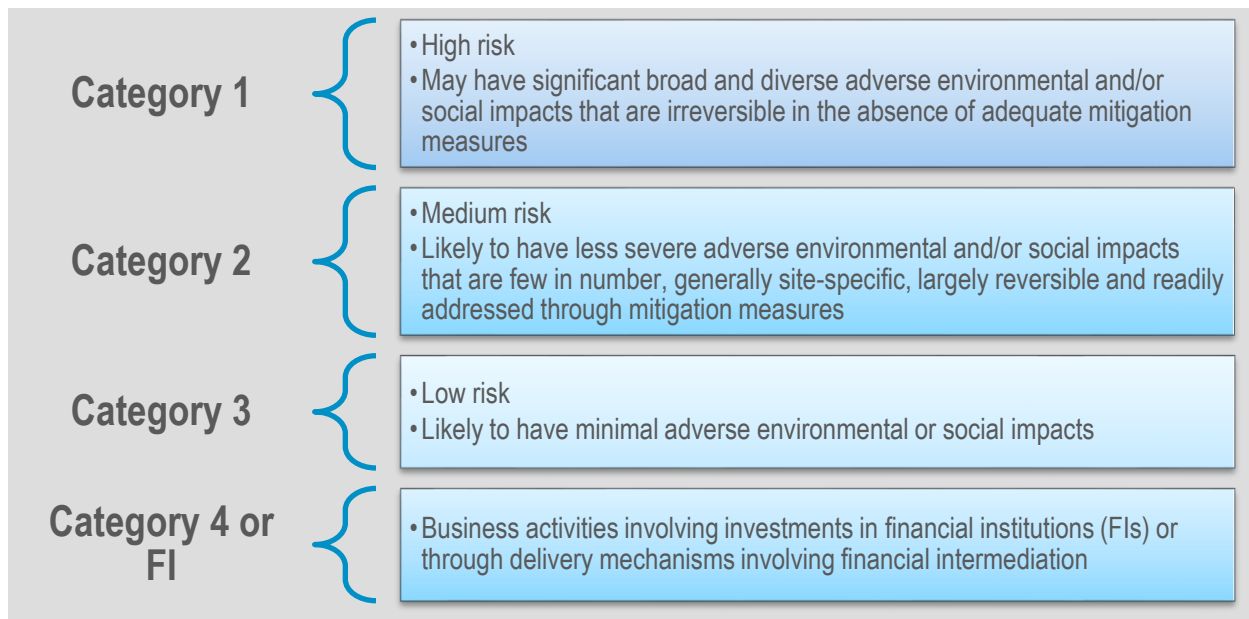


Figure 8: DBSA project categories

The type and size of the project will determine the level of detail required in the assessment process but, at a minimum, the following is required (**Figure 9**):

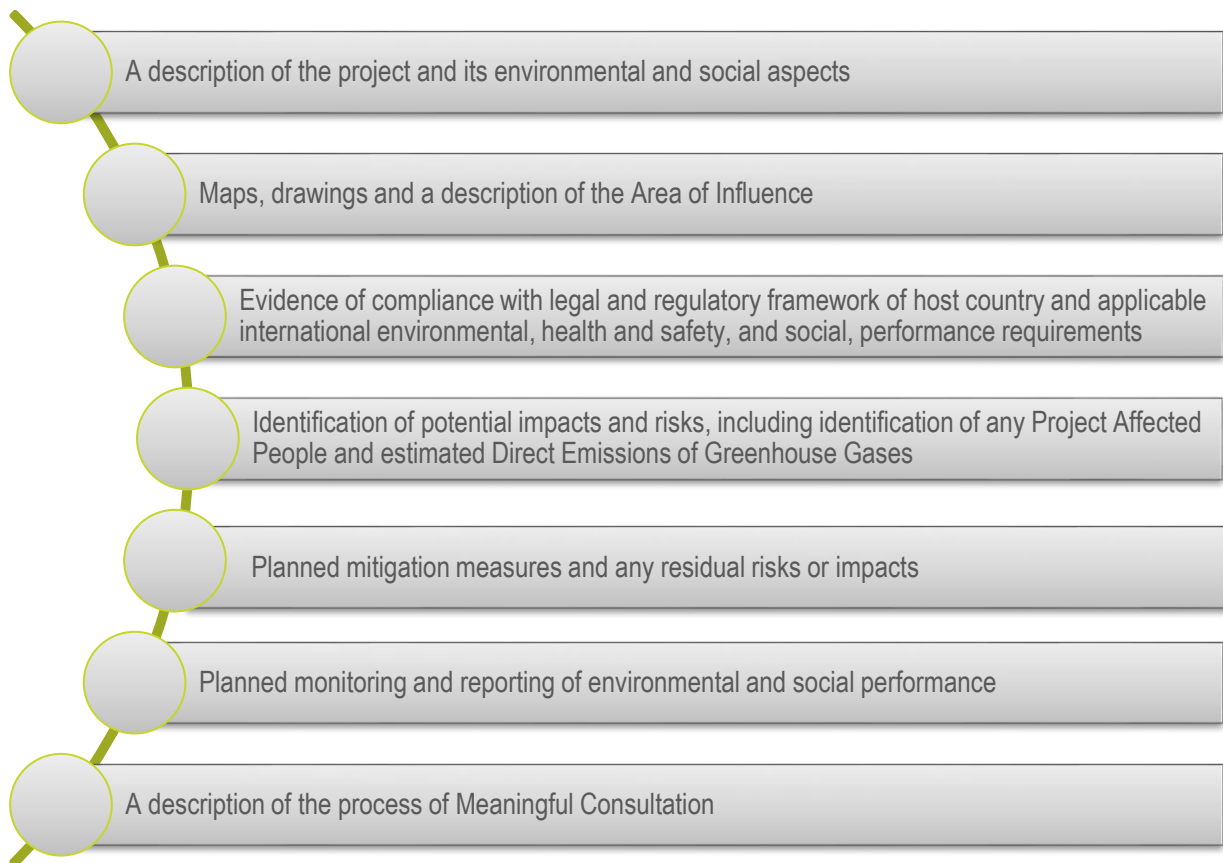


Figure 9: Level of details required in the project impact assessment process

Equator Principle Financial Institutions (EPFIs)³, in accordance with Principle 1 of the Equator Principles also categorise projects into high, medium and low environmental and social risk, based on the IFC categorisation process (Equator Principles, 2014), using a similar classification system to the DBSA. This is applied to projects globally and across all industry sectors.

According to the DBSA, IFC and the Equator Principles criteria for classification, the proposed transmission line would be considered a Category 2 or B project, as it is not located in a sensitive area, the project will not affect protected areas, there are not significant livelihoods issues and no major social or environmental concerns were raised. Residual impacts can be managed to acceptable levels. Additionally, no involuntary resettlement is required, as there will be no physical displacement but economic displacement, which will be considered in the Livelihoods Restoration Plan. However, in terms of NEMA in South Africa, a full EIA process is required and the DBSA require that the ESIA process should address compliance with relevant host country laws, regulations and permits that pertain to environmental and social issues **(Figure 10)**.

³ EPFI is the name that is given to an adopter (institution) of the Equator Principles.

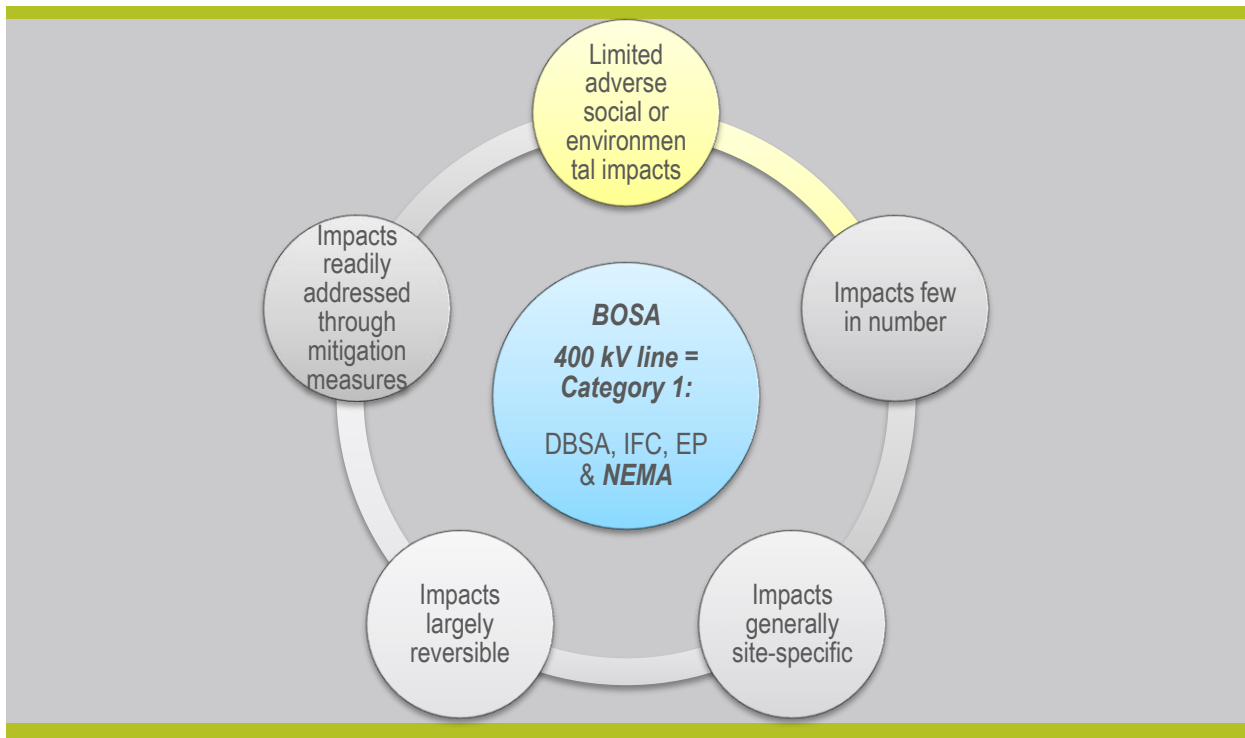


Figure 10: Impacts associated with a project classified as Category 1

2.3 Applicable Legislation

Given the extent of the project, there are numerous other pieces of legislation which should be considered in order to assess the potential applicability of these for the proposed activity. The relevant legislation is listed in **Table 5**.

Table 5: Legislation applicable to the project

South Africa	Botswana
<ul style="list-style-type: none"> • Constitution of the Republic of South Africa (Act No. 108 of 1996) • National Environmental Management Act (Act 107 of 1998) • Basic Conditions of Employment Act (Act No. 75 of 1997) • National Environmental Management: Waste Act (Act No. 59 of 2008) • National Environmental Management: Air Quality Act, 2008 (Act No. 39 of 2008) • National Water Act (Act No. 36 of 1998) • Electricity Regulation Act (Act No. 4 of 2006) • Minerals and Petroleum Resources Development Act (Act No. 28 of 2002) • National Forest Act (Act No. 84 of 1998) • Occupational Health and Safety Act (Act No. 85 of 1993) 	<ul style="list-style-type: none"> • Environmental Assessment Act (Act No. 10 of 2011) • Electrical Supply Act Chapter 73:01 • Atmospheric Pollution (Prevention) Act (Cap. 65:03 of 1971) • Tribal Land Act (Cap 32: 02 of 1990) • Employment Act, 1992 • Public Health Act (Cap. 63:01 of 1981) • Waste Management Act (Cap. 65:06 of 1998) • Water Act (Cap. 34:01 of 1968) • Monuments and Relics Act 12 of 2001 • Water Works Act, Chapter 34:03 (1962) • Town and Country Planning Act Chapter 32:09 (1980) • Road Traffic Act Chapter 69:01 (1975) • Mines, Quarries, Works and Machinery Act Chapter 44:02 (1978)

South Africa	Botswana
<ul style="list-style-type: none"> • National Road Traffic Act (Act No. 93 of 1996) • Hazardous Substances Act (Act No 15 of 1973) • Expropriation Act (Act No. 63 of 1975) • Promotion of Administrative Justice Act (Act No. 3 of 2000) • Extension of Security of Tenure Act (Act No. 62 of 1997) • National Environmental Management: Biodiversity Act (Act No. 10 of 2004) • Conservation of Agricultural Resources Act (Act No. 43 of 1983) • Traditional Leadership and Governance Framework Amendment Act (Act No. 23 of 2009) • National Heritage Resources Act (Act No. 25 of 1999) 	<ul style="list-style-type: none"> • Mines and Minerals Act Chapter 66:01 (1999) • Herbage Preservation (Prevention of Fires) Act (1st February 1978) • Factories Act (1979) • Plant Protection Act (Cap 35:02 of 2007)

The section below describes the above listed legislation for the both countries and how they comply with the DBSA Environmental and Social Safeguards Standards which are applicable to this project (**Figure 11-Figure 16** and **Table 6-Table 11**). Reference is also made to the IFC Performance Standards 2, 3 and 4, which is not explicitly covered in the DBSA Safeguards Standards.

2.3.1 DBSA Environmental and Social Safeguard Standards

Environmental and Social Safeguard Standard 1 – Impact Assessment and Stakeholder Engagement

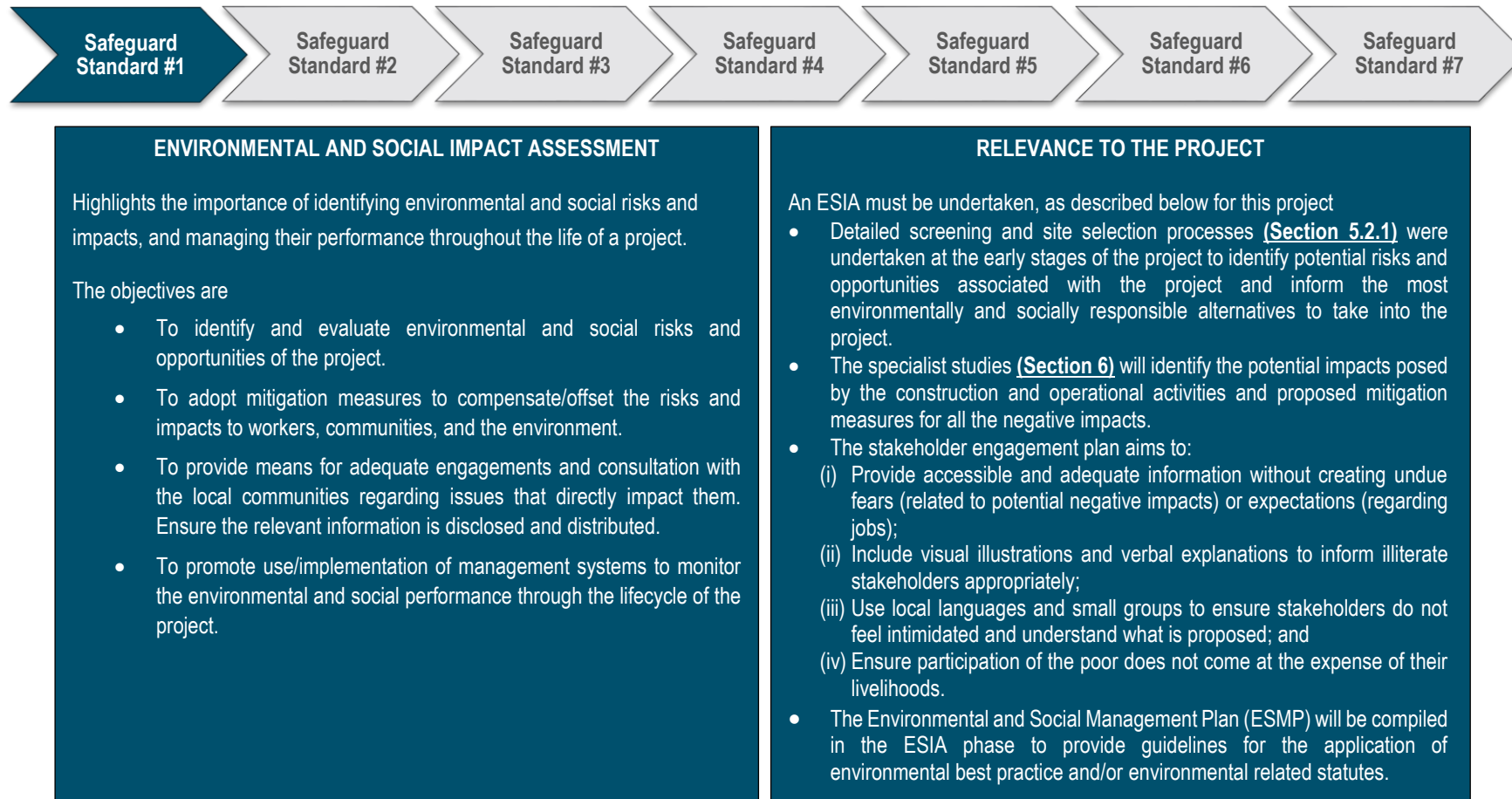


Figure 11: Requirements and applicability of the DBSA Safeguard Standard 1

Table 6: Legislative framework complying with the DBSA Safeguard Standard 1

Legislation(s)	Country	Description	Applicability	Reference in the Report
Constitution of the Republic of South Africa (Act No. 108 of 1996)	South Africa	<p>Constitution is the supreme law of the country. Section 24 of the Constitution provides the overarching environmental legislative framework for environmental management and it aims to ensure that everyone has the right to an environment that is not harmful to their health or well-being and the environment is protected for the benefit of present and future generations, through reasonable legislative and other measures.</p> <p>Furthermore, Section 25 of the Constitution guarantees everyone the right of access to information which is essential for them to exercise their Constitutional right including any information pertinent to the environmental assessment (EA) or ESIA process.</p>	<p>Eskom will be required to adhere to the ESMP requirements in order to ensure that social and environmental management considerations are taken into account and implemented throughout the lifecycle of the project.</p> <p>As per Section 25 the SE that will be undertaken is considered an essential mechanism for informing stakeholders of their rights and obligations in terms of the project.</p>	Section 8.5.4
National Environmental Management Act (Act No. 107 of 1998)	South Africa	<p>The National Environmental Management Act (NEMA) is the principal underlying framework for environmental law and legislation in South Africa, The main purpose of the NEMA is to achieve effective and co-operative environmental governance by means of developing principles that guide the decision-making with matters concerning the environment.</p> <p>Section 28(1) states that “every person who causes or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring”. If such pollution or degradation cannot be prevented then appropriate measures must be taken to minimise or rectify such pollution or degradation.</p>	<p>In terms of the NEMA, the proposed development triggers listed activities (discussed in Table 15) which may significantly impact on the environment. As a result, the project requires Environmental Authorisation (EA) from the relevant competent authority.</p> <p>The applicant has the responsibility to ensure that the proposed activity and ESIA process conform to the principles of the NEMA.</p>	Section 2.3.3; Section 3; Section 5

Legislation(s)	Country	Description	Applicability	Reference in the Report
Environmental Assessment Act (Act No. 10 of 2011)	Botswana	This Act provides for environmental impact assessment to be used to assess the potential effects of planned developmental activities. It is used to determine and to provide mitigation measures for effects of such activities.	Environmental permits/approvals should be given before construction of the development takes place.	Section 2.3.3; Section 3

Environmental and Social Safeguard Standard 2 - Natural Habitats

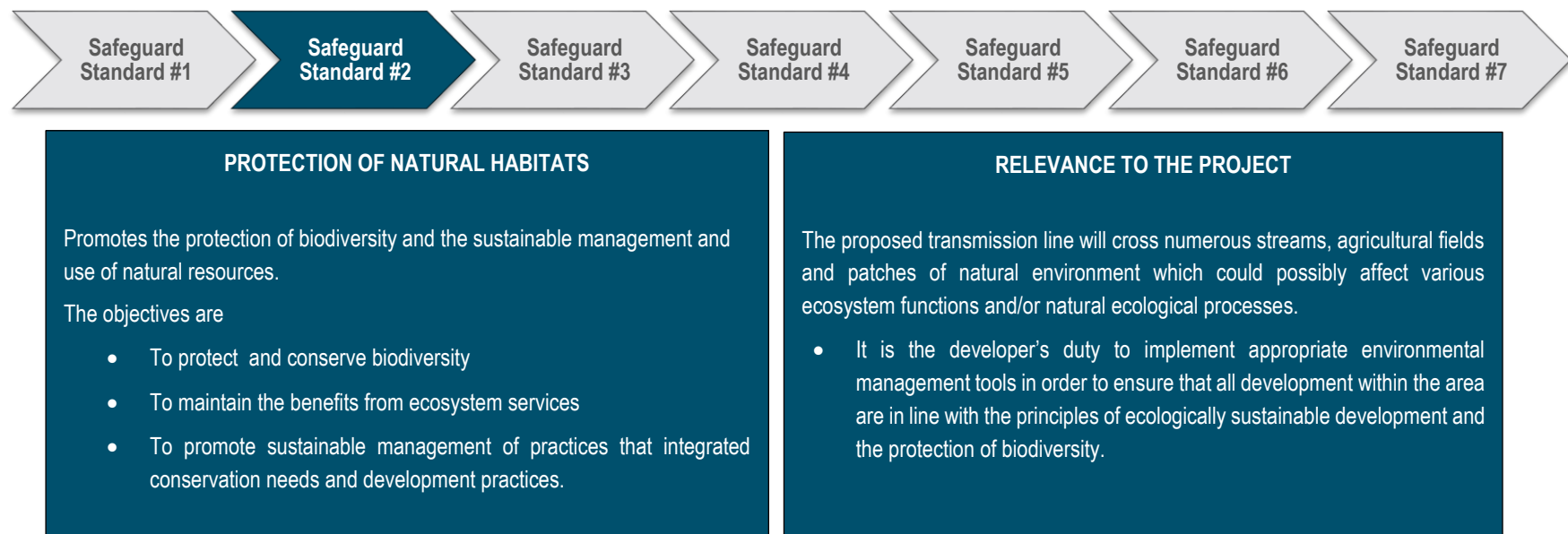


Figure 12: Requirements and applicability of the DBSA Safeguard Standard 2

Table 7: Legislative framework complying with the DBSA Safeguards Standard 2

Legislation(s)	Country	Description	Applicability	Reference in the Report
National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEM:BA)	South Africa	NEM:BA provides for the management and conservation of South Africa's biodiversity within the framework of the NEMA. The Act also provides a list of protected species and identifies restricted activities involving threatened or protected species. Restricted activities include the gathering, collecting, cutting, uprooting, damaging or destroy a listed species.	In accordance with the Act, Eskom has the responsibility to conserve endangered ecosystems and apply appropriate environmental management tools in order to ensure integrated environmental management thereby ensuring that all development within the area are in line with the principles of ecologically sustainable development and the protection of biodiversity.	Section 6.1.5; Section 6.1.6; Section 6.1.7
Conservation of Agricultural Resources Act (Act No. 43 of 1983) (CARA)	South Africa	The Act provides for control over the utilisation of natural agricultural resources in order to promote the conservation of the soil, water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.	Since the proposed route traverses agricultural lands and various water courses, regulatory measures must be adopted to minimise the impacts such as soil erosion, alien encroachment and pollution.	Section 6.2.1
National Veld and Forest Fire Act No. 101 of 1998	South Africa	While much of this Act is aimed at the responsibilities of the landowner, it also states that any person who leaves a fire unattended, lights a fire which spreads, throws out matches or other material subject to spontaneous combustion, or lights a fire on a road verge or smokes in an area where it is prohibited can be charged.	The project is at the high risk of outbreak of fires due to the vegetation throughout the route as such efforts should be made to preserve and guard against such incident, especially through the education of workers on how they should handle flammable products.	Section 6.1.5 Section 6.1.8
Herbage Preservation (Prevention of Fires) Act (1st February 1978)	Botswana	The Act prevents and controls bush fires and other fires.	The project is at the high risk of outbreak of fires due to the vegetation throughout the route as such efforts should be made to preserve and guard against such incident, especially through the education of workers on how they should handle flammable products.	Section 6.1.5 Section 6.1.8

Environmental and Social Safeguard Standard 3 – Involuntary Resettlement

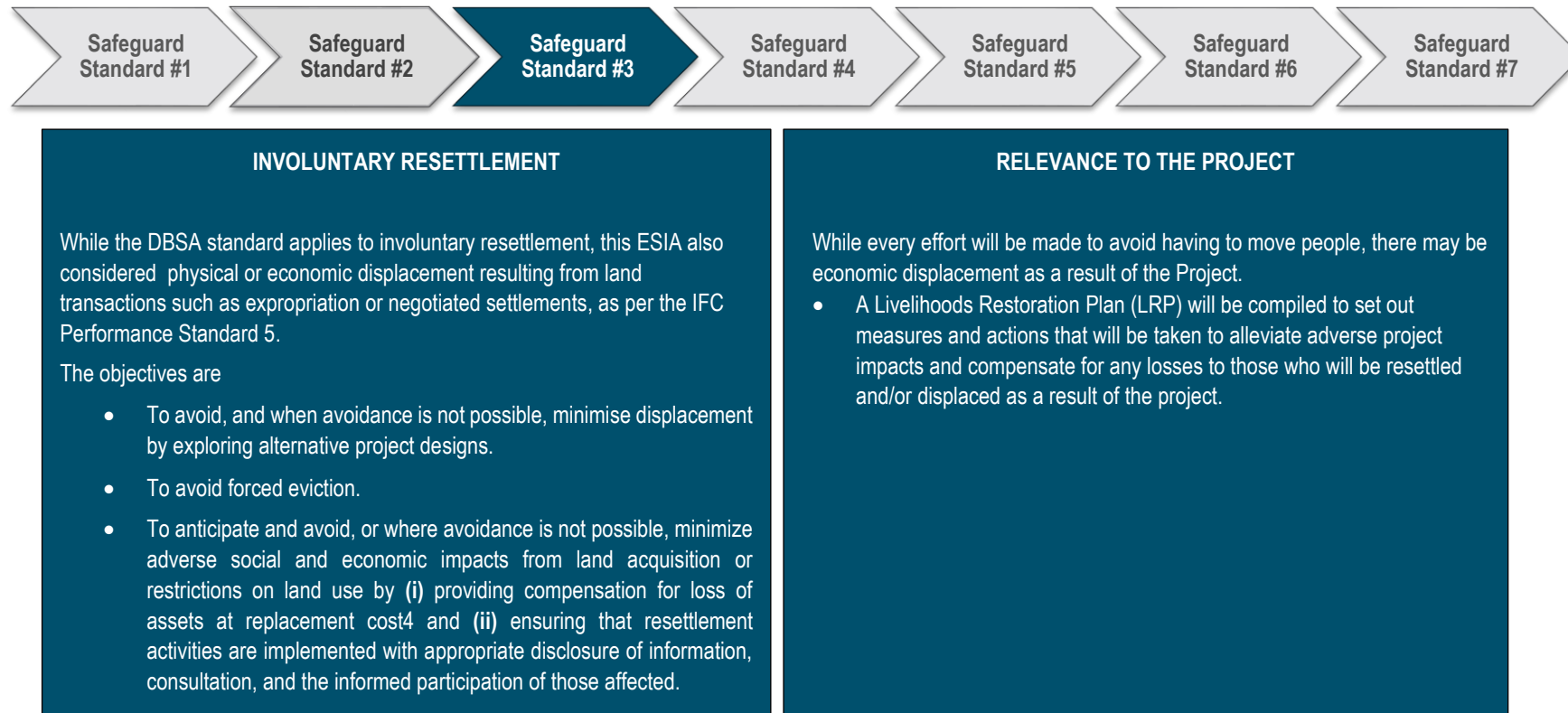


Figure 13: Requirements and applicability of the DBSA Safeguard Standard 3

Table 8. Legislative framework complying with the DBSA Safeguards Standard 3

Legislation(s)	Country	Description	Applicability	Reference in the Report
Expropriation Act (Act No. 63 of 1975)	South Africa	The Expropriation Act ensures that all the relevant expropriation negotiations are undertaken and all the affected parties are compensated accordingly.	Eskom would have to negotiate with the landowners to obtain requisite rights to construct the proposed line over private land. The expropriation process should be undertaken as per the provisions of the Act.	Section 8.7 Annexure D.4 Annexure E.2
Promotion of Administrative Justice Act (Act No. 3 of 2000)	South Africa	This Act regulates the administrative action which materially and adversely affects the rights of any person. Section 3 of the Act stipulates the fair and mandatory procedures that one must follow when making decisions affecting the rights of a particular individual. <i>“...(i) adequate notice of the nature and purpose of the proposed administrative action, (ii) a reasonable opportunity to make representations. (iii) a clear statement of administrative action; (iv) adequate notice of nay right of review or internal appeal, where applicable; and (v) adequate notice of the right to request reasons.”</i>	In terms of this Act, Eskom will give advance notice to all landowners from whom land is to be expropriated for the project.	Section 8.7 Annexure D.4 Annexure E.2
Extension of Security of Tenure Act (Act No. 62 of 1997)	South Africa	This Act aims to facilitate long-term security of land tenure and regulate the conditions of residence on certain land.	The provisions of the Act will apply in the case of any non-landowning residents on land (e.g. farm workers) if such land is to be acquired for the project.	Section 8.7 Annexure D.4 Annexure E.2
Town and Country Planning Act Chapter 32:09 (1980)	Botswana	This Act makes provision for the orderly and progressive development of land in both urban and rural areas and aims to preserve and improve the amenities thereof; for the grant of permission to develop land and for other powers of control over the use of land; and for purposes ancillary to or connected with the matters aforesaid.	Planning permission must be granted by relevant authorities through their different departments.	Section 8.7 Annexure D.5 Annexure E.2

DBSA Environmental and Social Safeguard Standard 4 – Communities and Vulnerable Groups

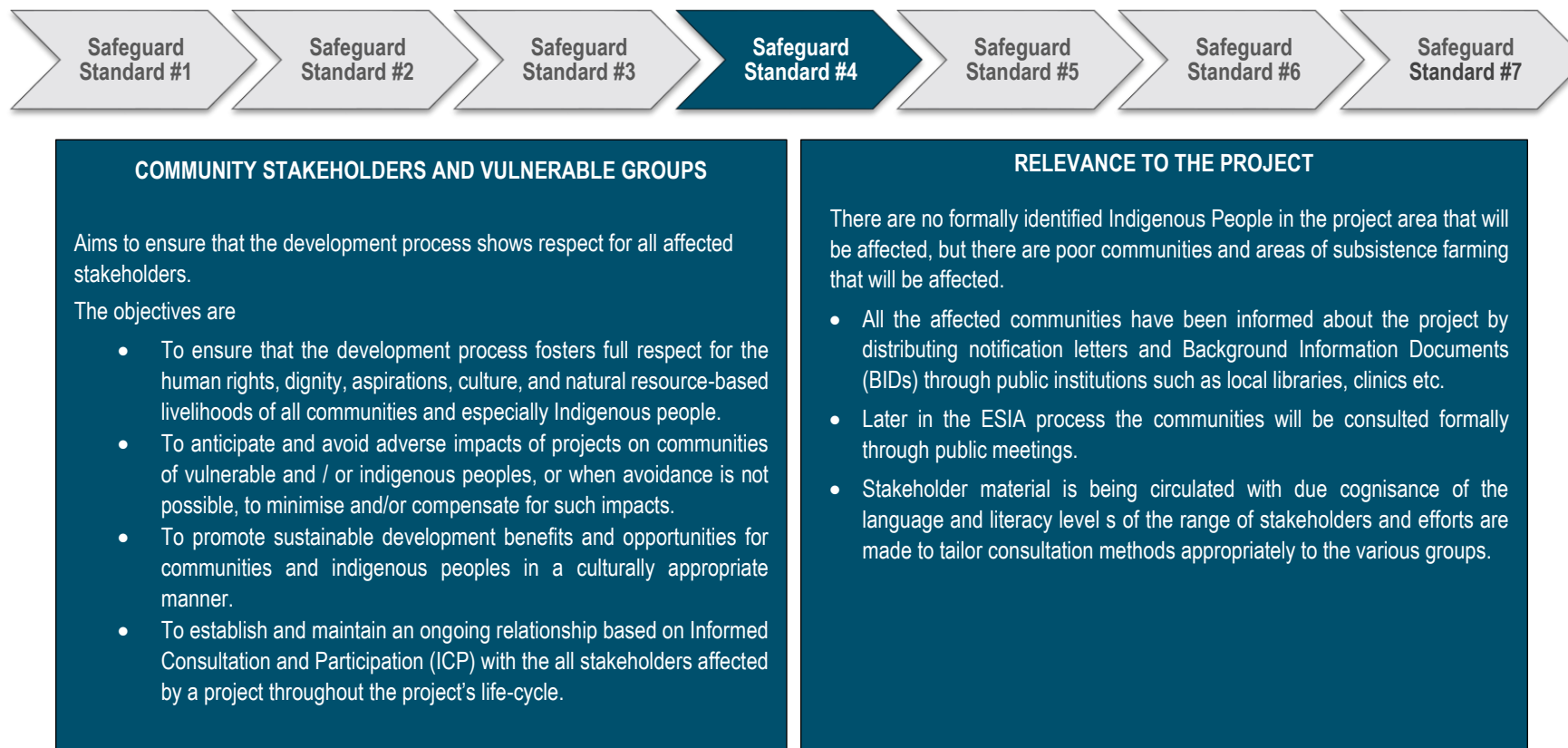


Figure 14: Requirements and applicability of the Safeguard Standard 4

Table 9: Legislative framework complying with the Safeguards Standard 4

Legislation(s)	Country	Description	Applicability	Reference in the Report
Traditional Leadership and Governance Framework Amendment Act (Act No. 23 of 2009)	South Africa	<p>It makes provision for communities to decide for themselves if they want to be regarded as a traditional community in terms of their customs and observe a system of customary law by applying in writing to the Premier.</p> <p>The Act also provides for the establishment and recognition of Traditional Councils, defines the roles and powers of traditional leaders, and provides for dispute resolution and the establishment of a Commission on Traditional Leadership disputes and claims.</p> <p>The authority of the Tribal Authorities in the project area, in terms of acting on behalf of communities in their area of jurisdiction during land acquisition negotiations and granting access for construction work, therefore derives from the provisions of this Act.</p>	The stakeholder engagement process will respect the traditional leadership structures in the various areas and follow the appropriate protocols when consulting with communities.	Section 8.7 Annexure D.4 Annexure E.2
Tribal Land Act (Cap 32: 02 of 1990)	Botswana	This Act controls land use rights and makes provision for the imposition of restrictions on its use. It also regulates the use of tribal land and it is administered by the land board.	Applications for wayleaves must be undertaken with respective land boards.	Section 8.7 Annexure D.5 Annexure E.2

DBSA Environmental and Social Safeguard Standard 5 – Pest Management

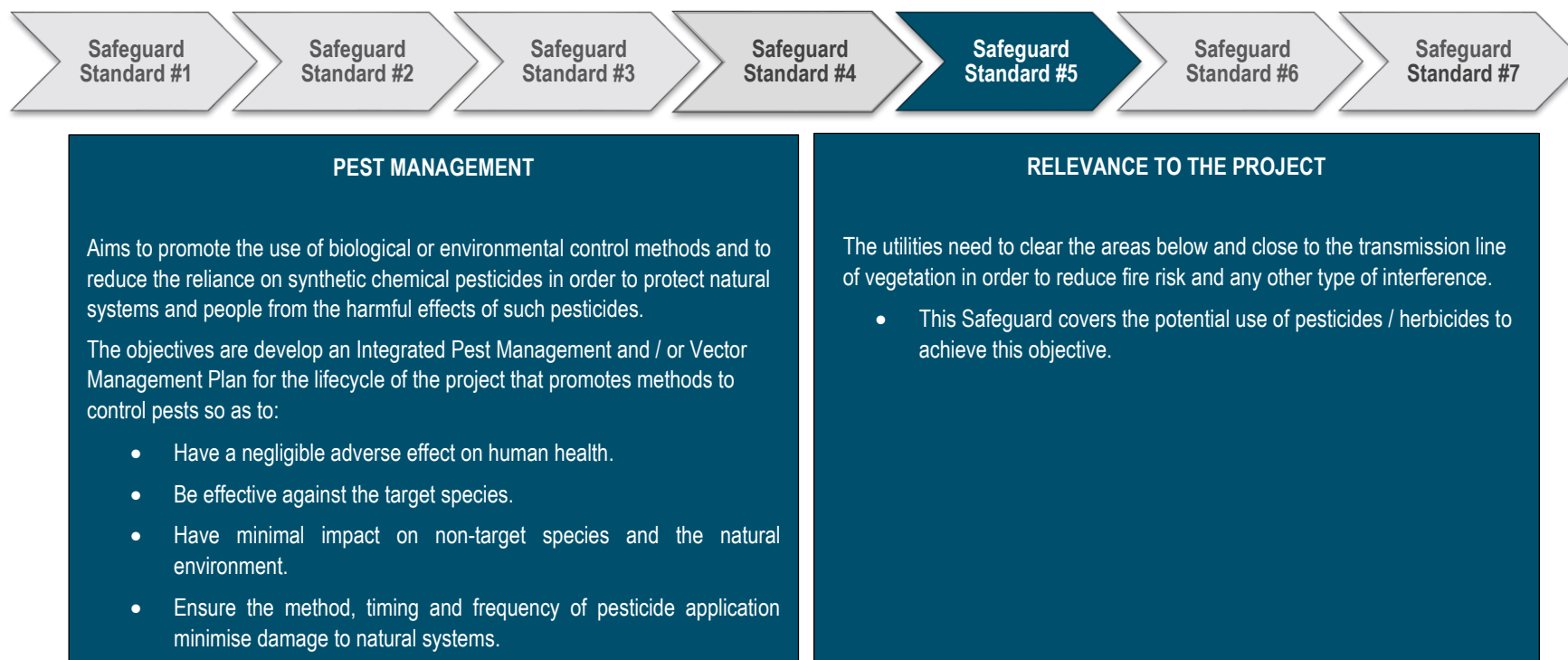


Figure 15: Requirements and applicability of the Safeguards Standard 5

Table 10: Legislative framework complying with the Safeguard Standard 5

Legislation(s)	Country	Description	Applicability	Reference in the Report
National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEM:BA)	South Africa	NEM:BA provides for the management and conservation of South Africa’s biodiversity within the framework of the NEMA.	In accordance with the Act, Eskom has the responsibility to use pesticides / herbicides responsibly to ensure the protection of biodiversity.	Section 4.3.4; Section 6.1.5 Annexure G.1

Legislation(s)	Country	Description	Applicability	Reference in the Report
Occupational Health and Safety Act (Act No. 85 of 1993)	South Africa	Section 8 states that every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of the employees.	Herbicides / pesticides must be applied in a way that will not affect the health of the person applying it.	
National Water Act (Act No. 36 of 1998)	South Africa	The National Water Act (NWA) governs the management of water as one of the nation's common resources. It aims to ensure the sustainable use of water through the protection of the quality and quantity of water resources for the benefit of all water users.	Application of herbicides / pesticides must be undertaken in such a manner that there is no pollution of water resources (above or below ground).	Section 6.1.2; Annexure G.1
Pesticide Management Policy of South Africa	South Africa	Provides guidance on how pesticides should be managed.	Application of herbicides / pesticides must be undertaken in accord with this Policy.	Section 4.3.4; Section 6.1.5 Annexure G.1
National Forest Act (Act No. 84 of 1998)	South Africa	According to the Act, no person is permitted to cut, disturb, damage or destroy any indigenous tree in a natural forest; or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any tree, or any forest product derived from an indigenous tree without a licence. A licence must be issued for a period equal to the period for which the activity.	The application in terms of Section 15 of the NFA will be made if protected tree species will be destroyed or removed during construction.	Section 4.3.4; Section 6.1.5 Annexure G.1
Water Act (Cap. 34:01 of 1968)	Botswana	This Act defines ownership, rights and use of public water. It also prohibits the pollution, fouling or poisoning of, interference with, or flow alteration of public water.	Application of herbicides / pesticides must be undertaken in such a manner that there is no pollution of water resources (above or below ground)..	Section 6.1.2 Annexure G.1

Legislation(s)	Country	Description	Applicability	Reference in the Report
Plant Protection Act (Cap 35:02 of 2007)	Botswana	Provides guidance on action to prevent the introduction or spread of pests.	Ensure that proposed activity does not pose any threats to plant resources in Botswana and necessary measures are taken to prevent the introduction or spread of pests.	Section 4.3.4; Section 6.1.5 Annexure G.1

DBSA Environmental and Social Safeguard Standard 6 – Physical and Cultural Resources

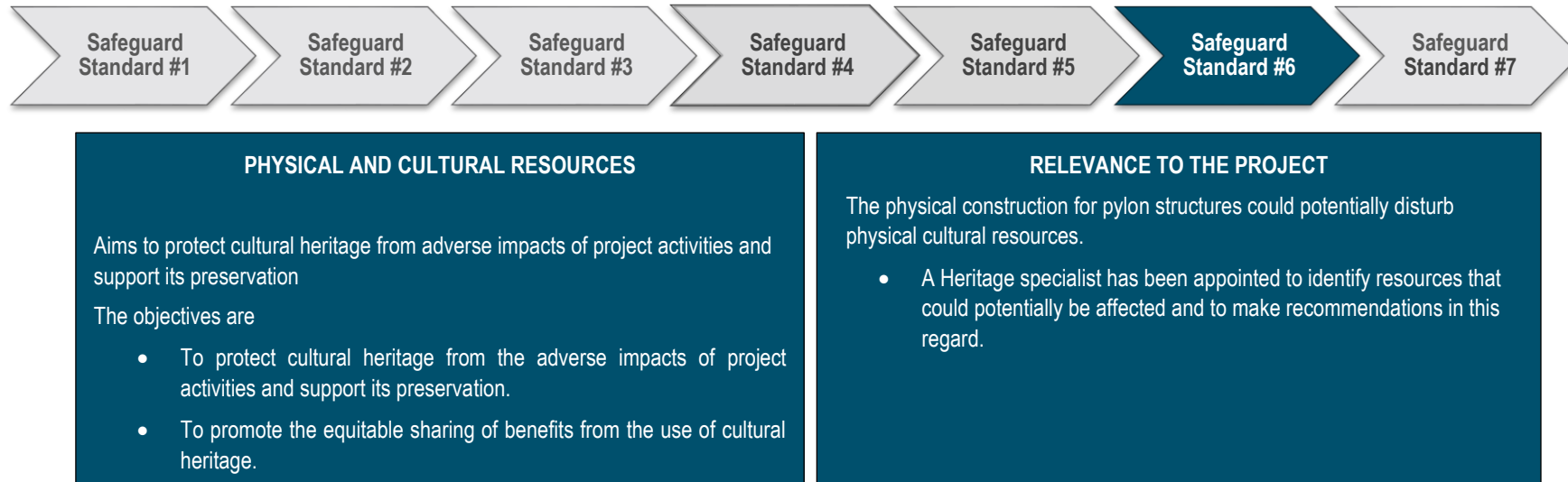


Figure 16: Requirements and applicability of the Safeguards Standard 6

Table 11: Legislative framework complying with the Safeguard Standard 6

Legislation(s)	Country	Description	Applicability	Reference in the Report
National Heritage Resources Act (Act No. 25 of 1999) (NHRA)	South Africa	<p>The NHRA stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority. Section 34 (1) of the NHRA states that <i>“no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority...”</i>.</p> <p>Section 38 of the NHRA also states that any person who intends to undertake a linear development exceeding 300m in length must at the earliest stages of the development, notify the responsible Heritage Resources Authority and furnish them with details regarding the location, nature, and extent of the proposed development.</p>	<p>Construction activities associated with the proposed development could disturb or destroy features of cultural heritage value in the area. These potential impacts will be assessed through a heritage specialist study in the EIA phase.</p> <p>Should a permit be required for the damaging or removal of specific heritage resources, an application would have to be submitted to SAHRA or the relevant provincial heritage agency for the approval of such an activity.</p> <p>The South African Heritage Resources Authority (SAHRA) and North West Provincial Heritage Resources Authority were notified of the proposed project.</p>	Section 6.2.2; Annexure G.5
Monuments and Relics Act 12 of 2001	Botswana	<p>In terms of the Monuments and Relics Act 12 of 2001 section 19(2) both an archaeological predevelopment impact assessment and an environmental assessment study must be undertaken by any person wishing to undertake a major development such as construction or excavation, for the purposes of mineral exploration and prospecting, mining, laying of pipelines, construction of roads and dams, or erection of any other structure, which will physically disturb the earth's surface.</p>	<p>The project has engaged a Department of National Museums and Monuments approved archaeologist.</p>	Section 6.2.2; Annexure G.5

DBSA Environmental and Social Safeguard Standard 7 – Safety of Dams NOT APPLICABLE TO THIS PROJECT

2.3.2 IFC Performance Standard 2, 3 and 4

A number of the conditions of the IFC Performance Standards are not included directly in the DBSA Safeguards Standards and as SAPP complies with the IFC Performance Standards, the Performance Standards of relevance are identified below (

Table 12-Table 14 and Figure 17-Figure 19).

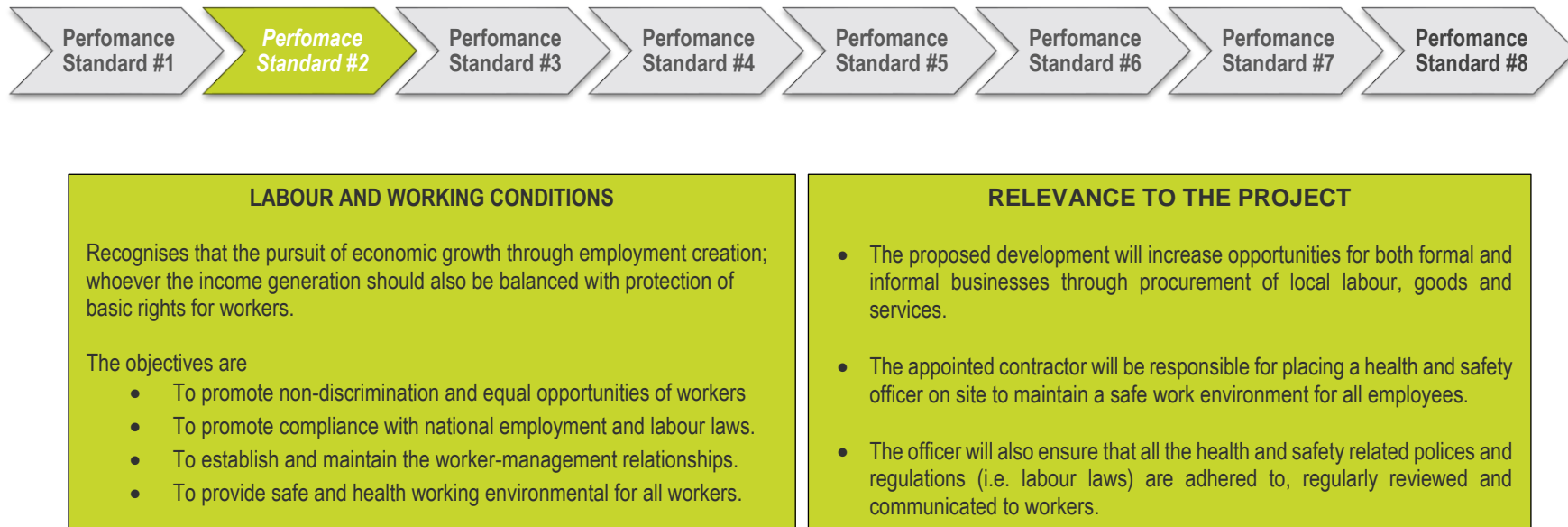


Figure 17: Requirements and applicability of the IFC Performance Standard 2

Table 12: Legislative framework complying with the IFC Performance Standard 2

Legislation(s)	Country	Description	Applicability	Reference in the Report
Basic Conditions of Employment Act (Act No. 75 of 1997)	South Africa	The objective of this is Act is to give effect and regulate the right to fair labour practices conferred by section 23(1) of the Constitution by enforcing basic conditions of employment and regulating the variation of basic conditions of employment.	Eskom and/or contractor will be responsible for ensuring there is a committee in place to enforce employment policies, practices and/or specifications relating to remuneration, training, leave, working hours and termination of employment.	Annexure G.4
Occupational Health and Safety Act (Act No. 85 of 1993)	South Africa	Section 8 states that every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of the employees.	Eskom and/or contractor will be responsible for ensuring that the work environment is safe for workers and that applicable safety gear is provided during the construction, operational and decommissioning phases.	Annexure G.4
Employment Act, 1992	Botswana	This Act provides for the legal rights of the employer and employee's relations.	The contractor is bound by this Act to fairly treat his employees and the employees are also bound by the Act to abide by their contracts.	Annexure G.4
Policy on Health & Occupational Safe Environment (2007)	Botswana	Employer is responsible for providing safe working environment, by identifying hazards, educating employees and helping in protecting them against work hazards.	BPC and/or contractor will be responsible for ensuring that the work environment is safe for workers and that applicable safety gear is provided during the construction, operational and decommissioning phases.	Annexure G.4



RESOURCE EFFICIENCY AND POLLUTION PREVENTION

Recognises that increased industrial activity and urbanization often generate higher levels of air, water and land pollution, and that there are efficiency opportunities. The objectives are

- To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities.
- To promote more sustainable use of resources, including energy and water.
- To reduce project-related GHG emissions.

RELEVANCE TO THE PROJECT

- A waste management plan (WMP) must be compiled and implemented throughout the project lifecycle.
- This plan must be in line with the Mahikeng Local Municipality's WMP
- Health and safety management plan must be compiled and implemented.
- Continuous evaluation measures must be put in place to ensure the efficiency of the health, safety and environmental performance throughout the project life cycle.

Table 13: Legislative framework complying with the IFC Performance Standard 3

Legislation(s)	Country	Description	Applicability	Reference in the Report
National Environmental Management: Waste Act (Act No. 59 of 2008)	South Africa	This Act aims to regulate waste management to protect human health and the environment by putting measures in place to prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources.	As required by the Act Eskom and associated contractor(s) must avoid the generation of waste, reduce, re-use, recycle or recover where feasible. These general principles of responsible waste management will be incorporated into the requirements in the ESMP to be implemented for this project.	Section 4.3.3
National Environmental Management: Air Quality Act, 2008 (Act No. 39 of 2008)	South Africa	The National Environmental Management: Air Quality Act (NEM:AQA) provides for setting of standards for regulating and monitoring air quality and/or dust so as to protect the environment and human health.	It is anticipated that dust will be generated during the construction phase of the project with large earth moving equipment and the transport of construction material to and from the site on unpaved roads. Therefore ambient dust must be monitored in order to ensure the environment that is not harmful to the health and well-being of people.	Section 6.2.1 Annexure G.4
National Water Act (Act No. 36 of 1998)	South Africa	The National Water Act (NWA) governs the management of water as one of the nation's common resources. It aims to ensure the sustainable use of water through the protection of the quality and quantity of water resources for the benefit of all water users. According to the Act, a person can only be entitled to use water if the use is permissible under the NWA. Section 21 of the NWA specifies the water uses which	The proposed development will trigger a Water Use Licence Application (WULA) for the crossing of watercourses. However, the WUL process will only commence during the ESIA Phase of the project. The water use and prevention of pollution of water resources during construction will be managed according to the ESMP and conditions of the WULA.	Section 6.1.2 Annexure G.1

Legislation(s)	Country	Description	Applicability	Reference in the Report
		require authorisation from the DWS prior to the commencement of the activity.		
Electricity Regulation Act (Act No. 4 of 2006)	South Africa	This is the national regulatory framework that governs the generation, transmission, distribution and trading of electricity in South Africa. It also regulates the applications for the licences required and issued under the Act.	Licensing is one of the tools to ensure and promote a sustainable use of energy.	Section 4.3.2
Atmospheric Pollution (Prevention) Act (Cap. 65:03 of 1971)	Botswana	This Act provides for the prevention of pollution of the atmosphere by the carrying on with industrial processes and for other matters incidental.	Dust will be generated from movement of vehicles and emissions may be released from vehicles and machinery during the construction of the proposed lines. Measures will be put in place in order to avoid decreasing air quality in the area.	Section 6.2.1 Annexure G.4
Waste Management Act (Cap. 65:06 of 1998)	Botswana	This Act relates to management of controlled and hazardous waste. This includes the provision of waste management plans.	The proposed development will generate waste in the form of builder's rubble during construction, oil spills and general waste (paper, glass and liquid waste) during operation. There should be a waste management strategy for the development which should focus on Recycling, Reduction and Re-use of waste materials.	Section 4.3.3
Water Act (Cap. 34:01 of 1968)	Botswana	This Act defines ownership, rights and use of public water. It also prohibits the pollution, fouling or poisoning of, interference with, or flow alteration of public water.	Ground and surface water is susceptible to contamination from inappropriate storage of fuels and lubricants at construction camps. Measures must be implemented to avoid the pollution of surface and underground waters and any contamination of water as a result of the construction or operation of the development should be reported to Water Utilities Corporation.	Section 6.1.2 Annexure G.1

Legislation(s)	Country	Description	Applicability	Reference in the Report
Electrical Supply Act Chapter 73:01	Botswana	The Act deals with generation and supply of electricity	As per Electrical Supply Act Chapter 73:01 Section 6: Wayleaves over Land, BPC has the right to place any transmission line, whether above or below ground, into, out of or across any land, other than land covered by buildings.	Section 4.3.2

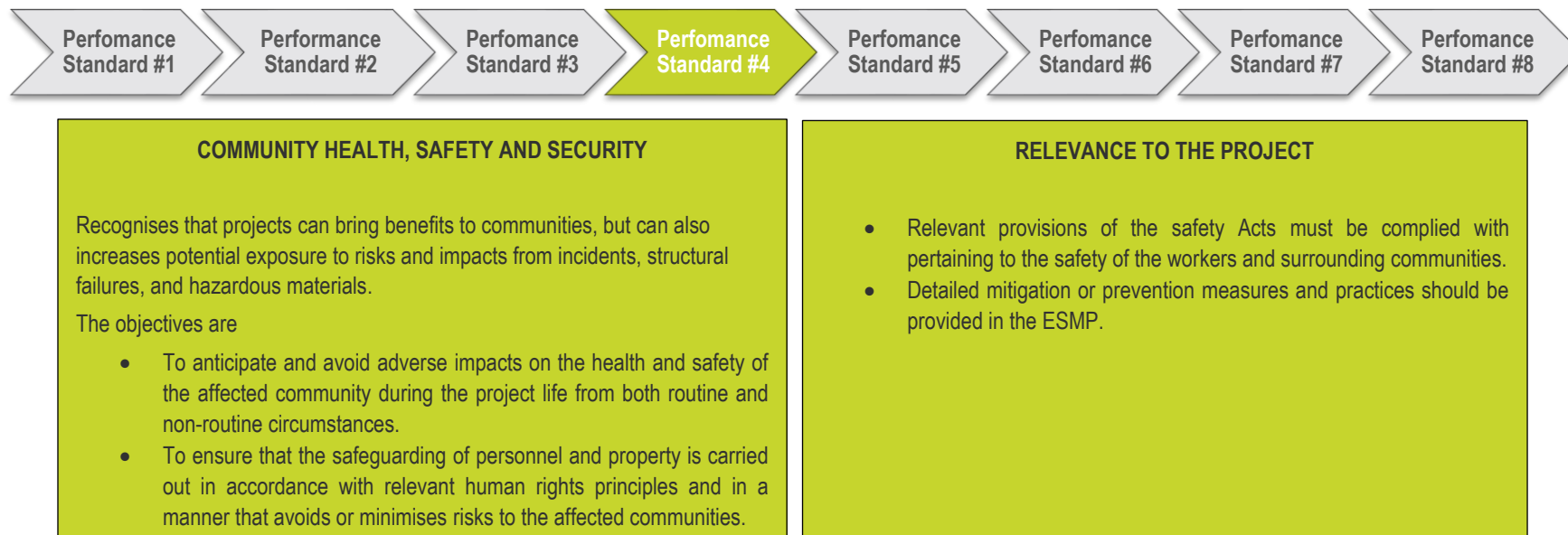


Figure 19. Requirements and applicability of the IFC Performance Standard 4

Table 14: Legislative framework complying with the IFC Performance Standard 4

Legislation(s)	Country	Description	Applicability	Reference in the Report
Occupational Health and Safety Act (Act No. 85 of 1993)	South Africa	<p>Section 8 states that every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of the employees.</p> <p>Section 17 obliges every employer who has more than 20 employees in the workplace to appoint a health and safety representative for such workplace.</p>	The health and safety representative appointed will be responsible for ensuring that the health and safety measures necessary to adhere to throughout the project.	
National Road Traffic Act (Act No. 93 of 1996)	South Africa	<p>This legislation regulates all the national roads and issues pertaining to road safety in South Africa.</p> <p>According to this Act, the roads authorities are obliged to ensure compliance with provisions of this Act:</p> <ul style="list-style-type: none"> • No person shall display any road traffic sign on a public road unless having been authorised • No person shall drive a vehicle on a public road recklessly or negligently • No person shall operate a motor vehicle which is not in a roadworthy condition on a public road • No person shall, unless otherwise directed by a traffic officer, fail to comply with any direction conveyed by a road traffic sign displayed in the prescribed manner. 	<p>Construction vehicles are likely to make use of the existing roads to transport equipment and material to and from the construction site. Construction related traffic could impact negatively on the traffic flow and on conditions of the affected roads.</p> <p>Relevant provisions of the Road Traffic Act must be complied with pertaining to the diversion of the traffic for the road crossings, the correct licensing for all drivers on site as well as the ensuring that all vehicle and plant is road worthy.</p> <p>During construction, the contractor will need to provide high standard warnings and traffic calming measures where construction activities interfere with traffic.</p>	<p>Section 4.3.3</p> <p>Section 4.3.4</p>

Legislation(s)	Country	Description	Applicability	Reference in the Report
Hazardous Substances Act (Act No 15 of 1973)	South Africa	This Act regulates the substance which may cause injury or ill-health to or death of human beings due to any toxic substances or products	As at any construction site, various hazardous substances are likely to be used and/or stored on site. Hazardous substances must be stored and handled in accordance with the appropriate legislation and standards, and the contractor must ensure that all relevant Material Safety Data Sheets are kept on site at all times for safety and auditing purposes. Further to the provisions of this Act, the management of these substances will be management through the implementation of the SEMP.	
Public Health Act (Cap. 63:01 of 1981)	Botswana	An Act to make the notification of certain diseases compulsory and to control such diseases; to make provision regarding diseases subject to the International Health Regulations; to prevent the spread of smallpox; to prevent the introduction of diseases into Botswana; to control advertisements and publications concerning venereal disease; to regulate sanitation and housing; to provide for the protection of foodstuffs and of water supplies; to regulate the use of cemeteries; and generally to make provision for public health.	The Contractor should adhere to the requirements of the Act.	Section 6.2.1 Annexure G.4
Road Traffic Act Chapter 69:01 (1975)	Botswana	An Act to provide for the registration and licensing of motor vehicles; for the issue of driving licences; for the creation of offences relating to the use of vehicles and for the regulation of traffic; and for matters incidental thereto.	Road signs should be obeyed and appropriated road signs should be put in place to avoid road accidents where works take place along and/or in close proximity to public roads. All vehicles that are going to be used should be registered and used for the purpose they are meant for.	Section 4.3.3 Section 4.3.4

2.3.3 Listed Activities

2.3.3.1 South Africa

During the screening process of deciding whether an ESIA is required for the project, the following listed activities in terms of NEMA were triggered, indicating the need for a full EIA process in South Africa, rather than a Basic Assessment process.

Table 15: South Africa: NEMA listed activities

Listed Activity	Description of the Activity	Relevance to the project
GN R983 Activity 11	<i>The development of facilities or infrastructure for the transmission and distribution of electricity – (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.</i>	The proposed transmission line is a 400 kilovolts line and it may traverse urban areas or industrial complexes between Mahikeng (RSA) and Isang (Botswana)
GN R983 Activity 12	<i>The development of- (xii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs- (a) within a watercourse.</i>	The transmission line will traverse numerous water resources, include but not limited to the following:
GN R983 Activity 14	<i>The development of: The development of facilities or infrastructure for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres but not exceeding 500 cubic metres.</i>	The construction phase may include the storage of hydrocarbons in the lay down areas for construction machinery and/or vehicles.
GN R983 Activity 19	<i>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shell grit, pebbles or rock of more than 5 cubic metres from – (i) a watercourse.</i>	Due to the length of the proposed transmission line, it will be necessary to cross various watercourses. The need to impact on a watercourse by removing soil, sand, pebbles or rock in order to erect towers may arise.
GN R983 Activity 27	<i>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation</i>	The proposed 210 km transmission line, of which 146 km is in South Africa, may traverse indigenous vegetation. Due to the size of the tower footprint it may be necessary to clear more than 1 hectare of indigenous vegetation.
GN R984 Activity 9	<i>The development of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex.</i>	The project entails the development of a 400 kV transmission line from the Watershed B area close to Mafikeng to the Isang substation in Botswana. The majority of the corridor will be outside urban areas or industrial complexes.

Listed Activity	Description of the Activity	Relevance to the project
GN R985 Activity 4	<p><i>The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres.</i></p> <p>North West</p> <p><i>(vi) Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland.</i></p>	The construction phase may include the storage of hydrocarbons in the lay down areas for construction machinery and/or vehicles.
GN R985 Activity 12	<p><i>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</i></p> <p>North West</p> <p><i>(vi) Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland.</i></p>	Clearance of vegetation within watercourse or 100m from the edge of a watercourse might be required.
GN R985 Activity 14	<p><i>The development of —</i></p> <p><i>(ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs—</i></p> <p><i>(a) within a watercourse;</i></p> <p>North West</p> <p><i>(iv) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;</i></p> <p><i>(vi) Areas within 5 kilometres from protected areas identified in terms of NEMPAA or from the core areas of a Biosphere reserve.</i></p>	<p>The proposed transmission line will have a footprint of 210 000m (L) X 1000m (W). The line will traverse numerous water courses.</p> <p>According to the North West Biodiversity Conservation Assessment Report⁴ it all falls within two Critical Biodiversity Areas (CBA), namely CBA T1 and T2.</p> <p>The proposed corridor is also within 5km of the Madikwe Nature Reserve along the South Africa - Botswana border,</p>

2.3.3.2 Botswana

Table 16: Botswana: EIAA listed activities

Listed Activity	Description of the Activity	Relevance to the project
The EIA Regulations 2012 Schedule 1 Transboundary Projects	All projects that have transboundary impacts such as fences, bridges, water transfer schemes and power plants and power lines.	The project crosses into South Africa

⁴ Department: Agriculture, Conservation, Environment and Rural Development (DACERD) (2009). North West Province Biodiversity Conservation Assessment Technical Report. Version 1.

Listed Activity	Description of the Activity	Relevance to the project
The EIA Regulations 2012 Schedule 1 Infrastructure developments	Installations of power lines	The project is a 400kV powerline between Botswana and South Africa.

2.4 Applicable National Policies, Plans and Strategies

The following policies, plans and strategies will be considered during the ESIA:

<u>SOUTH AFRICA</u>	<u>BOTSWANA</u>
<ul style="list-style-type: none"> White Paper on the Energy Policy of the Republic of South Africa (1998); Draft Post-2015 National Energy Efficiency Strategy (NEES) (2016); Integrated Resource Plan for Electricity (IRP), 2010-2030 (2013); The National Development Plan 2030 (2012); Strategic Plan 2015-2020 – Department of Energy; Integrated Energy Plan (IEP) 2016; Integrated Development Plans (IDP) of Ngaka Modir Molema District Municipality 2012/2016; and Integrated Development Plans (IDP) of Ramotshere Moiloa Local Municipality 2015/2016. 	<ul style="list-style-type: none"> National Policy on Natural Resources Conservation Development Government Paper No.1 of 1990 Development Control Code, 2013 Waste Management Strategy, 1998 Botswana Waste Water and Sanitation Policy-1999 Composition of Municipal Solid Waste in Botswana, Southern Africa, 2012 National Policy on HIV/AIDS (1998)

2.5 Applicable Guidelines

This EIA process is informed by the series of national and international Environmental Guidelines, where applicable and relevant:

<u>INTERNATIONAL</u>
<ul style="list-style-type: none"> International Finance Corporation. (2010). Guide to Human Rights Impact Assessment and Management. Equator Principles. (2014, March). EP Guidance for consultants Independent Review. Retrieved from check GEF. (2017). Review of the GEF Policy on Agency Minimum Standards on Environmental and Social Safeguards. <ul style="list-style-type: none"> IFC. (2012). Performance Standards on Environmental and Social Sustainability. .

- SAPP. (2010). Environmental and Social Impact Assessment Guidelines for Transmission Infrastructure for the SAPP Region.
- DBSA. (2015). Environmental and Social Safeguard Standards.

SOUTH AFRICA

- EIA Guideline for Renewable Energy Projects (DEA, 2015).
- Scoping, Integrated Environmental Management Information Series 2 (DEAT, 2002).
- Stakeholder Engagement, Integrated Environmental Management, Information Series 3 (DEAT, 2002).
- Specialist Studies, Integrated Environmental Management, Information Series 4 (DEAT, 2002).
- Criteria for determining Alternatives in EIA, Integrated Environmental Management, Information Series 11 (DEAT, 2004).
- Environmental Management Plans, Integrated Environmental Management, Information Series 12 (DEAT, 2004).
- Guideline for involving biodiversity specialists in EIA processes. Edition 1 (Brownlie, 2005).
- Guideline for the review of specialist input into the EIA processes: Edition 1 (Keatimilwe and Ashton, 2005).
- Guideline for Environmental Management Plans (Lochner, 2005).
- Guideline for determining the scope of specialist involvement in EIA processes: Edition 1 (Münster, 2005).
- Guideline on Need and Desirability, Integrated Environmental Management Guideline Series 9 (DEA, 2010).
- Public Participation 2010, Integrated Environmental Management Guideline Series 7 (DEA, 2010).
- Guidelines to minimise the impact on birds of Solar Facilities and Associated Infrastructure in South Africa (Smit, 2012).
- Guideline on Need and Desirability, EIA Guideline and Information Document Series (Department of Environmental Affairs and Development Planning (DEA&DP), 2013).
- Guideline on Alternatives, EIA Guideline and Information Document Series (DEA&DP 2013).

SECTION 3

3 ESIA Process and Approach

The ESIA is an interdisciplinary process that typically follows distinct phases. Each includes some form of public engagement and/or consultation. While this process is not uniform from country to country it generally consists of similar procedural steps as described below. The process in the centre represents best international practice for ESIA, as informed by the IFC Performance Standards

SOUTH AFRICA

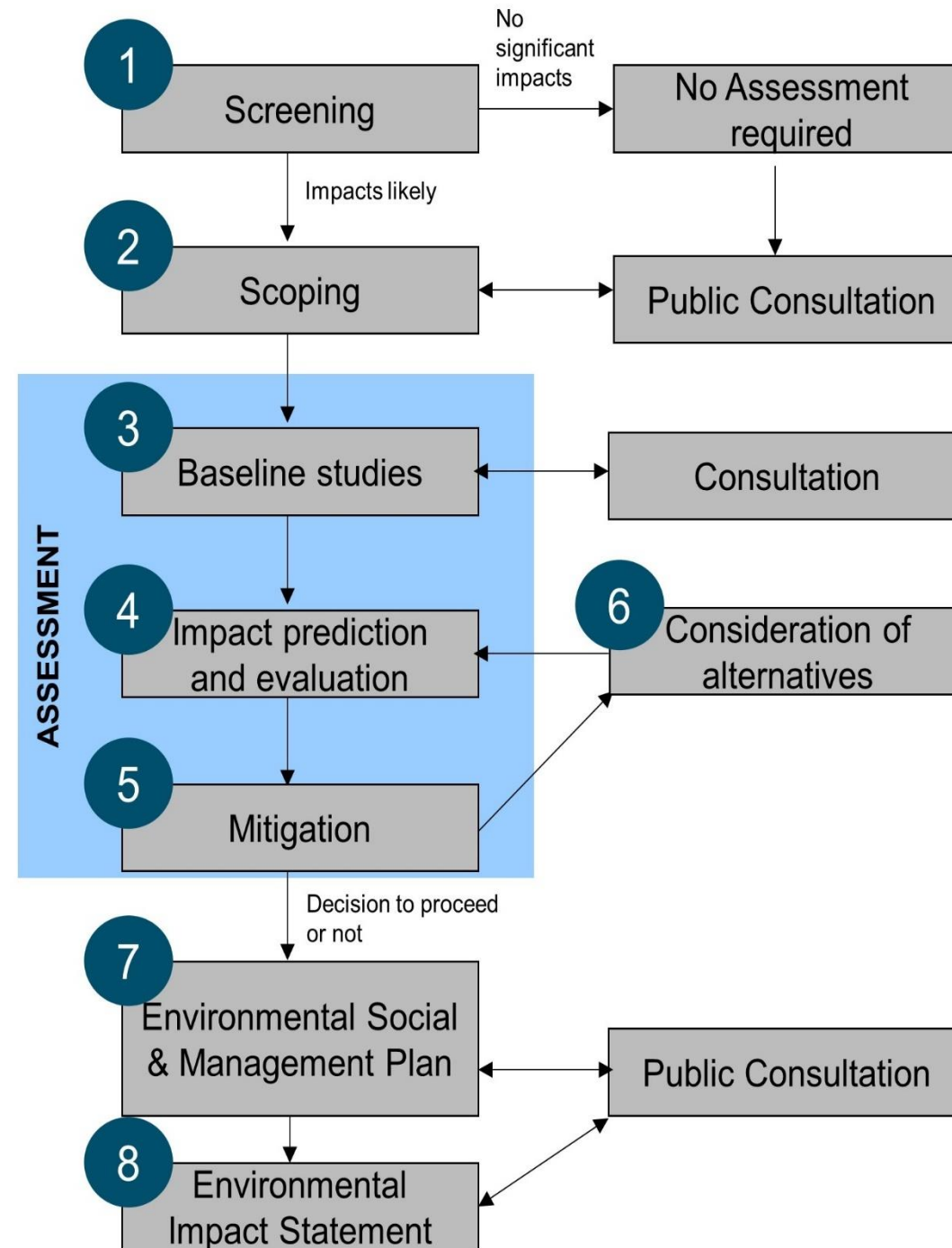
- Pre-application consultation with Competent Authority (CA)
- Initial Public Engagement (Issuing of notifications and BIDs)
- Submission of Environmental Authorisation (EA) application

NOTE: Screening is not stipulated as part of the regulatory process therefore has no specified timeframes. It is the responsibility of the applicant to do the screening exercise.

- Preparation and submission of a Draft Scoping Report (DSR) and Plan of Study (PoS) for ESIA (**44 days** from acceptance of application including the commenting period of **30 days**).
- DSR is finalised by addressing the comments received. Final Scoping Report and PoS for ESIA are submitted for authority review. The CA has **43 days** to make a positive or negative decision.

- Draft Environmental Impact Report (EIR) and ESMP Phase: **106 days** including the commenting period of **30 days**.
- Final EIR and ESMP – the CA has **107 days** to review – grant or refuse Authorisation.

- Applicant is notified of the decision within **5 days**.
- All registered I&APs are to be notified, in writing within **14 days** of the date of the Department's decision.
 - EA appeal process is finalised in **90 days**.



BOTSWANA

- Submission of a Project Brief to DEA Botswana
- Review by DEA Botswana should take a week

- Terms of Reference and Scoping Report
- Advertising of intended activity once for a period not less than 21 days using official languages.
 - After **21 days** hold public meetings
- Consultations with government departments, NGOs and businesses.
- Submission of ToR and Scoping report to DEA
 - The Act provides **30 days** for review.

- Draft Environmental Impact Assessment Report
- Develop an Environmental Management Plan
 - Develop a Monitoring Plan
 - Further consultations if necessary
- Submit Environmental Impact Assessment Statement (EIS) to DEA
 - The Act provides **60 days** for review.

- Public Review Period
- Draft adverts stating impacts and mitigation measures as contained in the EIS for DEA approval
- Publish adverts in a nationally circulating paper and Government Gazette for **4 weeks**
- Obtain approval from DEA if no further comments are raised
 - The Act provides **60 days** for review.

Figure 20: ESIA Process

3.1 Pre-feasibility Phase

A high level assessment of the general study area was undertaken as part of the Transaction Advisor Process to determine constraints and opportunities and to develop potential line route corridors between Watershed B and Isang substations. 19 routes were originally identified and screened down to the 5 most suitable alternatives to be examined in more detail. Assessment of 5 **alternative routes** for the transmission line was undertaken using a Multi-Criteria Decision Making (MCDM) model. This allowed for the preferred alternative to be selected in an integrated manner, based on technical, environmental and social criteria. The Watershed B site was originally located to the south east of Mafikeng but due to altered growth loads and updated objectives for Eskom, the site was moved to the north west of Mafikeng. This required an additional process in the pre-feasibility stage to assess constraints and opportunities associated with linking the proposed Watershed B substation to the existing Isang substation. A new route was thus found to link to the existing preferred route to Isang, following the same process that was used to determine the original preferred route. This is the route which has been taken forward into the Scoping and ESIA phases. The Route Selection Report is included in **ANNEXURE F** and is detailed in **Section 5**.

3.2 Screening Phase

The screening process is a high-level analysis undertaken to determine what, if any, environmental authorisations may be required for the proposed development. The activities proposed as part of the Project, the prevailing legislation and the receiving environment were assessed to determine the level of assessment required. In terms of NEMA, a full ESIA is required and as the global standards require adherence to host country standards as a minimum, this is then a Category A project in terms of the IFC Performance Standards and a Category 1 project in terms of the DBSA Safeguards Standards.

Pre-application meetings were held with both the DEAs in South Africa and Botswana to introduce the project to the authorities and to ensure that the ESIA process is in line with South African and Botswana requirements and/or expectations. Notes from the meetings with DEA in both countries is included in **ANNEXURE C1 and C.2**. A Project Brief with a brief overview of the Project was submitted to DEA in Botswana in line with their process requirements (**ANNEXURE C.1**).

3.3 Scoping Phase

The activities outlined below were undertaken as part of the Scoping Process. Details of Stakeholder Engagement are provided in Section 7 and **ANNEXURE E.2**.

- **Identification and involvement of relevant authorities** and Interested and Affected Parties (I&APs) with the release of a Background Information Document (BID) for a period of 30-days in order to elicit their interest in the project.
- Selection of the full range of **feasible alternatives** to be taken through to the ESIA phase.
- Identification of key **potential environmental and social issues** and potential mitigation measures.
- Development of the **Terms of Reference (ToR)** for the specialist studies to be carried out during the impact assessment phase, based on issues identified to ensure that studies are focused on key and relevant issues.
- Development of Plan of Study (POS) for ESIA and Scoping Report from information gathered the Pre-feasibility and Screening process.

- A second round of **public consultation**, involving the release of the Scoping Report for public review, together with public meetings, allowing for I&APs and / or relevant authorities to learn about a proposed project and comment.

3.4 Assessment Phase

The assessment stage involves the evaluation of the impacts identified in the scoping to determine their nature, temporal and spatial scale, reversibility, magnitude, likelihood, extent and subsequently design mitigation measures, in the context of baseline conditions. Such detailed impact analysis involves:

- Selective **walk through or site visit** of the proposed route by all the technical specialists.
- **Compilation of the ESIA Report** incorporating the specialists’ findings and recommendations.
- Advertisement of the release of the reports for **public comments** and holding of appropriate public or focus groups meetings.

3.5 Consideration of alternatives

The NEMA and the EIAA requires that alternatives be considered during the ESIA process. This step can be done later in the process when all alternatives are assessed in detailed in the ESIA assessment phase. However, by identifying constraints in the early and/or planning stages of the project, and doing a high level assessment of alternatives at this stage, the project can be designed around the constraints and opportunities. This assists in ensuring a smoother transition through the project phases and prevents delays.

A number of aspects were taken into account when considering potential alternatives. The following project alternatives were considered in this study:

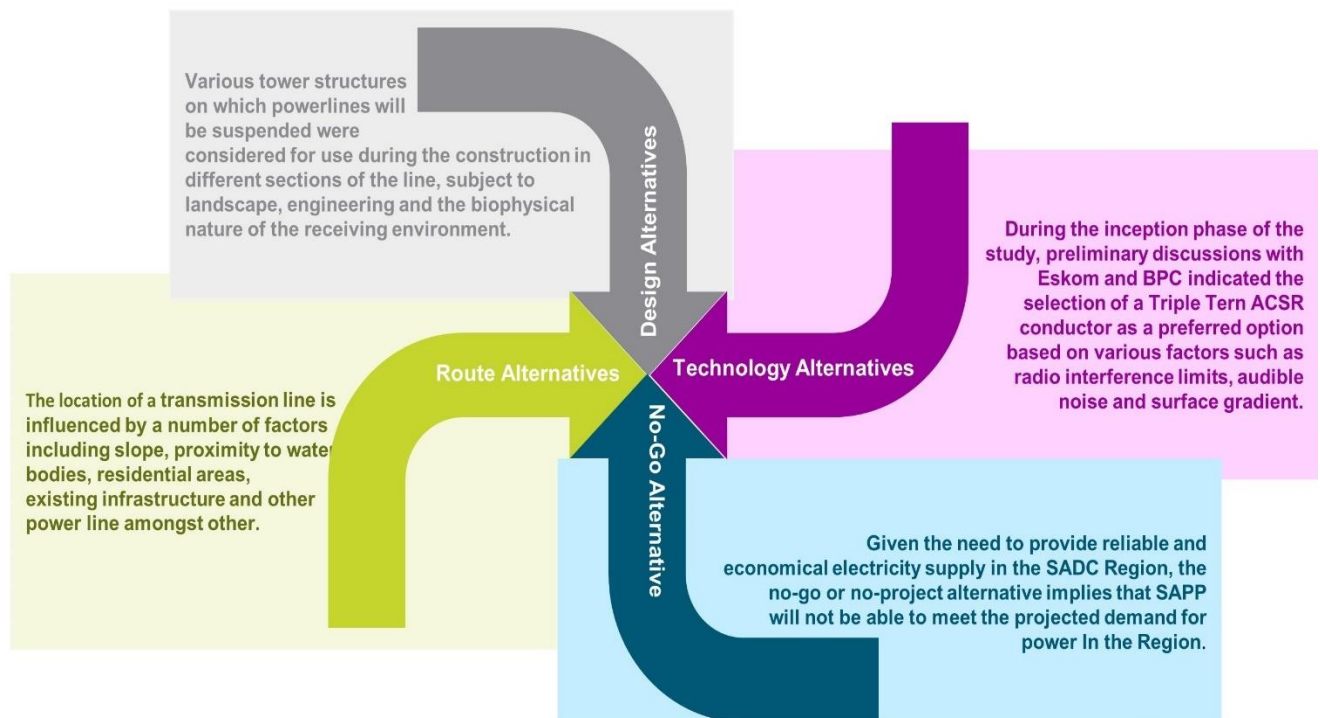


Figure 21: Project Alternatives considered

3.6 Environmental and Social Management Plan

The purpose of the Environmental and Social Management Plan (ESMP) is to provide a framework within which the environmental and social risks and liabilities identified during the ESIA process are managed for the lifecycle of the Project. The ESMP will also aim to address occupational health and safety issues that may be associated with project. The plan will also outline a detailed implementation and monitoring costs associated with the activities planned and audit plan to measure compliance.

The ESMP is used by the appointed contractor as a **legal guideline for environmental best practice** and will form part of the contract, supplementary to tender documentation.

The ESMP should be considered as a “live” document, applicable to the specific project. The ESMP should be reviewed and amended in response to any change in the scope of works or nature of the construction activities to ensure applicability to the project.

The ESMP will compiled along with the Environmental Impact Statement (also known as Environmental Impact Report).

3.7 Environmental Impact Statement

The Environmental Impact Statement (EIS) (also known as Environmental Impact Report (EIR) in South Africa) is one of the **last steps** of the process. Both the EIS and ESMP will be made available to **the I&APs and public for comments**. Taking into account all the comments received, the reports will be **finalised and submitted to the relevant CA for approval**.

SECTION 4

4 Project Description

The purpose of this chapter is to provide an overview of the proposed project and associated activities to be undertaken during different phases of the project

The transmission line route described in this chapter is the preferred alternative, determined after a detailed process to determine the most environmentally, socially and technically suitable option to avoid areas of environmental and social concern. A detailed description of alternatives is provided in **Section 5**.

4.1 Site Location and Extent

The proposed 210 km transmission line stretches between the Mafikeng area in South Africa and Gabarone in Botswana, with the longest section (approximately 149 km) of the line within South Africa (**Figure 1**). The South African section of the powerline traverses the Mahikeng and Ramotshere Moiloa Local Municipality, under the jurisdiction of the Ngaka Modiri Molema District Municipality, in the North West Province. The Botswana section traverses the Kgatleng District, whose administration capital is in Mochudi.

The study area servitude for the ESIA is a 1 km wide strip (i.e. 500 m on either side of the centreline of the route) to ensure sufficient coverage for anticipated design changes and allow some flexibility for later stages of the project. The geographical co-ordinates of the transmission line are tabulated below (**Table 17**):

Table 17: Site co-ordinates

Country	Location	Latitude (S)	Longitude (E):
South Africa	Starting point <i>Approximately 16 km north-west of Mmabatho north west of Mafikeng</i>	25°42'59.95"	25°31'25.61"
	Middle point <i>Approximately 10 km north-east of Borakalalo Village</i>	25°13'39.20"	25°59'2.06"
	End point <i>Near the border post between Botswana and South Africa</i>	24°42'0.08"	26° 7'28.04"
Botswana	Starting point <i>Near the border post between Botswana and South Africa</i>	24°42'0.08"	26° 7'28.04"
	Middle point <i>Approximately 8 km east of Mochudi Village</i>	24°26'3.42"	26°14'10.48"
	End point <i>Approximately 38 km north-east of Lentsweletau Village</i>	24° 8'37.13"	26°14'5.66"

The list of farms properties and their 21 digit Surveyor-General codes that will be directly affected by the project are included in **ANNEXURE D.4 and D.5**.

The Watershed B site was originally located to the south east of Mafikeng but due to altered growth loads and updated objectives for Eskom, the site was moved to the north west of Mafikeng. This required an

additional process in the pre-feasibility stage to assess constraints and opportunities associated with linking the proposed Watershed B substation to the existing Isang substation. A new route was thus found to link to the existing preferred route to Isang, following the same process that was used to determine the original preferred route (**ANNEXURE F**).

4.2 Project Infrastructure

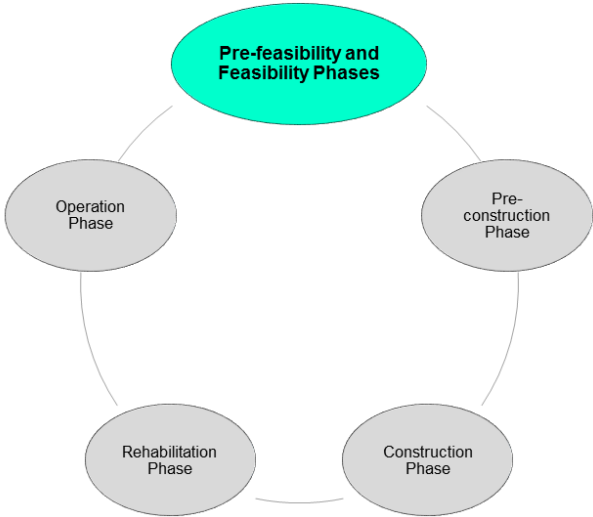
Infrastructure associated with the project that require environmental authorisation will be assessed as part of the ESIA phase. The following associated infrastructure were identified:

- **Access roads** (during construction and operation); and
- **Construction camp(s)**.

4.3 Project Activities

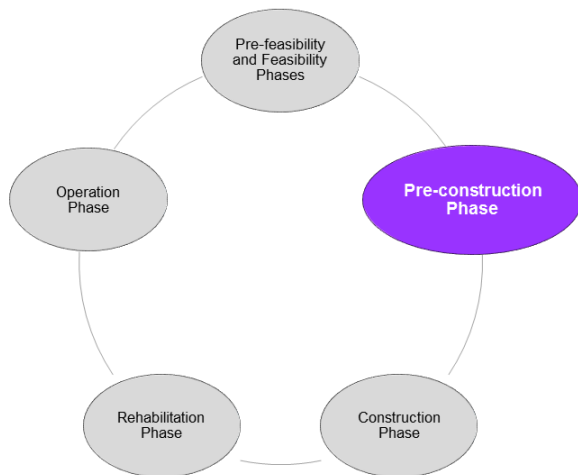
The lifecycle of the proposed BOSA interconnection project is divided into five distinct phases, namely:

4.3.1 Pre-feasibility and feasibility Phases



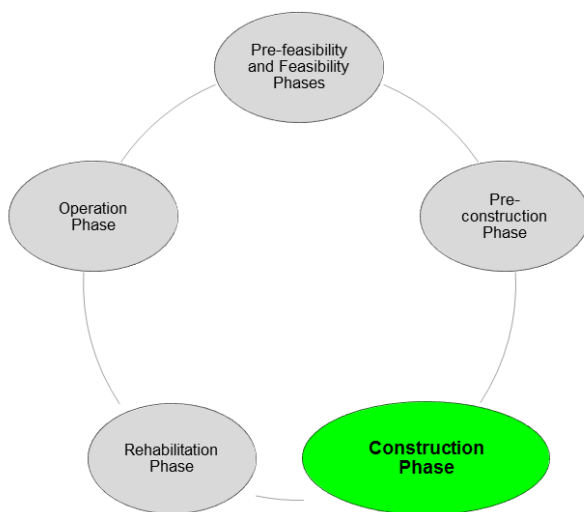
- Building of **business case** to demonstrate the need for the BOSA
- High level identification of **environmental and social constraints**
- **Screening** of the project and different alternatives
- Selection of a **preferred transmission route corridor**
- Preliminary designs
- .

4.3.2 Pre-construction Phase



- Obtaining environmental authorisations, permits and/or licenses from the various competent authorities
- Wayleave application where required
- Land acquisition process

4.3.3 Construction Phase



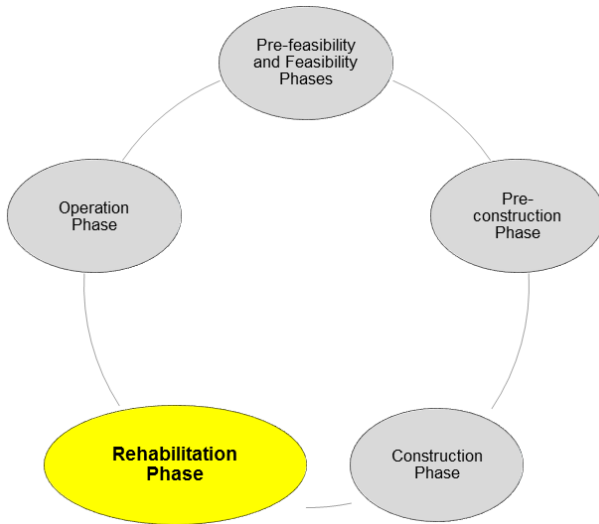
The construction will be done as per the Eskom and BPC construction methodologies and / or specifications. In summary this phase will entail the following in no particular order:

- Site clearance to facilitate access and construction (*as per Eskom internal guidelines and standards in South Africa*)
- Construction of access roads and installation of stormwater infrastructure where required
- Pegging out of tower locations
- Establishment of the contractor's site camps
- Removal and stockpiling of topsoil
- Transportation and storage of construction equipment on site
- Installation of foundation for the towers
- Assembly and erection of towers
- Cable stringing and installation of earth conductors
- Handling and disposal of construction waste

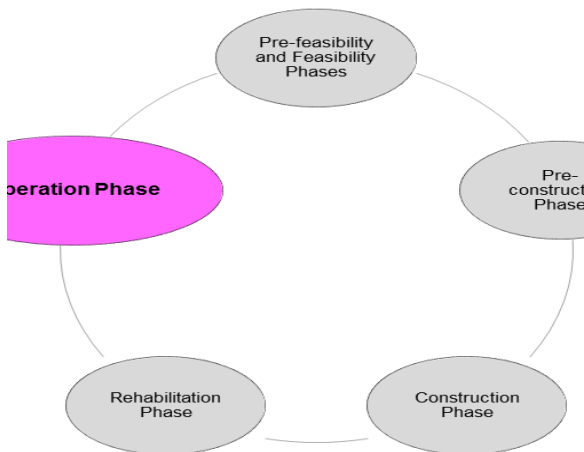
4.3.4 Rehabilitation Phase

Although the design life of the powerline is permanent and there is no intention to decommission the infrastructure, a proper rehabilitation procedure must be followed. The objective of rehabilitating the site would be to re-instate the affected project areas not needed for project infrastructure to a similar or better condition to the current environment.

The rehabilitation of disturbed areas will be done immediately after construction activities have been completed at each pylon site. This will include:



4.3.5 Operation Phase



- The operational phase refers to the actual operation of the proposed powerline and associated infrastructures (i.e. substation).
- This phase is not likely to have a significant impact on the natural environment or put a burden on local services. The infrastructure would not require service provision except for maintenance.
- Maintenance will be done as per the specifications and / or requirements of Eskom and BPC.

4.4 Project Need and Desirability

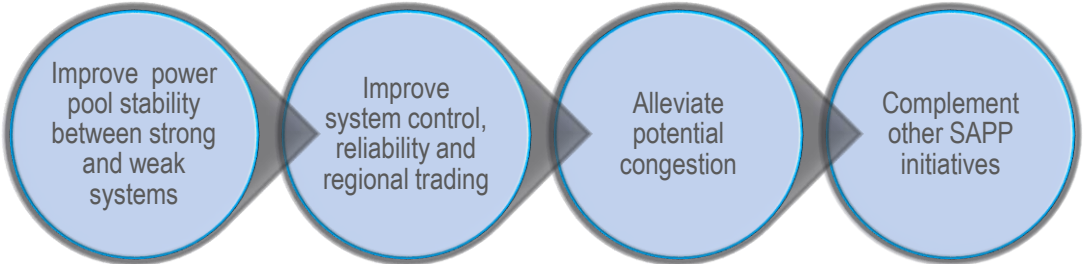
The Department of Environment Affairs and Development Planning (DEA&DP) have a guideline for assessing for the need and desirability of a project. The DEA&DP Guideline for Need and Desirability of a project (DEA&DP, 2013) highlights the obligation for all proposed activities that trigger the EIA regulations to be considered, the spatial planning context, broader societal needs, and financial viability. This information allows the authorities to contemplate the strategic context of a decision on the proposed project. This section seeks to provide the context within which the need and desirability of the proposed activity should be considered.

Southern Africa has experienced a period of unprecedented growth in utilisation of electricity in the period from 1995 to 2005, largely as a result of the boom in prices of natural resources. The region had enjoyed a long period of excess generation capacity and abundance of transmission facilities to evacuate power from the generation facilities to the customers. Since 2007, the region has run out of excess generation capacity and many regional transmission lines are now congested. This has led to implementation of

demand side management programmes such as load shedding to stabilise the electricity supplies. While the load shedding experienced in South Africa has succeeded in restraining the overall electricity demand in the region to some degree, the measure has also affected socio-economic growth, hence the need to boost power generation capacity and transmission of electricity regionally (Aurecon, 2016).

The SAPP has since embarked upon various initiatives to alleviate the current electricity supply constraints and contribute towards energy security of supply in the long run. The Botswana-South Africa (BOSA) Transmission Interconnection Project, is one of the identified and planned initiatives to address the power generation and transmission challenges in the region. The establishment of the BOSA interconnector provides the opportunity for trade in electricity to better balance the supply/demand requirements of the region and thereby stimulate economic activity (Aurecon, 2016).

The objectives of the BOSA interconnector are primarily as follows:



Given the challenging economic climate; the construction of the 400 kV transmission line between Botswana and South Africa is important for supporting economic development in the Region.

SECTION 5

5 Consideration of Alternatives

The section outlines the project alternatives considered during the planning stage of the project and the process followed to identify the merits and flaws of each alternative. This process incorporated the inputs from various specialists.

5.1 Background

The IFC Performance Standards, the DBSA Environmental and Social Safeguard Standards, the NEMA and the EIAA all require that alternatives be considered during the ESIA process. According to DEAT (2004) “an alternative can be defined as a possible course of action, in place of another, that would meet the same purpose and need”.

The DEA&DP Guideline on Alternatives (DEA&DP, 2013)⁵ states that “every EIA process must identify and investigate alternatives, with feasible and reasonable alternatives to be comparatively assessed. If, however, after having identified and investigated alternatives, no feasible and reasonable alternatives were found, no comparative assessment of alternatives, beyond the comparative assessment of the preferred alternative and the option of not proceeding, is required during the assessment phase. What would, however, have to be provided to the Department in this instance is proof that an investigation was undertaken and motivation indicating that no reasonable or feasible alternatives other than the preferred option and the no-go option exist.”

The 2014 EIA Regulations (GN No. R982) provide the following definition: “**Alternatives**”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to the—

- (a) property on which or **location** where the activity is proposed to undertaken;
- (b) type of **activity** to be undertaken;
- (c) **design or layout** of the activity;
- (d) **technology** to be used in the activity;
- (e) **operational** aspects of the activity; and
- (f) includes the option of not implementing the activity (“**No-Go**” alternative).

In addition to the list above, the DEA&DP Guidelines on Alternatives (DEA&DP, 2013) also consider the following as alternatives:

- (a) **Demand alternatives:** Arises when a demand for a certain product or service can be met by some alternative means (e.g. the demand for electricity could be met by supplying more energy or using energy more efficiently by managing demand).
- (b) **Input alternatives:** Input alternatives are applicable to applications that may use different raw materials or energy sources in their process (e.g. industry may consider using either high sulphur coal or natural gas as a fuel source).
- (c) **Routing alternatives:** Consideration of alternative routes generally applies to linear developments such as power line servitudes, transportation and pipeline routes.

⁵ This guideline has been used as a best practice tool since it is the most recent guideline in South Africa on alternatives.

- (d) **Scheduling and timing alternatives:** Where a number of measures might play a part in an overall programme, but the order in which they are scheduled will contribute to the overall effectiveness of the end result.
- (e) **Scale and magnitude alternatives:** Activities that can be broken down into smaller units and can be undertaken on different scales (e.g. for a housing development there could be options of 10, 15 or 20 housing units. Each of these alternatives may have different impacts.

An important function of the Scoping Phase is to screen alternatives to derive a list of reasonable and feasible alternatives that need to be assessed in further detail in the ESIA Phase. The different alternatives applicable to this project are described in the following sections.

5.2 Alternatives considered

The different project alternative considered are described in detail below.

5.2.1 Routing Alternatives

The optimum routing for an overhead electricity transmission line is ideally a straight line from one point to another, over a flat terrain with no obstacles, sensitive areas, or other constraints. As this is never possible, selection of the best route is an optimisation exercise, which aims to minimise the impacts on the environment and people, while accommodating technical challenges in the most cost-effective way.

A systematic and comprehensive transmission line corridor selection process was undertaken using a GIS based assessment of alternative routings to screen the most feasible routes, as described in detail in **ANNEXURE F**. A Multi-Criteria Decision Making (MCDM) process was then undertaken to determine the preferred alternative from a technical, environmental and social perspective, allowing for an integrated assessment of the route alternatives. The process included not only the relevant environmental and social specialist team, but also Aurecon technical team and representatives of Eskom and BPC, in order to ensure that all relevant information, local knowledge and transmission expertise was duly taken into consideration in the final decision; and that all interested parties agreed on the way forward.

A number of factors were taken into consideration in informing route selection, including the following (**Figure 22**):

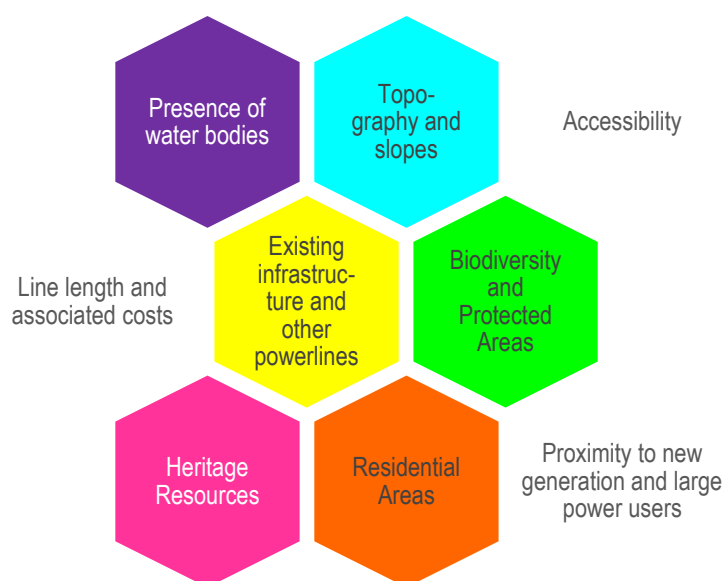


Figure 22: Factors considered in route selection process

A total of 19 potential corridors were identified to link the proposed Watershed B and existing Isang substation based on the abovementioned considerations. A screening process was undertaken to identify constraints and fatal flaws associated with each corridor. Of these 19 routes, 12 were considered significantly constrained and a total of five corridors were identified as potential routes for more detailed assessment. The five potential corridors (**Figure 23**) were identified for assessment during the MCDM workshop to allow for the choice of the best three alternatives to take forward to the feasibility study for more detailed assessment in Phase 2. The three best alternatives were Route, C, E and S (**Figure 23**), route C being the most preferred.

The location of the initially proposed Watershed B substation was changed, however Route C remained the preferred alternative. Another MCDM process was undertaken with the inputs of the specialists to find ways to link the new Watershed B substation to Route C. Same environmental, social, and technical aspects were factored in selection of the routes. Three alternative were identified and these are shown in **Figure 24**. This exercise demonstrated no substantive constraint in the area, allowing for routing around specific areas of concern.

The route selection process is detailed in **ANNEXURE F**.

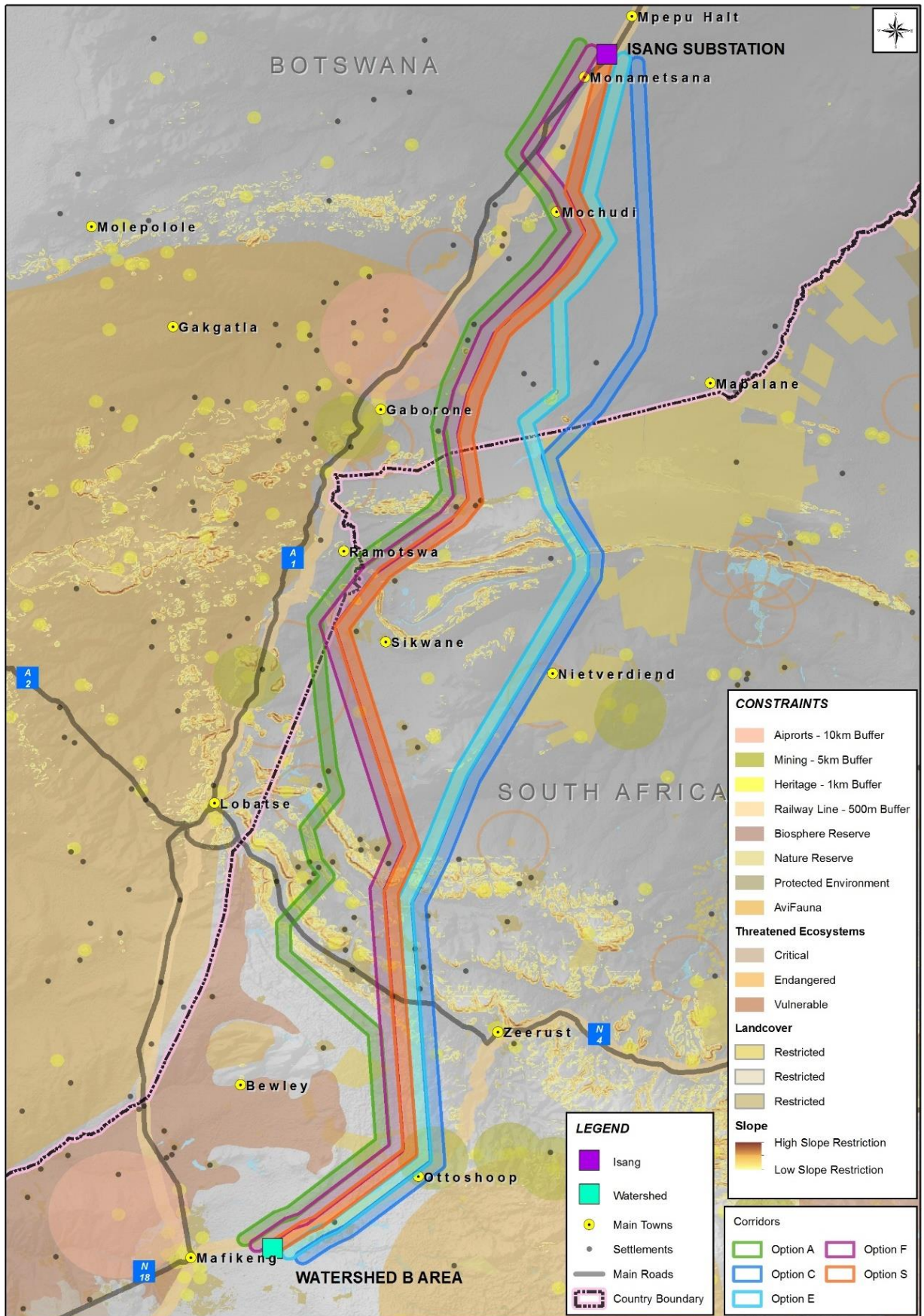


Figure 23: Alignment of 5 potential routes

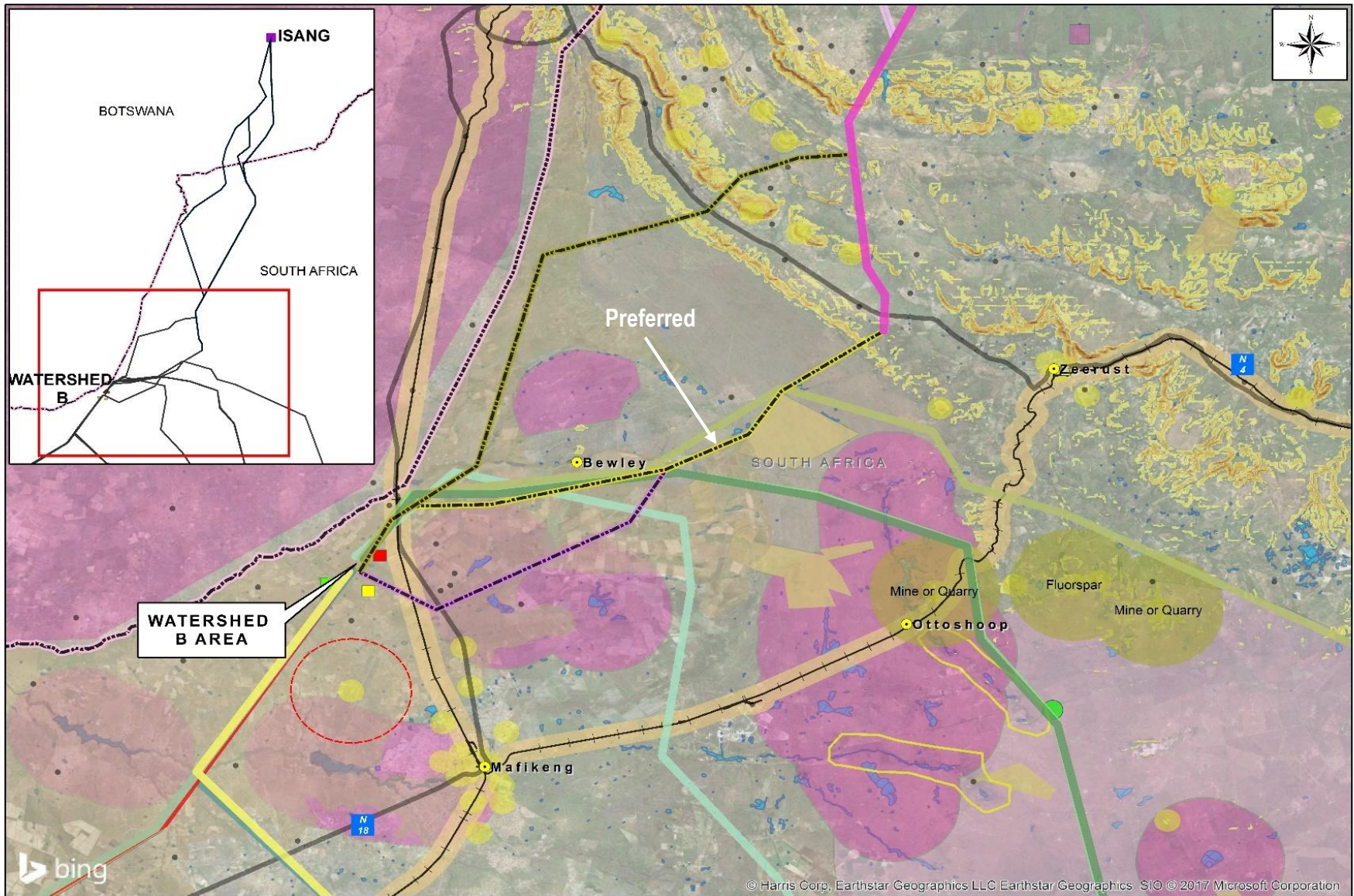


Figure 24: Map of the three alternative routes linking Watershed B substation to the preferred Route C

5.2.2 Design Alternatives

Having identified the preferred transmission line corridor, the alternative design solutions were also considered for supporting the overhead line:

Tower Structures

Various tower structures on which powerlines will be suspended were considered for use during the construction in different sections of the line, subject to landscape, engineering and the biophysical nature of the receiving environment. The towers will vary between 21.75 m and 30.75 m in height and the distance between each tower towers will be between 250 m and 500 m.

The following proposed structure types, as shown below in **Figure 25** are proposed as the basis for the preliminary transmission line design:



518H SELF SUPPORTING SUSPENSION TOWER

These are self-supporting lattice structures that were commonly used before the cheaper guyed and cross rope structures were designed.

(These tower structures will be used in South African locations where the 529 series is not suitable due to space or slope constraints)



520B GUYED-V SUSPENSION TOWERS

Costs less than 518H. Good for where space is limited. Designed for heavier conductors, optimal is Quad Zebra.

(These structures will be used in South Africa locations where the 529 series is not suitable due to space constraints)


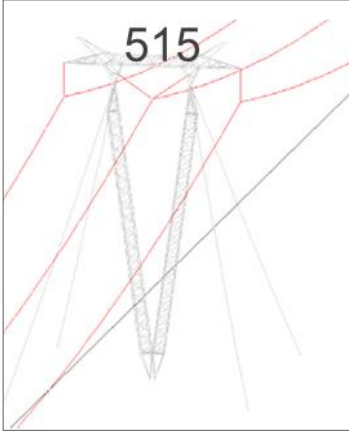
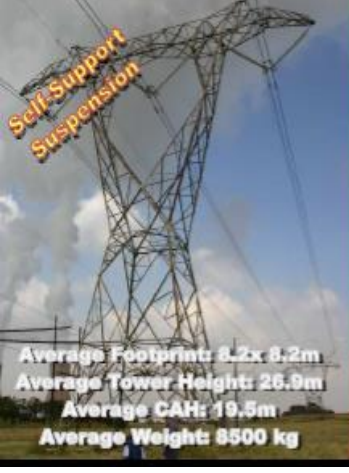
	<p style="text-align: center;">529A CROSS-ROPE SUSPENSION TOWERS</p> <p>Optimal guyed mast design, making it lighter, more efficient and cost effective. Designed for Triple Tern conductor.</p> <p><i>(These structures are the preferred choice for use on the South Africa section of the line)</i></p>
	<p style="text-align: center;">515B GUYED-V SUSPENSION TOWERS (preferred by BPC)</p> <p>Good for use where space is limited. Tower beam helps with live line maintenance. No longer used in SA (replaced by 520B) Designed for lighter Quad Wolf conductor configuration.</p> <p><i>(These structures are the preferred choice for use on the Botswana section of the line)</i></p>
 <p style="text-align: center;">Self Support Suspension</p> <p style="text-align: center;">Average Footprint: 8.2x 8.2m Average Tower Height: 26.9m Average CAH: 19.5m Average Weight: 8500 kg</p>	<p style="text-align: center;">517A SELF-SUPPORTING SUSPENSION TOWERS</p> <p>This tower is designed for twin dino conductor, but can be used for triple tern. It is generally more costly than the V-type or cross-rope types.</p> <p><i>(These structures will be used in South Africa locations where the 529 series is not suitable due to space constraints)</i></p>

Figure 25. Tower structure alternatives

The final tower selection will be based on BPC and Eskom requirements, as well as the conductor selection and terrain, etc. While these have been indicated as the “main” preferred structures (515 and 529) there will also be a variety of other structure types used in between these, depending on site-specific requirements.

5.2.3 Technology Alternatives

Conductor selection and optimisation normally involve the consideration of a number of factors and criteria in order to determine the optimised selection of the phase conductor, to minimise losses and corona. The criteria include the Corona inception gradient, Radio interference limits, Audible noise and surface gradient.

Viable options are then submitted into a financial analysis process to determine the capital cost and associated losses per annum. The results are then ranked to determine the optimised conductor size for the required transfer capacity.

For this inception phase of the study, preliminary discussions with Eskom and BPC have indicated the selection of a Triple Tern ACSR conductor as a preferred option. **Figure 26** illustrates the typical hardware that will be used on a Triple Tern installation.

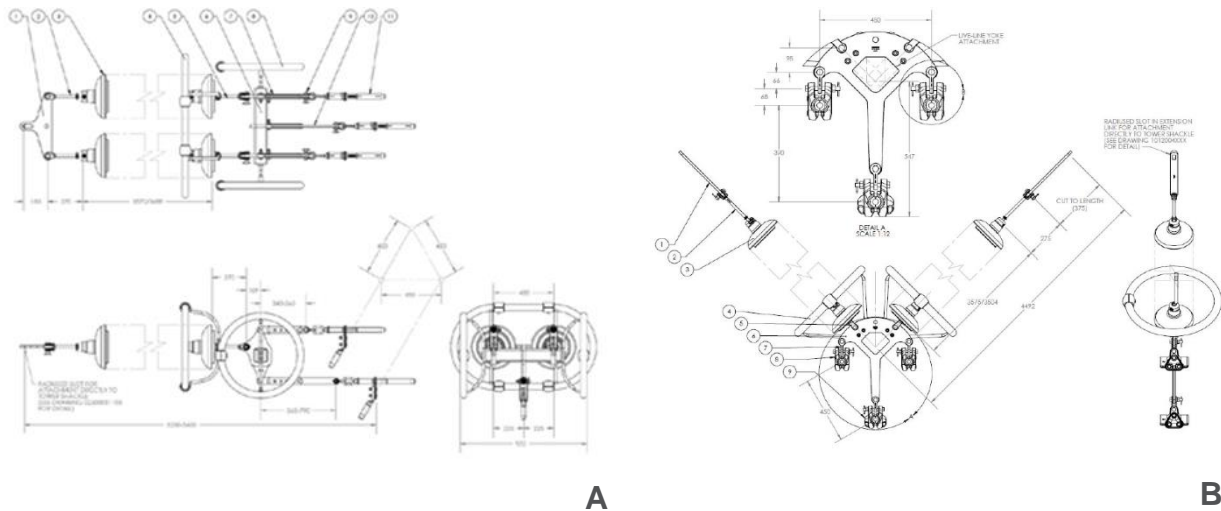


Figure 26: A - Strain Insulator Assembly (3x Tern); B - Suspension Insulator assembly (3x Tern)

5.2.4 “No-go” Alternative

The “No-Go” alternative serves as a basis for comparison and can serve to validate the need and desirability for the project. Therefore as standard practice and to satisfy regulatory requirements, the option of not proceeding with the project is included in the evaluation of the alternatives. The “No-Go” alternative is defined in this ESIA as the option of no transmission line linking the North West Province and the southern portion of Botswana. This implies that the objective of transmitting electricity to assist in alleviating the current electricity supply constraints or meeting the electricity demands will not be achieved. Route C will be assessed comparatively against the ‘No-Go’ alternative, as required legislatively and in terms of best practice.

5.3 Summary of Alternatives

The following alternatives have been identified (**Table 18**). Only those alternatives that are in bold will be assessed in the ESIA since they are considered to be the feasible alternatives.

Table 18: Summary of the alternatives considered

Alternative type	Description	Alternatives considered	Preferred option
Location	Powerline route	Route C to new Watershed B location	√
		Route E	
		Route S	
Design	Tower structures	a518 lattice tower series (Quad Zebra)	All the alternatives considered
		515 Guyed-V lattice towers	

Alternative type	Description	Alternatives considered	Preferred option
		529 Cross-roped lattice tower, 520 Guyed-V lattice towers,	will be used where appropriate
Technology	Conductor	Triple Tern ACSR conductor	
No-Go alternative	No development	No development of the BOSA transmission line	

SECTION 6

6 Description of the Affected Environment and Identification of Impacts

This chapter contains details description of the social and bio-physical environment in which the proposed project will be located. This section also outlines sensitive areas/issues that need to be considered during the EIA phase and designing of the project infrastructure.

6.1 Bio-Physical Environment

6.1.1 Climate

SOUTH AFRICA

Climatic conditions in the North West Province vary from arid conditions in the west, semi- arid in the central regions to temperate in the east. The site is located in the western parts of the Province. The average rainfall is between 300 mm to 700 mm per annum, of which the most rainfall occurs during the summer months⁶

Summers are typically hot whilst winters are mild to cold. The daily average high temperatures during summer seasons are 32°C and the average daily minimum temperatures in winter are 0.9°C.⁷

BOTSWANA

Climatic condition in the Kgatleng District and South East District is semi-arid, similar to most of the country. The average rainfall is between 400mm to 500mm and the rainfall is mostly occurring during summer.

Summers are hot and winters have cold mornings and evenings whilst the days are usually mild. The daily average temperature during summer seasons is 19.6 degrees Celsius and 40 degrees Celsius and the average daily minimum temperatures for winter seasons go below zero degrees in the extreme cold winter nights.

⁶ PBAI, 2011. Draft EIA Report: Proposed Ngwedi Substation and Associated Turn-Ins.

⁷ North West province State of the Environment Report

6.1.2 Topography

SOUTH AFRICA

The topography is predominantly uniform with the dominant topographical feature being flat plains, with a series of consecutive ridges and isolated higher lying topographical areas located north of the N4. The lower lying areas between the consecutive ridges consists of drainage lines. Mean elevation ranges from 779 meters above mean sea level (mamsl.) to 2328 mamsl.

BOTSWANA

The uninterrupted flat terrain defines the dominant horizontal scale of the landscape north of the South Africa Botswana border towards Mochudi. The proposed corridor crosses two river valleys, north of Mochudi, offering some variation on the largely even topography.

6.1.3 Land use

SOUTH AFRICA

The study area consists of several game and cattle farms. There are also cultivated farming activities (i.e. croplands) located north east of Mafikeng, lying west of the proposed alignment. Most of these farming activities are mostly concentrated close to larger towns.

Mining activities are concentrated around formalised towns or cities such as Ottoshoop and Nietverdiend. The closest mine is located 7km away from the proposed alignment.

Settlements consists of both rural and urban settings. Large rural settlements are sparsely located north of the N4.

The largest part of the study area consists of natural areas with wilderness characteristics. There are also a few formalised protected areas, the largest one being the Madikwe Nature Reserve.

BOTSWANA

Land use: The study area's land cover consists of the small scale farming activities, it is expected that these are associated with small rural settlements. The only formalised town identified is Mochudi, which lies west of the proposed alignment.

The natural landscape is also the largest part of the study area in Botswana. These types of landscapes have important well - being value contributing to the sense of place and aesthetic appeal. The type of natural landscapes includes riverine, wetlands grassland and shrubland.

6.1.4 Surface water

Several different types of aquatic environments are known to occur within the study area. These include rivers and streams, open water bodies / lakes, wetlands and peatlands, endorheic pans / depressions, springs/eyes, artificial waterbodies (**Figure 27**).

SOUTH AFRICA

The study area falls within the Crocodile (West) Marico Water Management Area (WMA). The Crocodile and Marico Rivers are the two main rivers in this WMA, which at their confluence forms the Limpopo River that flows eastwards to the Indian Ocean.

The main rivers in the study area the Ngotwane, Sandloot and Brakfonteinsspruit amongst other natural drainage lines, wetlands and artificial water features.

BOTSWANA

South East District is characterised by a number of ephemeral rivers. The main rivers are the Segoditshane, Notwane, Peleng etc. Most of these rivers experience one or more limited flow events per wet season, though completely dry years have been recorded.

The annual precipitation in the Kgatleng District is around 55 cm, most of which is received during the summer season from November to May. Most of the rivers in the region are seasonal which are prone to flash floods, being the most prominent.

IDENTIFIED POTENTIAL IMPACTS

It is evident from a preliminary assessment that the affected river and wetland systems are under pressure from development and are at times the only natural functioning systems within the cultivated landscapes. The proposed development will potentially have the following impacts on the water resources in the area:

- Sedimentation and erosion of surface water bodies resulting from the construction activities
 - Loss of habitat and ecosystem function / ecosystem services
 - Loss of species of special concern
 - Increase in habitat fragmentation
 - Loss of wetland and aquatic habitat
 - Changes to the hydrological regime
 - Changes to water quality
- Impact on Critical Biodiversity Areas or impacts on present / future protected areas

FURTHER ASSESSMENTS

The EIA phase will thus focus on critical assessment of the wetland / riverine systems as follows:

- Delineation of the wetland and river boundaries using the requisite techniques based upon the latest Wetland Classification systems
 - Identification of relevant ecosystem services provided by and of the rivers or wetlands
 - Indicate suitable buffer zones as prescribed by the relevant provincial policies / conservation plans
 - Assess the status of the observed faunal and floral populations observed
- A WULA will be compiled in terms of the NWA as the proposed transmission line will cross numerous watercourses.

Due to the nature of a transmission line, the overall impacts are anticipated to be low to moderate with mitigation for most. However the impacts on wetlands, (due to the high number of pans) and the loss of species of special concern, will need specific consideration during the ESIA phase site visit and impact assessment. This will allow for the development of specific mitigation and design recommendations, to avoid or minimise these impacts, and thus provide critical input in relation to the final tower positions. Please refer to **Section 8.4** the Plan of Study for the aquatic assessment.

6.1.5 Floral Biodiversity

The study area extends over three primary vegetation divisions, namely the Savanna, Azonal and Grassland biomes

SOUTH AFRICA

The proposed powerline alignment traverse about 11 vegetation units as listed below.

No	Veg Type Name	Biome	Bioregion
1	Carletonville Dolomite Grassland	Grassland	Dry Highveld Grassland
2	Dwaalboom Thornveld	Savanna	Central Bushveld
3	Dwarsberg-Swartruggens Mountain Bushveld	Savanna	Central Bushveld

BOTSWANA

Two Savanna / Woodland vegetation units within the study area and these include the following:

- **B6b Hardveld**, composed of dominant tree species *Peltophorum africanum*, *Vachellia tortilis*, *V. karroo* and *Ziziphus mucronata*
- **G16a Transition Sandveld / Hardveld** dominated by *Terminalia sercicea*, *Vachellia tortilis*, and *Ziziphus mucronata*

4	Eastern Temperate Freshwater Wetlands	Azonal	Waterbodies
5	Highveld Salt Pans	Azonal	Inland Saline Vegetation
6	Klerksdorp Thornveld	Grassland	Dry Highveld Grassland
7	Madikwe Dolomite Bushveld	Savanna	Central Bushveld
8	Mahikeng Bushveld	Savanna	Central Bushveld
9	Subtropical Salt Pans	Savanna	Central Bushveld
10	Zeerust Thornveld	Savanna	Central Bushveld
11	Subtropical Freshwater Wetlands	-	(Wetland veg type)

Most of these vegetation types and the associated species are common and widespread, with similar habitats extending into both Zimbabwe and South Africa.

Dwarsberg-Swartruggens Mountain Bushveld, Klerksdorp Thornveld and Zeerust Thornveld are endemic, with >80% of the national extent occurs within the North-West Province.

IDENTIFIED POTENTIAL IMPACTS

- Altered floral habitat and diversity
- Introduction of alien invasive plants
 - Altered habitat availability

FURTHER ASSESSMENTS

- Provide a description of the general floristic species diversity and community composition
 - Evaluate the occurrence of potential Red Data taxa
 - Demarcate physiognomic units based on floristic relevés; and
- Provide an indication on the ecological condition (successional stage) of the predetermined physiognomic units, which will also be related to any ecosystem services / habitat function.

6.1.6 Faunal Biodiversity

Animals that could potentially be found along the proposed route were identified.

SOUTH AFRICA & BOTSWANA		
Mammals	Amphibians	Reptiles
<p>Critically Endangered:</p> <ul style="list-style-type: none"> • Black rhinoceros (<i>Diceros bicornis</i> minor) (IUCN Vulnerable), • Short-eared trident bat (<i>Cloeotis percivali</i>) (IUCN Least Concern). <p>Endangered:</p> <ul style="list-style-type: none"> • African wild dog (<i>Lycaon pictus</i>), • Oribi (<i>Ourebia ourebi</i>) (IUCN Least Concern), • Tsessebe (<i>Damaliscus lunatus</i>) (IUCN Least concern) and • White-tailed mouse (<i>Mystromys albicaudatus</i>). <p>Vulnerable:</p> <ul style="list-style-type: none"> • Cheetah (<i>Acinonyx jubatus</i>) (IUCN Vulnerable), • Ground pangolin (<i>Smutsia temminckii</i>) (IUCN Least Concern), • Roan antelope (<i>Hippotragus equinus</i>) (IUCN Least Concern) and • Sable (<i>Hippotragus niger</i>) (IUCN Least Concern). <p>Near Threatened:</p> <ul style="list-style-type: none"> • African marsh rat (<i>Dasymys incomptus</i>) (IUCN Least Concern), • Brown hyaena (<i>Hyaena brunnea</i>) (IUCN Near Threatened), • Darling's horseshoe bat (<i>Rhinolophus darlingi</i>) (IUCN Least Concern), 	<ul style="list-style-type: none"> • <i>Amietia angolensis</i> (Common River Frog), • <i>Amietia fuscigula</i> (Cape River Frog), • <i>Cacosternum boettgeri</i> (Boettger's Caco), • <i>Strongylopus fasciatus</i> (Striped Stream Frog), • <i>Bufo garmani</i> (Eastern Olive Toad), • <i>Bufo gutturalis</i> (Guttural Toad) • <i>Amietophrynus rangeri</i> (Raucous Toad) • <i>Schismaderma carens</i> (Red Toad) • <i>Breviceps adpersus</i> (Bushveld Rain frog) • <i>Phrynomantis bifasciatus</i> (Banded Rubber Frog) • <i>Xenopus laevis</i> (Common Platanna) • <i>Ptychadena anchietae</i> (Plain Grass frog) • <i>Ptychadena mossambica</i> (Broad Banded Grass Frog) • <i>Tomopterna cryptosis</i> (Tremolo Sand Frog) • <i>Tomopterna krugerensis</i> (Knocking Sand Frog) • <i>Tomopterna natalensis</i> (Natal Sand Frog) 	<p>52 taxa (comprising of 23 snake and 29 tortoise and lizard species [scincids & gekkonids] have been recorded from the study area (information obtained from the South African Reptile Conservation Assessment (SARCA). Again, it is assumed that similar species will occur within the Botswanan portion of the study area, but will be assessed in more detail during the EIA phase.</p> <p>The expected richness represents an underestimation of the reptile diversity likely to occur. Therefore, it is possible that many more species could exist on the study sites although current distributional data is lacking in this regard.</p>

IDENTIFIED POTENTIAL IMPACTS

- Impacts and/or loss of faunal habitat and ecosystem function
 - Impacts on faunal diversity

FURTHER ASSESSMENTS

- A detailed faunal assessment including a small mammal trapping session and nocturnal surveys based on strategically placed wildlife cameras
 - An evaluation of the occurrence of any important vertebrates and invertebrates

6.1.7 Avifaunal Biodiversity

A combined total of at least 462 bird species have been recorded within the combined broader area of South Africa and Botswana. The presence of these species in the combined broader area provides an indication of the diversity of species that could potentially occur along the proposed power line route (Figure 27).

SOUTH AFRICA

The proposed BOSA 400kV power line does not traverse across Important Bird Areas (IBA). However, one IBA does occur within the broader area.

- **Botsalano Nature Reserve** is located approximately 40 km north of central Mafikeng, near the border with Botswana and is the closest IBA to the proposed power line (approximately 15 km).
- Habitat within the reserve consists of elements of both the Grassland and the Savanna biomes and consequently support both grassland and woodland dependent bird species.
- The area is of particular interest from an ornithological point of view as it is one of very few reserves in South Africa that holds the western population of the Short-clawed Lark *Certhilauda chuana*. It is also one of the few reserves in which Melodious Lark *Mirafra cheniana* can be found.

BOTSWANA

The proposed BOSA 400kV power line does not traverse across an IBA. However, two IBAs do occur within the broader area located between 15 km and 50 km west of the proposed BOSA 400kV power line.

- **Mannyelanong Hill** lies south-east of the village of Otse in the hardveld of south-east Botswana, with its undulating plains and scattered rocky hill ranges. The cliff and its lower wooded slope is fenced off to serve as a sanctuary for the important nesting population of Cape Vulture, one of only two localities currently used by this species in Botswana. Despite significant declines (45%) in breeding population numbers between 1963 and 1982, the following decade saw this population stabilise at around 50 pairs breeding per season. The current population consists of about 70 breeding pairs, and is now one of Botswana's largest vulture colonies. One pair of Black Stork *Ciconia nigra* nests on the cliffs; the nest-site has been used in

- The open grassland flats are also known to periodically support Yellow-throated Sandgrouse *Pterocles gutturalis*. The surrounding woodland-grassland mosaic is known to hold Secretarybird *Sagittarius serpentarius*, Kori Bustard *Ardeotis kori* and a diversity of small woodland passerines.

most seasons since 1941. Verreaux's Eagle *Aquila verreauxi* also breeds on the Mannyelanong cliffs, together with Lanner Falcon and Rock Kestrel *Falco rupicolus*.

- **The South-east Botswana IBA** is an extensive 750 000 ha area that is comprised of Pitsane grasslands as well as mixed savanna, low rolling hills and farmland. This IBA was established on the occurrence of an important population of the restricted-range Short-clawed Lark *Certhilauda chuana*, which is prevalent and locally abundant in the area. In addition, Blue Crane *Anthropoides paradisea* are regularly seen at or near Kgoro Pan and may breed nearby, whilst Lesser Kestrel *Falco naumanni* and Pallid Harrier *Circus macrourus* frequently hunt over the grasslands in the austral summer. The site also supports a number of species which occur in Botswana only, or mainly, in this south-east corner.

IDENTIFIED POTENTIAL IMPACTS

Although the proposed BOSA 400kV power line will not have any direct impact on the IBAs, the following impacts are anticipated:

- Impact on birds breeding, foraging and roosting in or in close proximity of the servitude through transformation of habitat, which could result in temporary or permanent displacement
- Collisions of Red List species with the earthwire of the proposed powerline - these species are mostly heavy-bodied birds with limited manoeuvrability, which makes it difficult for them to take the necessary evasive action to avoid colliding with power lines

FURTHER ASSESSMENTS

The investigations during the EIA phase will take the form of a site visit to record data at selected areas identified beforehand through the study of aerial imagery of the entire 2 km corridor, which is currently being collected by means of an aerial survey.

6.1.8 Visual Resources

SOUTH AFRICA

The landscape character is defined by the vast, open flat terrain, the predominant agricultural and natural landscape features and overall rural feel. Dispersed rural settlement areas, formal towns and grasslands will likely have little screening value in terms of visual impact.

The landscape is uncluttered, creating a homogenous visual quality with minimal vertical elements. Lower shrubland type vegetation with sparsely spaced trees and cultivated fields are predominantly spreaded over the study area. The VAC in terms of:

- Topography is moderate – low
- Pattern/Diversity is low
- Vegetation height is moderate - low

The overall landscape quality is considered moderate - high because of the dominant horizontal scale of the study area, minimal man-made structures, little visual discontinuity and interruption of the natural environment.

BOTSWANA

The landscape character is defined by a smooth patchwork of smaller scale agricultural fields and an overall rural feel. The landscape offers little to no vertical definition in terms of manmade or natural features.

The landscape is uncluttered, creating a homogenous landscape quality with minimal vertical elements. Lower shrubland type vegetation with sparsely spaced trees (becoming even more dispersed as one moves northwards) and cultivated fields are predominantly spreaded over the study area. The VAC in terms of:

- Topography is low
- Pattern/Diversity is low
- Vegetation height is moderate - low

The overall landscape quality is considered moderate - high because of the dominant horizontal scale of the study area, minimal man-made structures, little visual discontinuity and interruption of the natural environment.

IDENTIFIED POTENTIAL IMPACTS

- The most sensitive receptors will be people permanently residing in the area (formal residential as well as informal settlements). These areas are associated with main towns as well as dispersed settlements mostly located north of the N4 and east of Gaborone.
- Other sensitive receptors include the tourism industry. The proposed corridor borders the Madikwe, Duprenella and Olyvenbuilt Private Nature Reserves on its eastern boundary in South Africa (**Figure 27**), this could negatively influence sensitive views within the reserves (i.e look out points, walking trails or views from bird hides could be negatively affected).

Potential risks of the project include:

- Impacts on sense of place

- Impacts on landscape quality
- Impacts on landscape character
- VAC slope, vegetation and pattern or diversity

FURTHER ASSESSMENTS

Issues requiring further assessment:

- Determine the extent of the study area, based on the project visibility which will be informed by a viewshed analysis;
 - Determine the visual intrusion
 - Determine the visual exposure of the project
 - Give attention to important viewpoints, based on detailed available desktop information
- Describe the receiving environment in more detail, based on site photos (assessment of potential sensitive nature reserves etc.)
- Identify the elements of visual value and quality that could be affected by the proposed project, (views to and from Nature Reserve's);
- Identify landscape and visual receptors in the study area that will be affected by the proposed project (if they were not listed in the scoping report);
- Further assessment of possible impacts and recommend mitigation measures to reduce and/or alleviate the potential adverse landscape and visual impacts

6.2 Socio-Economic Environment

6.2.1 Human Settlements

SOUTH AFRICA

The study area falls within the Ngaka Modiri Molema District Municipality (NMMDM). Ramotshere Moiloa and Mahikeng Local Municipalities are the two Local Municipalities that is affected by the proposed project. The main towns and settlements within 10 km of the study area are Mahikeng, Slurry, Ottoshoop, Lehurutshe, Dinokana, Ntswelesoku, Mmutshweu, Mantsie, Motswedi, Driefontein and Supingstad.

- Education: In Ngaka Modiri Molema District Municipality only 14.2% of people had completed secondary schooling and 5.3% had attained a higher level of education in 2011.
- Employment: Unemployment rate is the percentage of people in the labour force who do not work and are available to work. The North West Province has 31.5% unemployment rate, which is lower than the unemployment rate in Ngaka Modiri Molema (33.7%).
- Income: The average household income for the Mahikeng Local Municipality at R81 965.00 is much higher as the average household income for Ramotshere Moiloa Local Municipality of R51 026.00.

The main economic driver of the North West Province is mining, which contributes more than 50% towards the Province's gross domestic product (GDP) and provides employment for about 25% of its workforce. North West is also known as the Platinum Province, as almost all of South Africa's platinum is found in North West.

BOTSWANA

The proposed development falls within the Kgatleng and South-East Regions in Botswana. South-East District has two sub-districts namely; Ramotswa sub-district and Tlokweng sub-district. The major settlements close to the proposed development are: Monametsana, Malotwana, Mochudi, Dikwididing, Mokatse and Modipane.

- Education: According to the 2011 statistics 27% of the population, both for the South-East and Kgatleng District, aged twelve years and over, has attained Form 1 – 3 as the highest level of education. A further 23% of the population in the South-East District and 14% of the population in the Kgatleng District, aged twelve years and over, has attained Form 4 – 6 as the highest level of education.
- Employment: As per the 2011 Botswana statistics, 53% of the population aged 12 years and over are economically active in the South-East District, 13% is actively seeking work and a further 27.3% of the population is seen as students. 50% of the population aged 12 years and over in the Kgatleng District is economically active, another 11.6% of the population is actively seeking work and 23.2% is in the student category.

Botswana has benefited from a stable social structure and a wealth of natural mineral resources and has one of Africa's highest sustained records of economic growth since independence. However, the economy is dependent on mining and agriculture, and has had to cope with the vagaries of the diamond market and frequent droughts.

IDENTIFIED POTENTIAL IMPACTS

Due to the nature of linear activities; multiple farms, communities and/or villages will be impacted directly and indirectly. The identified communities and landowners will be identified from stakeholders for the SE and discussions will be held with affected communities at the time of the SE activities. The identified potential impacts associated with the proposed project, include:

- Influx of construction workers employed on the project and who are housed in the construction village used for other constructions in the area
 - Influx of job seekers looking for work but who are unsuccessful
 - Increased crime and risk to personal safety of farmers
 - Potential noise and dust impacts during the construction phase
 - Access problems during construction phase
- Local employment or job opportunities and local economy economic empowerment
 - Economic displacement

Of the negative impacts, the influx of construction workers housed in the construction village and influx of job seekers from neighbouring communities were identified as the key social concerns. While the presence of construction workers and job seekers do not in themselves constitute a social impact, the manner in which the construction workers and job seekers conduct themselves can affect the local community.

FURTHER ASSESSMENTS

During the ESIA phase, the social impacts will be assessed through key interview, focus group meetings with relevant stakeholders and communities.

6.2.2 Heritage and Cultural environment

The project area is considered to be archeologically diverse. The area is broadly characterised by a number of prehistoric periods, including the Early Stone Age (ESA). Early Stone Age (ESA), Middle Stone Age (MSA), Early Iron Age (EIA*), Middle Iron Age (MIA), and Late Iron Age (LIA).

SOUTH AFRICA

Based on the geographic and geological situation of the South Africa section of the line, it is anticipated that heritage sites and/or resources will be present.

The Iron Age is well represented in the area with the majority of sites being composed of the Late Iron Age sequence. These sites are found in a variety of geographic locations and their prominent stone walling makes them easily identifiable on the ground. Early Iron Age sites have also been identified and they are mostly associated with the San people (also known as Bushmen) in these areas. Several rock art sites also attest to their presence within the study area. The later Iron Age sites such as Kaditshwene (close to Mafikeng) is recognized by the typical Sotho-Tswana scalloped stone walling.

BOTSWANA

Gaborone is located in south-eastern Botswana, which is one of the richest regions in country in terms of archaeological, historical and heritage resources (both tangible and intangible). There are over 200 archaeological sites recorded in the area.

The Iron Age sites noted in around south eastern Botswana include:

- EIA* - Zhizo Traditional site
- MIA - Toutswe Traditional, Great Zimbabwe Traditional sites
- LIA - Khami Traditional site

The proposed alignment area contains several small village sites. Due to the rural and primitive nature of these occupational units, burials are often performed close to the houses or huts. Although the documentation of grave sites will be part of the social impact assessment their relocation will form a second phase of the heritage management project.

IDENTIFIED POTENTIAL IMPACTS

SOUTH AFRICA: Anticipated heritage resources include inter alia:

- Paleontological features: fossil remains.
- Historic built environment: structures older than 60years, historical townscapes
- Historic farmland (these possess distinctive patterns of settlement and historical features i.e. historical farm yards and farm workers)
 - Historic rural town: historic mission settlements and townscapes.

- Pristine natural landscape: formally proclaimed nature reserves, evidence of pre-colonial occupation.
 - Relic landscape: Past farming settlements and industrial sites.
 - Burial grounds and grave site.

BOTSWANA: Some of the sensitive heritage sites are likely to be located at:

- Early Iron Age areas are likely to be identified in elevated areas in Gaborone, Modipane and Lobatse region. Elevated areas also act as spiritual homes and rainmaking sites.
 - Gaborone and Lobatse are incredibly rich in old buildings because they are some of the oldest towns in Botswana.
 - Water bodies are potential candidates for Late Stone Age sites. Several LSA sites have been identified around Thamaga and Manyana areas.
- Ponds and pans are ideal for identifying Early Stone Age tools and possibly hominids sites associated with evolution of modern human beings. Pans spotted in the study area are considered to be archaeologically sensitive.
- Kraals: These are ideal sites for identifying male burials. Traditionally, males were buried in kraals and the practice still occurs to date in some parts of the country.
- Areas with buffalo grass: These are high phosphorus areas that correlate with the location of archaeological sites in south-eastern Botswana. Moritshane is one of the known EIA sites in the study area.

FURTHER ASSESSMENTS

- There is enough information regarding the possible occurrence of Iron Age and Stone Age sites within the proposed development area to justify ground-truthing studies during the assessment phase. A systematic ground survey will determine the number of sites as well as their heritage significance. The heritage practitioner will liaise with the social consultant to determine the location of burial sites, ceremonial or religious sites.

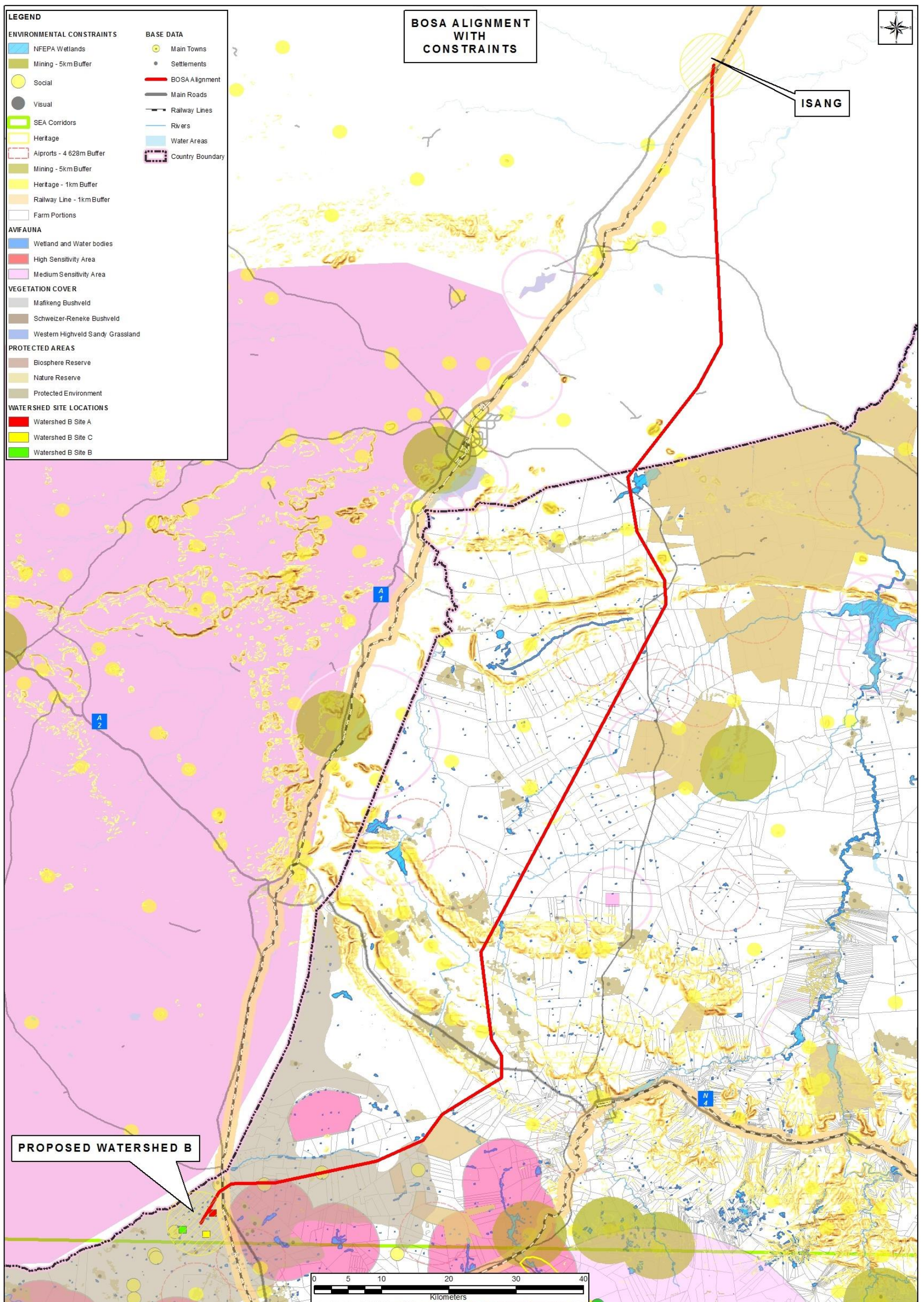


Figure 27: Sensitivity Map

SECTION 7

7 Stakeholder Engagement Process

This section details the approach to the SE according to the legislative requirements and different activities of the SE conducted to date.

7.1 Consultation Process

Consultation with the public forms an integral component of the environmental authorisation process. This process enables I&APs (e.g. directly affected landowners, national-, provincial- and local authorities, and local communities etc.) to raise their issues and concerns regarding the proposed activities, which they feel should be addressed in the ESIA process. The Stakeholder Engagement Process (SE) has thus been structured to provide I&APs with an opportunity to gain more knowledge about the proposed project, to provide input through the review of documents/reports, and to voice any issues or concern at various stages throughout the ESIA process.

The objectives of stakeholder engagement are to inform the public, about the Project on an ongoing basis, understand their concerns related to the Project at an early stage get local knowledge about the area and provide review opportunities at key stages in the process. It is important that this process is documented properly. The SE will be managed to meet these objectives throughout the ESIA. The SE activities to date are summarised in **Table 19**.

The following guideline documents were also used to inform the SE approach:

- International Finance Corporation. (2007). Manual Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets;
- Integrated Environmental Management Guideline Series 7 – Public Participation in the EIA Process (DEA, 2010);
- Public Participation Guidelines, Guideline Document 4 (DEA, 2006);
- Public Participation Guidelines in terms of the National Environmental Management Act, 1998 Environmental Impact Assessment Regulations (DEA, 2017); and
- EIA Regulations, 2014 published in Government Notice No. 982 of 4 December 2014.

Table 19: Summary of the Stakeholder Engagement to date

Task	Details	Date
I&AP notification (relevant authorities and I&APs)		
I&AP identification	An I&AP database was developed for the Project by establishing the jurisdiction of organisations, individuals and businesses in proximity to the Project site or with an interest in the proposed development. The same process has been followed in South Africa and Botswana, although it is not a legal requirement in Botswana to officially notify landowners adjacent to affected property owners. The database of I&APs includes the landowner, the adjacent landowners, relevant district and local municipal officials, relevant national and provincial government officials, and non-governmental organisations. This database is being augmented via chain referral during the ESIA process and will be continually updated as new I&APs are identified throughout the project lifecycle. The current list of potential I&APs is attached in ANNEXURE E.1	Updated as and when required
Notifications	<ul style="list-style-type: none"> • BIDs were emailed and posted to the identified I&APs. The shortened BIDs (pamphlets) outlining the project and translated into Afrikaans and Tswana in South Africa and Setswana in Botswana were hand delivered to community representatives. The BIDs are attached as ANNEXURE E.3. • Site notices were placed at strategic locations along the route along with the BIDs. • Authorities and I&APs were given 30 days within which to register and submit initial comments on the proposed project - the initial comment period was concluded on the 3 February 2017. 	<p>18 – 20 Jan 2017</p> <p>12 Dec 2016 - 3 Feb 2017</p>
Addressing comments received	All the issues and comments that have been raised by the I&APs through the various channels during the initial period of Scoping Phase (including I&AP registration forms and e-mail communications) have been captured in the Comments and Response Report (CRR) appended as ANNEXURE E.5.	19 Jan – 3 Feb 2017

7.2 Authorities Involved

The following state departments and/or authorities have been identified as the key stakeholders will be involved throughout the ESIA process and will be given the opportunity to comment on the project during the commenting periods.

Table 20: Project Stakeholder Database

Authorities	South Africa	Botswana
Local Authorities	<ul style="list-style-type: none"> • Mahikeng Local Municipality • Ramotshere Moiloa Local Municipality • Ngaka Modiri Molema District Municipality • SAPS – Nietverdiend 	

Authorities	South Africa	Botswana
Provincial Departments	<ul style="list-style-type: none"> • Department of Rural, Environment and Agricultural Development • North West Provincial Heritage Resources Authority • Department of Water and Sanitation • Department of Agriculture, Forestry and Fisheries - Regional Office • Department of Mineral Resources - Regional Office • Department of Public Works and Roads 	-
National Departments	<ul style="list-style-type: none"> • South African Heritage Resources Agency (SAHRA) • Department of Rural, Environment and Agricultural Development • Department of Energy • Department of Water and Sanitation - • Department of Agriculture, Forestry and Fisheries • Department of Rural Development and Land Reform • South African Civil Aviation Authority (SACAA)? 	<ul style="list-style-type: none"> • Department of Waste Management & Pollution Control (DWMPC) • Water Utilities Corporation • Department of Lands • Department of Public Health • Department of Tourism • Department of National Museum and Monuments • Department of Wildlife • Department of Forestry • Department of Crop Production • Department of Veterinary Services • Department of Animal Production • Botswana Tourism Organisation
Parastatals	<ul style="list-style-type: none"> • Telkom • Transnet SOC Ltd • South African National Roads Agency (SANRAL) • Eskom 	-
Non-Authority Stakeholders	<ul style="list-style-type: none"> • Bird Life South Africa • Mafikeng Nature Reserve 	<ul style="list-style-type: none"> • Businesses around/along site • Residents close to/along site • Bird Life Botswana • Kalahari Conservation Society
District council	-	<ul style="list-style-type: none"> • Kgatleng District Council • Kgatleng District Council Fire Department • Kgatleng District Council Environmental Health • Kgatleng District Council Roads Division • Kgatleng Land Board • Tribal Administrations/ Authorities • Dikgosi, Headmen and Village Development Committees (VDCs) • Members of Parliament and District Commissioners • Tribal Administrations, Land Boards and sub-Land Board • Elected representatives-MPs • Kgatleng Constituency (MP)

Authorities	South Africa	Botswana
Tribal Administrations/ Authorities	-	<ul style="list-style-type: none"> • Dikgosi, Headmen and Village Development Committees (VDCs) • Members of Parliament and District Commissioners • Tribal Administrations, Land Boards and sub-Land Board • Elected representatives-MPs • Kgatleng Constituency (MP)

7.3 Way Forward

The stakeholder engagement will continue during the scoping phase and the following tasks will be undertaken (Table 21).

Table 21: Stakeholder Engagement during the Draft Scoping Phase

Task	Details	Date
Notification and Comment on Draft Scoping Report		
Notification Letters	<p>All potential I&APs have been informed of the availability of the DSR by means of post and / or email. Relevant government departments have also been notified of the availability of the report and requested to submit comments.</p> <p>I&APs have been given 30 calendar days within which to submit comments or raise any issues or concerns they have with regard to the proposed project or ESIA process.</p>	-
Executive Summary	<p>An Executive Summary of the DSR was emailed and posted to the identified I&APs and other relevant stakeholders on the I&AP database, notifying them about the availability of the report for review</p> <p>Pamphlets, outlining the DSR and translated into Afrikaans and Tswana in South Africa and Setswana in Botswana will be hand delivered to community representatives during the community meetings.</p> <p>South Africa:</p> <ul style="list-style-type: none"> • Bewley • Lehurutshe: Community Library • Serake/ Driefontein: Swartfontein Post office or shopping complex • Supingstad: Shop / spaza <p>Botswana</p> <ul style="list-style-type: none"> • Tlokweng – Main Kgotla • Modipane - Main Kgotla • Dikwididi - Main Kgotla • Mokatse - Main Kgotla • Mochudi - Main Kgotla • Monametsane - Main Kgotla • Malotwane - Main Kgotla 	

Task	Details	Date
Placement of the DSR in the public venues	<p>A digital version of the DSR has been uploaded onto the Aurecon website for perusal and download. An online registration is required to access these documents at http://www.aurecongroup.com/en/public-participation.aspx.</p> <p>Electronic copies of the report will also be made available on request (on a CD).</p> <p>Hardcopies will made available for review at the following locations:</p> <p>South Africa:</p> <ul style="list-style-type: none"> • Miga • Serake/ Driefontein <p>Botswana:</p> <p>The appropriate venues are yet to be identified.</p> <p>Proof of the DSR placed in the public venues will be included in the Final Scoping Report (FSR).</p>	
Site notices	<p>Site notices with a size of 600 mm x 420 mm were put up to inform the general public of the proposed project and the SE process. These were placed strategically in public places along the proposed site namely:</p> <p>South Africa:</p> <ul style="list-style-type: none"> • Bewley, • Lehurutshe: Community Library, • Serake/ Driefontein: Swartfontein Post office or shopping complex, • Supingstad: Shop / spaza <p>Botswana:</p> <ul style="list-style-type: none"> • Dikwididing • Mochudi <p>Photos of the site notices have been included in the FSR.</p>	-
Media adverts	<p>An advertisement will be placed in the newspapers at the start of the public comment period to notify the public of the availability of the DSR. The notice will be placed in the following newspapers:</p> <p>South Africa</p> <ul style="list-style-type: none"> • One relevant local newspaper: Mafikeng Mail or Capro Media • One provincial or national newspaper: Beeld <p>Botswana</p> <ul style="list-style-type: none"> • To be placed weekly for three weeks, the first advertisement 21 days before the public meeting date • National newspaper: The Daily News (government owned newspaper that comes out daily and is given freely to all communities around the country). <p>Proof of the advertisement will be included in the FSR.</p>	-
Public and Focus group Meetings	<p>Public meetings and/or public open house will be held in the following public venues:</p> <p>Proof of the ad</p>	-

Task	Details	Date
	<p><u>South Africa</u></p> <ul style="list-style-type: none"> • ELCSA Miga a Lutheran Church - 15km from Bewley (a settlement near Ramatlabama border control (RSA) • Lehurutshe Civic Centre • Klippan Boerevereniging • Community Centre - Supingstad <p><u>Botswana</u></p> <ul style="list-style-type: none"> • Tlokweneng – Main Kgotla • Modipane - Main Kgotla • Dikwididi - Main Kgotla • Mokatse - Main Kgotla • Mochudi - Main Kgotla • Monametsane - Main Kgotla • Malotwane - Main Kgotla) <p>The minuetts and comments from the meetings will be included in the FSR.</p>	
Addressing comments received	All comments received on the DSR will be collated into a Comments and Response Report (CRR). The responses to these comments from the applicant and the EAP will also be provided in the CRR and will be included as an annexure to the FSR.	!

SECTION 8

8 Plan of Study for ESIA

This section describes the Plan of Study for ESIA process as per the NEMA requirements and sets out how the ESIA will be conducted.

8.1 Contents

This Plan of Study (PoS) for ESIA has been compiled in terms of the content requirements listed in Appendix 2 to the South African EIA Regulations of 2014 (GN R 982) as amended and EIA Regulation of 2012 (Botswana).

The Plan includes:

- vi. a description of the **alternatives to be considered and assessed** within the preferred site, including the option of not proceeding with the activity;
- vii. a description of the **aspects to be assessed** as part of the environmental impact assessment process;
- viii. **aspects to be assessed by specialists;**
- ix. a description of the **proposed method of assessing the environmental aspects**, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;
- x. a description of the **proposed method of assessing duration and significance;**
- xi. an indication of the **stages at which the competent authority will be consulted;**
- xii. particulars of the **public participation process / stakeholder engagement process** that will be conducted during the environmental impact assessment process;
- xiii. a description of the **tasks that will be undertaken** as part of the environmental impact assessment process;
- xiv. identification of suitable **measures to avoid, reverse, mitigate or manage identified impacts** and to determine the extent of the residual risks that need to be managed and monitored.

8.2 Alternatives to be considered

The following alternatives have been identified and will be considered in the ESIA Phase (**Table 22**):

Table 22: Summary of the project alternative considered

Alternative type	Description	Alternatives considered	Preferred option
Location	Powerline route	Route C to new Watershed B location	√
		Route E	
		Route S	

Alternative type	Description	Alternatives considered	Preferred option
Design	Tower structures	a518 lattice tower series (Quad Zebra)	All the alternatives considered will be used where appropriate
		515 Guyed-V lattice towers	
		529 Cross-roped lattice tower,	
		520 Guyed-V lattice towers,	
Technology	Conductor	Triple Tern ACSR conductor	√
No-Go alternative	No development	No development of the BOSA transmission line	

8.3 Aspects to be assessed

During the screening process various potential impacts on the biophysical and socio-economic environment were identified. **Table 23** indicates the specialist baseline that have already been undertaken as part of the scoping phase. During the ESIA phase the specialists will undertake detailed impact assessments, which will be incorporated into the Draft EIR.

Table 23: Specialist studies

Potential Impact	Assessment	Specialist
Impacts on avifauna	Avifaunal Assessment	Chris van Rooyen Chris van Rooyen Consulting
Impacts on aquatic and terrestrial biodiversity	Aquatic and Terrestrial Biodiversity Assessment	Brian Colloty Scherman Colloty and Associates
Impacts on heritage resources	Heritage Impact Assessment	Stephan Gaigher GH Heritage Management Consultants
Visual impacts	Visual impact assessment	Elmie Weideman Aurecon SA (Pty) Ltd
Socio-economic impacts	Social Impact Assessment (SIA) and Livelihoods Restoration Plan (LRP)	Tebogo Sebogo Aurecon SA (Pty) Ltd
	Stakeholder Engagement	Amelia Visage Aurecon SA (Pty) Ltd
Climate Change impacts	Climate Change Assessment <i>(This will be undertaken in the ESIA Phase)</i>	Daniël Brink Aurecon SA (Pty) Ltd

In addition to the above-mentioned specialist studies, additional studies may be required as a result of comments on the DSR, from I&APs, CA and/or commenting authorities. Any additional studies will be undertaken during the EIA Phase and included in the Draft EIR.

8.4 Specialist Studies: Terms of Reference

Table 24: Specialist Terms of Reference

Study	Aim	Terms of Reference
Avifaunal Assessment	Provide a status quo report of the existing avifaunal habitat within which the project will be undertaken	<p>The specialist must undertake the following tasks:</p> <p style="text-align: center;">Baseline description</p> <ul style="list-style-type: none"> • Desktop review of all relevant available information; • Undertake additional field work if required to verify desktop assessment or address gaps in available data; • Liaise and consult with the relevant authorities and communities, as required, to access additional information applicable to the investigation; • Identify relevant legislation and policies to be complied with; • Identify sensitive elements that may potentially be impacted on by the proposed development; and • Make recommendations for additional study required. <p style="text-align: center;">Impact Assessment</p> <ul style="list-style-type: none"> • Assess the preferred alternative route and any technology alternatives provided by the project team; • Identify avifaunal flight paths, IBAs and SCCs; • Identify and evaluate predicted impacts of proposed development on the affected avifauna; • Assess significance of each impact and propose mitigation measures • Determine the cumulative impact in terms of the current and proposed activities in the area; • Identify additional measures to ensure that the project contributes towards sustainability goals; • Provide recommendations for any ongoing monitoring that may be necessary; and • Identify any assumptions and limitations that have informed the study or gaps in knowledge that have become apparent.
Aquatic and Terrestrial Biodiversity Assessment	Determine the impacts of the proposed project on aquatic and terrestrial ecology.	<p style="text-align: center;">Baseline</p> <ul style="list-style-type: none"> • Collate all secondary data available; • Undertake additional field work required to verify desktop assessment or address gaps in available data; • Provide a focussed and relevant description of all baseline characteristics and conditions of the sites being considered. • Liaise and consult with the relevant authorities, as required, to access additional information applicable to the investigation; • Identify relevant legislation and policies to be complied with; • Determine thresholds of acceptable change and relevant standards to be complied with;

Study	Aim	Terms of Reference
		<ul style="list-style-type: none"> • Determine the ecosystem services; • Identify sensitive elements that may potentially be impacted on by the proposed development; and • Make recommendations for additional study required. <p style="text-align: center;">Assessment</p> <p>Flora:</p> <ul style="list-style-type: none"> • Provide a description of the general floristic species diversity and community composition; • Evaluating the occurrence of potential Red Data taxa; • Demarcating physiognomic units based on floristic relevés; and • Provide an indication on the ecological condition (successional stage) of the predetermined physiognomic units, which will also be related to any ecosystem services / habitat function. <p>Fauna:</p> <ul style="list-style-type: none"> • A detailed faunal assessment including a small mammal trapping session and nocturnal surveys based on strategically placed wildlife cameras; • An evaluation of the occurrence of any important vertebrates and invertebrates. <p>Wetlands and rivers:</p> <ul style="list-style-type: none"> • As highlighted in the above sections a large proportion of the available habitat related to sensitive or important taxa, are associated with the wetland / riverine habitats. The EIA phase will thus focus on critical assessment of the wetland / riverine systems in the following way: • Delineation of the wetland and river boundaries using the requisite techniques based upon the latest Wetland Classification systems (Ollis et al. 2013); • Identification of relevant ecosystem services provided by and of the rivers or wetlands • Indicate suitable buffer zones as prescribed by the relevant provincial policies / conservation plans • Assess the status of the observed faunal and floral populations observed; <p>Overall assessment will include the following:</p> <ul style="list-style-type: none"> • Assess the preferred alternative route and any technology alternatives provided by the project team; • Identify and evaluate predicted impacts of proposed development on the ecosystem services; • Allow for assessment of impacts during the construction, operation and decommissioning phases, as well as direct and indirect impacts;

Study	Aim	Terms of Reference
		<ul style="list-style-type: none"> • Determine the ecosystem services that may be affected, the value of such systems and the impacts associated with loss of ecosystem benefits and how these impacts can be avoided or the ecosystem restored to provide the service; • Propose measures to mitigate the negative impacts and optimise the positive ones; • Assess significance of each impact and propose mitigation measure; • Determine the cumulative impact in terms of the current and proposed activities in the area; • Identify additional measures to ensure that the project contributes towards sustainability goals; • Provide recommendations for any ongoing monitoring that may be necessary; and • Identify any assumptions and limitations that have informed the study or gaps in knowledge that have become apparent. <p>The assessment of flora will include identification of the rare, endemic and endangered species; natural habitats; and conservation status of species and habitats.</p> <p>The faunal assessment will include amphibians, reptiles, birds and mammals (including bats), and will include species distribution based on literature according the habitat / Species Gap distribution, identification of the most sensitive areas or ecosystems and characterisation of rare, endemic and endangered fauna species.</p>
Heritage Impact Assessment	Provide a status quo report of the existing cultural landscape within which the Project will be undertaken	<p style="text-align: center;">Baseline</p> <ul style="list-style-type: none"> • Collate all secondary data available; • Undertake additional field work required to verify desktop assessment or address gaps in available data; • Provide a focussed and relevant description of all baseline characteristics and conditions of the sites being considered. • Liaise and consult with the relevant authorities, as required, to access additional information applicable to the investigation; • Identify relevant legislation and policies to be complied with; • Determine thresholds of acceptable change and relevant standards to be complied with; • Determine the ecosystem services; • Identify sensitive elements that may potentially be impacted on by the proposed development; and • Make recommendations for additional study required. <p style="text-align: center;">Assessment</p> <ul style="list-style-type: none"> • Assess the preferred alternative route and any technology alternatives provided by the project team; • Identify and evaluate predicted impacts of proposed development on the heritage resources • Assess significance of each impact and proposed mitigation measures. • Determine the cumulative impact in terms of the current and proposed activities in the area;

Study	Aim	Terms of Reference
		<ul style="list-style-type: none"> • Identify additional measures to ensure that the project contributes towards sustainability goals; • Detail the processes to be followed to obtain required permits and to relocate graves; • Provide recommendations for any ongoing monitoring that may be necessary; and • Identify any assumptions and limitations that have informed the study or gaps in knowledge that have become apparent.
Visual impact assessment	Assess the visual impact associated with the proposed development	<p style="text-align: center;">Baseline</p> <ul style="list-style-type: none"> • Collate all secondary data available; • Undertake additional field work required to verify desktop assessment or address gaps in available data; • Provide a focussed and relevant description of all baseline characteristics and conditions of the sites being considered. • Liaise and consult with the relevant authorities, as required, to access additional information applicable to the investigation; • Identify relevant legislation and policies to be complied with; • Determine thresholds of acceptable change and relevant standards to be complied with; • Determine the ecosystem services; • Identify sensitive elements that may potentially be impacted on by the proposed development; and • Make recommendations for additional study required. <p style="text-align: center;">Assessment</p> <ul style="list-style-type: none"> • Assess the preferred alternative route and any technology alternatives provided by the project team; • Identify and evaluate predicted impacts of proposed development on the visual environment and/or natural landscapes; • Assess significance of each impact before and propose mitigation measures; • Determine the cumulative impact in terms of the current and proposed activities in the area; • Identify additional measures to ensure that the project contributes towards sustainability goals; • Provide recommendations for any ongoing monitoring that may be necessary; and • Identify any assumptions and limitations that have informed the study or gaps in knowledge that have become apparent.
Social Impact Assessment	Assess the socio-economic impacts associated with the proposed development	<p style="text-align: center;">Baseline</p> <ul style="list-style-type: none"> • Collate all secondary data available; • Undertake additional field work required to verify desktop assessment or address gaps in available data; • Provide a focussed and relevant description of all baseline characteristics and conditions of the sites being considered. • Liaise and consult with the relevant authorities, as required, to access additional information applicable to the investigation;

Study	Aim	Terms of Reference
		<ul style="list-style-type: none"> • Identify relevant legislation and policies to be complied with; • Determine thresholds of acceptable change and relevant standards to be complied with; • Determine the ecosystem services; • Identify sensitive elements that may potentially be impacted on by the proposed development; and • Make recommendations for additional study required. <p style="text-align: center;">Assessment</p> <ul style="list-style-type: none"> • Assess the preferred alternative route and any technology alternatives provided by the project team; • Identify and evaluate predicted impacts of proposed development on the social environment, including but not limited to the following: <ol style="list-style-type: none"> (1) Develop a detailed overview and understanding of the demographic profile of the community; (2) Assess regional and local economies, with an emphasis on the way in which households in the project area sustain themselves; (3) Identify and assess the needs of vulnerable groups (i.e women), indigenous people and ethnic minorities; (4) Identify and assess the factors that contribute to the overall quality of life; (5) Employment opportunities for affected communities (6) How gender issues will be addressed or monitored; • Assess significance of each impact and propose mitigation measures; • Determine the cumulative impact in terms of the current and proposed activities in the area; • Identify additional measures to ensure that the project contributes towards sustainability goals; • Provide recommendations for any ongoing monitoring that may be necessary; and • Identify any assumptions and limitations that have informed the study or gaps in knowledge that have become apparent.
Climate Change Assessment	To determine the potential impact of climate change on the project and how the project may contribute to climate change	The terms of Reference will be included in the FSR.

In addition to the above-mentioned tasks, the specialists will also be required to be have inputs in the public participation, namely:

- Provide input into the public presentation at the Scoping and ESIA phases as detailed by Aurecon, based on the issues raised; and
- Assist EAP with appropriate responses to issues raised by stakeholders in the public participation process, as required.

8.5 Methodology for impact assessment

The assessment of the significance of impacts for a proposed development is by its nature, a matter of judgement. To deal with the uncertainty associated with judgement and ensure repeatable results, Aurecon rates impacts using a standardised and internationally recognised methodology adhering to ISO 14001 and World Bank/IFC requirements.

8.5.1 Consequence Criteria

For each predicted impact, criteria are applied to establish the significance of the impact based on likelihood and consequence, both without mitigation being applied and with the most effective mitigation measure(s) in place.

The criteria that contribute to the consequence of the impact are **intensity** (the degree to which pre-development conditions are changed), which also includes the **type of impact** (being either a positive or negative impact); the **duration** (length of time that the impact will continue); and the **extent** (spatial scale) of the impact. The sensitivity of the receiving environment and/or sensitive receptors is incorporated into the consideration of consequence by appropriately adjusting the thresholds or scales of the intensity, duration and extent criteria, based on expert knowledge. For each impact, the specialist applies professional judgement to ascribe a numerical rating for each criterion according to the examples provided in **Table 25**, **Table 26** and **Table 27** below.

Table 25: Definition of Intensity ratings

Criteria		
Rating	Negative impacts (-)	Positive impacts (+)
Very high (-/+ 4)	Very high degree of damage to natural or social systems or resources. These processes or resources may restore to their pre-project condition over very long periods of time (more than a typical human life time).	Great improvement to ecosystem or social processes and services or resources.
High (-/+ 3)	High degree damage to natural or social system components, species or resources.	Intense positive benefits for natural or social systems or resources.
Moderate (-/+ 2)	Moderate damage to natural or social system components, species or resources.	Average, on-going positive benefits for natural or social systems or resources.
Low (-/+ 1)	Minor damage to natural or social system components, species or resources. Likely to recover over time. Ecosystems and valuable social processes not affected.	Low positive impacts on natural or social systems or resources.
Negligible (0)	Negligible damage to individual components of natural or social systems or resources, such that it is hardly noticeable.	Limited low-level benefits to natural or social systems or resources.

Table 26: Definition of Duration ratings

Rating	Criteria
2	Long-term: The impact will continue for 6-15 years.
1	Medium-term: The impact will continue for 2-5 years.
0	Short-term: The impact will continue for between 1 month and 2 years.

Table 27: Definition of Extent ratings

Rating	Criteria
2	Regional: The impact will affect the entire region
1	Local: The impact will extend across the site and to nearby properties.
0	Site specific: The impact will be limited to the site or immediate area.

The consequence is then established using the formula:

$$\text{Consequence} = \text{type} \times (\text{intensity} + \text{duration} + \text{extent})$$

Depending on the numerical result, the impact's consequence would be defined as either extremely, highly, moderately or slightly detrimental; or neutral; or slightly, moderately, highly or extremely beneficial. These categories are provided in **Table 28** below:

Table 28: Application of Consequence ratings

Rating	Significance rating
-8	Extremely detrimental
-7 to -6	Highly detrimental
-5 to -4	Moderately detrimental
-3 to -2	Slightly detrimental
-1 to 1	Negligible
2 to 3	Slightly beneficial
4 to 5	Moderately beneficial
6 to 7	Highly beneficial
8	Extremely beneficial

8.5.2 Significance criteria

To determine the significance of an impact, the **probability** (or likelihood) of that impact occurring is also taken into account. In assigning probability the specialist takes into account the likelihood of occurrence but also takes cognisance of uncertainty and detectability of the impact. The most suitable numerical rating for probability is selected from **Table 29** below:

Table 29: Definition of Probability ratings

Rating	Criteria
4	Certain/ Definite: There are sound scientific reasons to expect that the impact will definitely occur.
3	Very likely: It is most likely that the impact will occur.

2	Fairly likely: This impact has occurred numerous times here or elsewhere in a similar environment and with a similar type of development and could very conceivably occur.
1	Unlikely: This impact has not happened yet but could happen.
0	Very unlikely: The impact is expected never to happen or has a very low chance of occurring.

The significance is then established using the following equation:

$$\text{Significance} = \text{consequence} \times \text{probability}$$

Depending on the numerical result of this calculation, the impact would fall into a significance category of negligible, minor, moderate or major, and the type would be either positive or negative. Examples of these categories are provided in **Table 30**:

Table 30: Application of significance ratings

Rating	Significance rating
-4	Very high - negative
-3	High - negative
-2	Moderate - negative
-1	Low - negative
0	Very low
1	Low - positive
2	Moderate - positive
3	High - positive
4	Very high - positive

8.5.3 Confidence rating

Once the significance of an impact occurring without mitigation has been established, the same impacts will be assigned ratings after the proposed mitigation has been implemented.

Although these measures may not totally eliminate subjectivity, they provide an explicit context within which to review the assessment of impacts. The specialists appointed to contribute to this impact assessment have empirical knowledge of their respective fields and are thus able to comment on the confidence they have in their findings based on the availability of data and the certainty of their findings. As with all studies it is not possible to be 100% certain of all facts, and for this reason a standard “degree of certainty” scale (**Table 31**). The level of detail for specialist studies is determined according to the degree of certainty required for decision-making. The impacts are discussed in terms of affected parties or environmental components.

Table 31: Definition of Confidence ratings

Rating	Criteria
Low	Judgement is based on intuition and there some major assumptions used in assessing the impact may prove to be untrue.
Medium	Determination is based on common sense and general knowledge. The assumptions made, whilst having a degree of uncertainty, are fairly robust.

High	Substantive supportive data or evidence exists to verify the assessment.
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8.5.4 Mitigation of Potential and Residual Impacts

The significance of the impacts identified during the scoping phase will be assessed during the impact assessment phase. The specialists will recommend measures to mitigate the impacts.

The implementation of the mitigation measures is ensured through the ESMP. The ESMP will be used to enforce the mitigation measures and ensure that the impacts of all phases of the proposed project are properly managed and addressed. The ESMP will meet all the requirements of the South African NEMA and Botswana EIAA.

The table below (**Table 32**) is a summary of the identified impacts (for construction and operation phase) and the preliminary significance thereof.

Table 32: Summary of the impacts identified and significance

Biophysical and Social Environmental Aspects	Identified Impacts	Significance Pre-mitigation	Proposed Mitigation Measures
Surface water	Sedimentation and erosion of surface water bodies resulting from the construction activities	[NEGATIVE] Significance still to be assessed in the ESIA phase	Erosion control measures must be put in place to minimised sedimentation.
	Impact on Critical Biodiversity Areas or impacts on present / future protected areas		Drainage or discharge of waste water or hydrocarbons must be prevented at all times.
	Changes to water quality		Any contaminated storm water and other run-off from the site shall be contained and cleaned. Any spill which may contaminate water must be treated according to the approved spill management method statement the Contractor compiled.
	Changes to the hydrological regime		No construction or abstraction water from the natural water resources may take place without the authorisation from the relevant competent authority.
	Loss of wetland and aquatic habitat		Watercourses must be rehabilitated in accordance with the ESMP, WULA and rehabilitation specifications.
	Increase in habitat fragmentation		
	Loss of species of special concern		
	Loss of habitat and ecosystem function / ecosystem services		
Floral Biodiversity	Altered floral habitat and diversity	[NEGATIVE] Significance still to be assessed in the ESIA phase	Vegetation clearing shall be done in accordance with Eskom standards for bush clearance and maintenance within overhead transmission line servitudes.
	Introduction of alien invasive plants		
	Altered habitat availability		

			<p>Protected or endangered species of plants shall not be removed unless they are interfering with a structure. Where such species have to be removed due to interference with a structure, the necessary permission and permits shall be obtained from the Department of Agriculture, Forestry and Fisheries (DAFF).</p> <p>Plants outside of the construction area are not to be disturbed, destroyed or removed.</p> <p>The use of herbicides shall only be allowed after a proper investigation into the necessity, the type to be used, the long-term effects and the effectiveness of the agent.</p>
Faunal Biodiversity including Avifauna	Impacts and/or loss of faunal habitat and ecosystem function	[NEGATIVE] Significance still to be assessed in the ESIA phase	Excavations must be fenced off to prevent some animals falling in.
	Impacts on faunal diversity		The contractor may under no circumstances make use of pesticide or poison to control unwanted animals.
	Displacement of Red List species due to disturbance and habitat transformation associated with the construction of the powerline		Workers should be educated so as not to kill any fauna found onsite.
	Collisions of Red List species with the earthwire of the proposed powerline		<p>The footprint of disturbance should be kept to a minimum.</p> <p>No hunting or trapping is permitted along the alignment.</p> <p>The breeding sites of raptors and other wild bird species shall be taken into consideration during the planning of the construction programme.</p> <p>Should any new sites or nests be found during the construction process, that was not known or have been noted before, each site shall be assessed for merit and the necessary precautions be taken to ensure the least disturbance.</p> <p>Bird guards and diverters shall be installed.</p>
Visual	Impacts on sense of place	Low [NEGATIVE]	Site specific mitigation measures will be provided after the site inspection.

	Impacts on landscape quality	Low [NEGATIVE]	
	Impacts on landscape character	Low [NEGATIVE]	
	VAC Slope and vegetation	Very Low [NEGATIVE]	
	VAC Patter/Diversity	No long term potential impacts are considered	
Socio-Economic	Temporary loss of land and assets	Moderate [NEGATIVE]	The Relocation Action Plan (RAP) study will be done in parallel to the ESIA to mitigate the socio-economic impacts.
	Population influx	Moderate [NEGATIVE]	
	Disruption of access routes and daily movement patterns	Moderate [NEGATIVE]	
	Impacts on sense of place	Moderate [NEGATIVE]	
	Dust generation	Moderate [NEGATIVE]	
	Noise and Vibration	Moderate [NEGATIVE]	
	Socio-cultural differences and conflicts	Moderate [NEGATIVE]	
	Various social pathologies	Moderate [NEGATIVE]	
	Crime	Moderate [NEGATIVE]	
	Informal settlements	Moderate [NEGATIVE]	
	Economic displacement	Moderate [NEGATIVE]	
	Local employment and job opportunities	Moderate [POSITIVE]	

	Local economy opportunities and economic empowerment	Moderate [POSITIVE]	
	Local economic growth	Moderate [POSITIVE]	
Heritage Features	Potential impacts on Historic, or heritage and Paleontological features, including graves or burials	[NEGATIVE] Significance still to be assessed in the ESIA phase	<p>The position of known sites must be shown on the final profiles. Such areas shall be marked as no go areas.</p> <p>All archaeological and heritage requirements contained in this EMP must be included as part of the environmental induction on site.</p> <p>Artefacts may not be removed or destroyed under any circumstances.</p> <p>No heritage features on site must be destroyed with the permit from the relevant competent authorities.</p>

8.6 Interaction with DEA in South Africa and Botswana

1 PRE-APPLICATION MEETING:

Pre-application meeting held with DEA in SA on 5 Decemebr 2016 and DEA in Botswana on 7 February 2017 inform DEA of the project, discuss ESIA process and requirements going forward.

2 DSR - COMMENTING PERIOD:

DSR will be submitted to DEA for comments (as per the Regulation 7(5) of GN R982 of 2014) during 30 day comment period. As per the requirements stipulated in NEMA egulations DEA comments must be recieved within specified 30 day period.

3 FSR SUBMISSION FOR APPROVAL:

As per the Regulation 22 of GN R982 of 2014,DEA in Sa must, within 43 days of receipt of the FSRm DEA must inform the applicant if the report has been accepted or not. A FSR will be submitted to DEA in Botswana.

4 DRAFT EIR - COMMENTING PERIOD:

Should the FSR and PoS be accepted, a draft EIR will be compiled and made available to the public for comments. During this period DEAIN SA will also comment of the report.

5 DECISION ON FINAL EIR:

Within 107 days of receipt of the EIR and SEMP the DEA in SA must in writing grant or refuse Environmental Authorisation. DEA in Botwana will also make a decision on the Final EIR

Figure 28 is an indication of the stage at which the CA (DEA) will be consulted.

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Figure 28: Stages of consultation

The above consultation opportunities with the DEA are based on the requirements of the EIA Regulations. However, additional consultation with the DEA may be required, depending on the outcome of the SE and specialist assessments and/or findings.

8.7 Stakeholder Engagement activities

The public will be given 3 opportunities to participate during the ESIA process, which include the following (Figure 29):

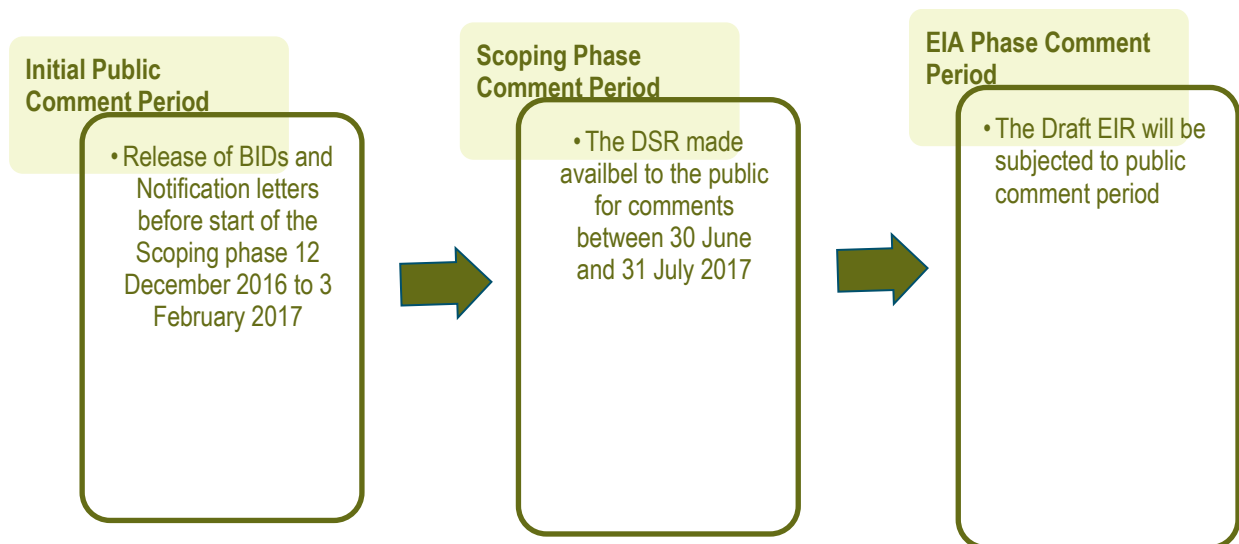


Figure 29: Engagement opportunities during the ESIA process

Throughout the ESIA process, I&APs have the opportunity to contact the EAP to discuss the project and raise any issues or concerns they might have. Focus group meetings will also be held with specific stakeholders to discuss issues that could be potential red flags for the proposed development. A detailed stakeholder Engagement Plan is attached as [ANNEXURE E](#).

8.8 Tasks to be undertaken during the EIA process

The activities that will take place during the EIA phase include but not limited to the following:

- **Specialist Studies**

Specialists will undertake their assessment of significance of impacts and make recommendations for mitigation measures to manage impacts.

Should additional specialist studies be required as a result of comments and information received during the comment period, the relevant specialists will be appointed to undertake these studies.

- **Draft EIR**

The Draft EIR will be compiled, together with the ESMP once the Scoping Report has been accepted by the DEA in both countries. The Draft EIR will incorporate comments and/or necessary changes recommended by the CA. The Draft EIR will also incorporate the findings from any additional specialist assessments undertaken.

- **Stakeholder Engagement**

The Draft EIR will be subjected to 30 day comment period. Advertisements and notifications will be sent out to inform the public of the availability of the report for comments.

All comments received during public comment period on the Draft EIR will be compiled into an updated CRR.

- **Final EIR**

Compilation of Final EIR and ESMP for submission, taking into account all the comments received during the review of the Draft EIR.

SECTION 9

9 Conclusion

This section briefly concludes the report and outlines few key environmental issues, progress to date and recommendations going forward

As per the requirements of South African NEMA and Botswana EIAA, this Scoping study has reviewed a range of project alternatives and contemplated the array of potential the biophysical and social impacts associated with the proposed BOSA project. The main findings and recommendations of the scoping investigations and the next phases of the ESIA process have been documented in this report.

At this stage, no fatal flaws have been identified. Potential impacts have been identified and these will be assessed in the ESIA Phase. The following potential impacts were identified:

- Impacts on surface water resources
- Impacts on terrestrial biodiversity (fauna and flora)
- Impact on avifauna
- Visual impacts
- Impacts on human settlements
- Impact on heritage resources

The following activities are currently being undertaken, or will be completed shortly:

- This report has been advertised and made available for public review, during which period the CAs will also make comment;
- Various public meetings will be held to discuss the Project and present the content of this Report;
- All issues and comments received during the comment period for the DSR will be documented and responded to in the CRR and included in the FSR, which will be submitted to the DEA in South Africa and Botswana for decision making.

SECTION 10

10 Reference List

- Aurecon. (2016). Final Inception Report – BOSA Transaction Advisory Services. Pretoria: Aurecon.
- BPC. (2017). *Safety, Health and Environment Risk Policy, Revision Number Rev 2 POL-CoS-07* .
- CSIR. (2006). *A Systematic Conservation Plan for the Freshwater Biodiversity of the Crocodile (West) and Marico Water Management Area* . . Pretoria: CSIR.
- DBSA. (2015). *Environmental and Social Safeguard Standards*.
- DBSA. (2017, June). *The Development Bank of Southern Africa - About us*. Retrieved from The Development Bank of Southern Africa: www.dbsa.org <http://www.dbsa.org/EN/About-Us/Pages/About-Us.aspx>
- DEA. (2010). *Guideline on Need and Desirability, Integrated Environmental Management Guideline Series 9* . . Pretoria: Department of Environmental Affairs .
- DEA. (2010). *Public Participation 2010, Integrated Environmental Management Guideline Series 7* . . Pretoria: Department of Environmental Affairs.
- DEA. (2015). *EIA Guideline for Renewable Energy Projects* . . Pretoria: Department of Environmental Affairs.
- DEA. (2017). *Public Participation guideline in terms of the NEMA EIA Regulations* . Pretoria: Department of Environmental Affairs.
- DEA&DP. (2013). *Guideline on Alternatives, EIA Guideline and Information Document Series* . . Cape Town: Western Cape Department of Environmental Affairs and Development Planning.
- DEA&DP. (2013). *Guideline on Need and Desirability, EIA Guideline and Information Document Series* . . Cape Town: Western Cape Department of Environmental Affairs and Development Planning.
- DEAT. (2002). *Scoping, Integrated Environmental Management Information Series 2* . . Pretoria: Department of Environmental Affairs and Tourism.
- DEAT. (2002). *Specialist Studies, Integrated Environmental Management, Information Series 4* . . Pretoria: Department of Environmental Affairs and Tourism.
- DEAT. (2002). *Stakeholder Engagement, Integrated Environmental Management, Information Series 3* . . Pretoria: Department of Environmental Affairs and Tourism.
- DEAT. (2004). *Criteria for determining Alternatives in EIA, Integrated Environmental Management, Information Series 11* . . Pretoria: Department of Environmental Affairs and Tourism.
- Equator Principles. (2014, March). *EP Guidance for consultants Independent Review*. Retrieved from check

- Eskom. (2016). *Safety, Health, Environment and Quality (SHEQ) Policy, Rev 1 32-727* .
- GEF. (2017). *Review of the GEF Policy on Agency Minimum Standards on Environmental and Social Safeguards*.
- IFC. (2007). *Manual Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets*. Washington: International Finance Corporation.
- IFC. (2012). *Performance Standards on Environmental and Social Sustainability* .
https://www.ifc.org/wps/wcm/connect/c8f524004a73daeca09afdf998895a12/IFC_Performance_Standards.pdf?MOD=AJPERES (Accessed: 17 January 2017).
- IFC. (2012). *Policy on Environmental and Social Sustainability*. Retrieved from International Finance Corporation:
http://www.ifc.org/wps/wcm/connect/7540778049a792dcb87efaa8c6a8312a/SP_English_2012.pdf?MOD=AJPERES
- OPIC. (2012). *Overseas Private Investment Corporation Environmental Guidance Renewable Energy – Solar Projects* . Unpublished Report.
- OPIC. (2017, March). *OPIC - Environmental and Social Policy Statement*. Retrieved from Overseas Private Investment Corporation:
https://www.opic.gov/sites/default/files/consolidated_esps.pdf
- SAPP. (2010). *Environmental and Social Impact Assessment Guidelines for Transmission Infrastructure for the SAPP Region*.
- SRK. (2017). *Environmental and Social Framework (ESMF) for the Southern African Power Pool (SAPP): Final*. Report prepared for SAPP.