ESKOM HOLDINGS (SOC) LTD

NORTHERN KWAZULU-NATAL STRENGTHENING PROJECT: IPHIVA 400/132KV SUBSTATION

Proposed Construction of the new Iphiva 400/132 kV Substation and associated infrastructures on Site 6.1, within the jurisdiction of Nongoma Local Municipality in Zululand District Municipality, KwaZulu-Natal Province.

Draft Environmental Impact Assessment Report

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Confidentiality Statement

ESKOM HOLDINGS NORTHERN KWAZULU-NATAL STRENGTHENING PROJECT (SOC) LTD:

PROPOSED IPHIVA 400/132KV SUBSTATION AND ASSOCIATED INFRASTRUCTURE

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

EXECUTIVE SUMMARY

Background

ESKOM Holdings SOC Ltd (Eskom) has commissioned a project to strengthen the supply of electricity in northern KwaZulu-Natal (KZN).

In 2018, Eskom contracted NAKO ILISO as the Environmental Assessment Practitioner (EAP) to obtain Environmental Authorisation (EA) to construct the Iphiva 400/132 kV Substation approximately 9km west of the town of Mkuze, within the Nongoma Local Municipality, which falls within the Zululand District Municipality (DFFE Reference Number: 14/12/16/3/3/2/1037). After obtaining the EA, it was determined that the authorised site was not technically feasible for the construction of the substation and that the site should rather be located approximately 80m to the west of the previously authorised site.

Margen Industrial Services was appointed to undertake the Environmental Impact Assessment (EIA) process for the construction of the proposed Iphiva 400/132 kV Substation on Site 6.1. Margen manages the project and undertakes the Public Participation Process (PPP). SiVEST Environmental Division was appointed as the independent Environmental Assessment Practitioners (EAP).

This report documents the process and findings of the EIA for the proposed project.

Need for the Project

The northern KZN network is currently fed at 132 kV by the Normandie and Impala Main Transmission Substations. The major load centres are Pongola and the Makhathini Flats. The Normandie Substation is situated approximately 80km northwest of Pongola and the Impala Substation is situated approximately 180 km south of Makhathini Flats. High voltage drops are experienced in the 132 kV network and the voltages are approaching unacceptable low voltage levels as the demand increases. Contingencies on the main 132 kV supplies also lead to thermal overloading of the remaining network.

Project Description

To strengthen and alleviate current and future network constraints in northern KZN, it is proposed that the Iphiva 400/132kV Substation on Site 6.1 be introduced in the area, which will de-load the main sub-transmission network and improve the voltage regulation in the area. The Iphiva 400/132 kV Substation will

be integrated with the existing electricity network by 400kV Transmission powerlines to the Normandie Substation, and approximately 165km of 132kV Distribution powerlines[1].

Listed Activities

The proposed project triggers several activities listed in the Environmental Impact Assessment Regulations, promulgated under the National Environmental Management Act (Act 107 of 1998) (NEMA), as amended, as requiring environmental authorisation before they can commence. The purpose of this study is to undertake an EIA process, with associated Public Participation Process (PPP) and specialist studies, to enable the Competent Authority (CA) to decide whether the project should go ahead or not, and if so, then on what conditions.

Receiving Environment

The project is located in the Northern KZN Province. The climate of the area is typified by warm to hot summers, high evaporation, dry warm winters and a mean annual rainfall between 495 and 1 560 mm. The average rainfall is higher in the west and decreases gradually to the east. The dominant landscape features are valley slopes to undulating hills and flat plains with a network of trailing rivers and smaller streams.

There are only a few large towns, namely Mkhuze and Pongola, in the area. The rest of the area consists of settlements in areas under traditional leadership, commercial farms as well as game reserves. The land under traditional management belongs to the Ingonyama Trust. Settlement patterns are scattered. Dwellings consist mostly of brick structures or traditional structures. Most people have isiZulu as their home language.

Basic and social infrastructure is limited and does not meet the needs of the entire population in the area. Local municipalities in the area are faced with challenges that urban municipalities do not have. The settlement patterns make it extremely challenging to provide infrastructure such as piped water and sanitation. Road infrastructure in general needs some upgrading, and the conditions of the roads make it challenging to reach the communities that need to be served. As there are few employment opportunities in these areas, many males have migrated to urban areas in search of employment, resulting in a community that stays behind with more females than males, as well as a very young population group. Other challenges include poverty, unemployment, illiteracy and skills levels and crime. Subsistence farming is a very important livelihood strategy and informal trading plays a much greater role in survival than in urban areas.

Alternatives

During the previous EIA process[2], thirteen (13) sites were initially identified. This was narrowed down to six (6) sites which were considered in the Scoping Phase of the project and the two most preferred sites, Iphiva 3 and Iphiva 6 were further assessed in the specialist studies and assessment phase.

[1] The Normandie-Iphiva 400 kV Transmission Powerline (DFFE Ref No 14/12/16/3/3/2/1036); and the 132 kV Distribution Powerlines (DFFE Reference Number: 14/12/16/3/3/2/1038) were also authorised in 2018.

[2] This EIA process was executed by Nako Iliso.

Iphiva 6 was selected based on the above and was authorised in 2018. Due to the cost involved in developing the authorised site, the Eskom technical team proposed moving the site 80m to the west of the authorised site.

Due to the extensive site selection process undertaken by Eskom during the previous EIA process, no assessment of alternative sites will be undertaken in this EIA process (i.e. in the Impact Assessment Phase of the project).

Public Participation

Public participation is an important aspect of any EIA, with the objective to assist the developer by providing avenues for stakeholders to table issues of concern, suggestions for enhanced benefits and to comment on the findings of the EIA, which have to be considered by the developer. The PPP is designed to provide sufficient and accessible information to Interested and Affected Parties (I&APs) in an objective manner, and for the I&APs to give comments that will enhance the development of the project.

An I&AP database was established to record the details of stakeholders that wish to register for the project. All identified interested and affected parties were identified and notified of the project and their opportunities to participate.

Advertisements were placed in the local newspapers (Isolezwe and Ilanga English). Site notices were placed at strategic points like points where communities wait for transport (taxi and buses), Mandlakazi TC Office, entrance to Nongoma LM offices etc. Copies of Background Information Documents (BIDs) with Reply Sheets were also placed at these key points in the study area. BIDs with Reply Sheets have been sent via emails to all stakeholders captured in the database, that is, government officials, commenting authorities and organisations and NGOs.

Key Issues

The following key issues have been identified in the EIA:

- *Impacts on protected areas resulting in loss of plants and animals of conservation value and a loss in the income from and value of the facilities, primarily due to visual impacts.*
- *Impacts on the rich and diverse fauna and flora (specifically large birds);*
- *Impacts on Heritage Resources;*
- *Social Impacts;*
- *Economic Impacts;*
- *Construction Impacts; and*
- *Cumulative Impacts.*

Conclusion and Recommendations

The specialist assessments were conducted to address the potential impacts relating to the proposed development in order to ascertain the level of each identified impact, as well as mitigation measures which may be required.

The **Wetland assessment** (refer to **Appendix D**) concluded that no wetlands were identified within the direct footprint of the infrastructure (Project Area), however, artificial wetlands (dam and drain) and four wetland Hydrogeomorphic (HGM) units were identified within the 500 m regulated area of the Project Area (Area of Influence (AoI)).

The dam is however not connected to a natural watercourse and fills up via re-directed surface runoff using an artificial drain and precipitation. The dam dries up in the dry season. The dam is an artificial wetland system/watercourse, however, has the same legal status as natural wetland systems/water courses in South Africa. The wetlands were categorised into the following HGM units:

- Two Unchannelled Valley Bottom Wetlands (UVB) with a distinct Riparian Zone.
- Two Channelled Valley Bottom Wetlands (CVB) with a distinct Riparian Zone; and
- Artificial wetlands, including a dam and drain.

The natural wetlands cover approximately 9.96 hectares (ha) of the AoI, and the Artificial wet areas (dam and drain) cover approximately 0.6 ha. The infrastructure is not proposed within any delineated wetland/watercourse, however, falls within the 500 meters (m) regulated area.

The overall impacts of the Project on the natural wetlands within the AoI were determined to be minor to negligible prior mitigation and largely negligible significance following the implementation of the proposed mitigation measures. It is the opinion of the specialist that should the proposed mitigation measures and monitoring programme be implemented correctly; the impacts on the natural wetlands will be insignificant. The following actions are recommended to reduce adverse effects on the wetlands within the proposed Project Area:

- Limit infrastructure within wetlands as far as practically possible to avoid and minimise impacts on adjacent and downstream wetlands (e.g., sedimentation, erosion and contamination);
- Establish at least a 15 m buffer around the CVB wetlands and a 16 m buffer around the UVB wetlands to protect wetland areas from infrastructure that may lead to erosion and sedimentation of the receiving watercourses;
- Rehabilitate impacted wetlands within the AoI (only when impacted by the proposed activities);
- Monitor and mitigate wetlands affected by the activities;
- Ensure rehabilitation with special attention to reshaping the impacted areas, re-vegetating and mitigating potential contamination;
- A protective barrier/ no-go buffer against cattle should be implemented around the rehabilitated areas, during the rehabilitation phase only, to ensure the re-establishment of vegetation as soon as possible to maintain the wetland functionality and prevent erosion, sedimentation and creation of preferential flow paths;
- Promote the natural diffuse flow of water through the landscape from the infrastructure areas to prevent erosion (or channelisation), sedimentation and formation of preferential flow paths;
- Implement the recommended monitoring program to detect impacts to the wetlands within the AoI early on and implement remediation/remedies as soon as impacts are observed; and
- Reduce the risk of erosion, compaction, and the creation of preferential flow paths by re-vegetating exposed areas, maintaining linear infrastructure and culverts and installing sediment traps and erosion berms.

The **Terrestrial assessment** (refer to **Appendix D**) concluded that the development footprint does overlap with ESAs, CBAs and NPAES Focus Areas, however, the proposed substation is situated in an area that has been completely transformed. This means that the development would not compromise the ecological functioning or the long-term conservation value of the area. Vegetation types are not intact within the proposed substation footprint; however, the surrounding vegetation types are largely intact with very little prospect of long-term transformation through the current land-use practises, the species and habitats found within them are therefore fairly widespread and not unique to the Project site. The impact of the proposed substation is considered to be low and acceptable following mitigation. The following actions are recommended to reduce potential impacts to fauna and flora of the proposed Project area:

- The area must be screened before construction activities. If potential fauna SCC are recorded prior to construction, the faunal SCC species must be located and relocated, if possible, before the construction phase.
- The field survey recorded five (5) provincially protected and two (2) nationally protected flora species within the Project area and in its immediate surrounds. A Pre-screening assessment will need to take place prior to construction in order to map and quantify the protected flora that will require permits.
- It is recommended that a rescue and relocation of the flora and protected flora within the development footprint be undertaken. Where possible avoid large trees and replant the removed vegetation within the nearby vicinity of the area.
- Restriction of vehicle movement over sensitive areas to reduce degradation of untouched areas, if any.
- Ensure earth moving equipment contain no soil or vegetative material before entering the site as a means to prevent Alien Invasive Plants (AIP) sprawl.
- Minimise unnecessary removal of the natural vegetation cover outside the development footprint.
- After rehabilitation the area must be fenced, and animals (cattle and goats) should be kept off the area until the vegetation is self-sustaining and established.

The **Avifauna assessment** (refer to **Appendix D**) concluded that no avian SCC were recorded within the Project boundary during the 2022/23 assessment however, three (3) species were recorded in close proximity to the proposed substation, namely Bateleur, White-back Vulture and Tawny Eagle recorded approximately 12 km south of the site. The proximity of the proposed substation in relation to the surrounding protected areas gives rise to one major concern regarding the bird community, the potential of bird collisions with sensitive raptors and other avian SCC. If the mitigation measures and recommendations are implemented throughout the project life correctly and timeously, there is no severe negative impacts anticipated for the development of this substation and its associated electrical components.

The **Heritage assessment** (refer to **Appendix D**) concluded that based on the understanding of the Project while considering the results of this assessment, Digby Wells does not object to the Project. The following actions are recommended to reduce potential identified impacts:

- Eskom must avoid impacts to PEC7505-002, PEC7505-008, PEC7505-009 and PEC7505-012 through Project design or redesign to avoid these heritage resources and implement a 30 m no-go buffer zone around these heritage resources.
- Eskom must appoint a suitably qualified heritage specialist to be present when any construction activities occur within 50 m of the identified heritage resources. Alternatively, an ECO (or similar responsible person) may complete this oversight to ensure that the heritage resources are not impacted.
- Where Project design amendments are not feasible, Eskom will need to embark on a consultation process to assess whether a Grave Relocation Process (GRP) is feasible.
- Burial Grounds and Graves as well as the identified agricultural plot (Living Cultural Heritage) occur within or adjacent to households and/or yards due to traditional practices of burying within properties. A social consultative process with communities is recommended to ensure where graves are present and where they will need to be relocated to avoid impact; and
- Eskom develop and implement a Chance Find Protocol (CFP) as part of the Environmental Management Programme (EMPr), if this has not been done as part of the previous process in support of the approved substation layout (and associated powerlines). If this document has been developed, it must be amended to include this Project.

The **Visual assessment** (refer to **Appendix D**) concluded that the are no objection to the project provided that the below mitigations measures are implemented.

Planning and site development

- With the construction of the substation and associated activities (site camp office, stockpiling area and material laydown area), the minimum amount of existing vegetation and topsoil should be removed. Ensure, wherever possible, natural grassland vegetation is retained and incorporated into the site rehabilitation. All topsoil that occurs within the proposed footprint of an activity must be removed and stockpiled for later use.
- Good housekeeping will be required, and it is recommended that shade net be used to block views towards the construction site.
- Waste management is essential and can contribute to an untidy and aesthetically unpleasing construction site.

Earthworks

- Earthworks should be executed in such a way that only the footprint and a small 'construction buffer zone' around the proposed activities is exposed. In all other areas, the natural occurring vegetation, more importantly the indigenous vegetation should be retained, especially along the periphery of the site. Dust suppression techniques should be in place always during all phases of the project, where required.

Landscape and ecological approach

- Should new vegetation be introduced to the site, an ecological approach to rehabilitation and vegetative screening measures, as opposed to a horticultural approach to landscaping should be adopted.
- Vegetation screens along the east, west and northern boundaries will screen the direct views towards the substation but will not mitigate the visual impact completely since the structures will be visible above the tree line and the power lines connecting the substation with the rest of the Eskom Project will still be visible.

Lighting

- Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the site.
- Avoid high pole top security lighting along the periphery of the site and use only lights that are activated on illegal entry to the site.
- Minimise the number of light fixtures to the bare minimum, including security lighting.
- With the construction of the proposed substation, security lighting should only be used where necessary and carefully directed, preferably away from sensitive viewing areas.

This EIA Report has covered activities and findings related to the Scoping and EIA process for the proposed Iphiva Project. Professional experience, specialist knowledge, relevant literature and local knowledge of the area have all been used to identify the potential issues associated with the proposed project. No fatal flaws were identified during the EIA Phase. In conclusion, SiVEST, as the independent EAP, is therefore of the view that:

- The project location and project description can be authorised based on the findings of the suite of specialist assessments.

- A cumulative impact assessment of similar developments in the area was undertaken by the respective specialists. Based on their findings, the majority of the cumulative impacts associated with the proposed development will be low before mitigations.
- Through the implementation of mitigation measures, together with adequate compliance monitoring, auditing and enforcement thereof by the appointed Environmental Control Officer (ECO) as well as the Competent Authority, the overall potential detrimental negative impacts associated with the proposed development can be mitigated to acceptable levels.

ESKOM HOLDINGS (SOC) LTD
NORTHERN KWAZULU-NATAL STRENGTHENING PROJECT

PROPOSED CONSTRUCTION OF THE NEW IPHIVA 400/132 KV SUBSTATION AND ASSOCIATED INFRASTRUCTURES ON SITE 6.1, WITHIN THE JURISDICTION OF NONGOMA LOCAL MUNICIPALITY IN ZULULAND DISTRICT MUNICIPALITY, KWAZULU-NATAL PROVINCE

DRAFT ENVIRONEMNTAL IMPACT ASSESSMENT REPORT

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ACRONYMS

AIA	Archaeological Impact Assessment
AIP	Alien Invasive Plant
ATNS	Air Traffic and Navigation Services Company Limited
BID	Background Information Document
CAA	Civil Aviation Act
CARA	Conservation of Agricultural Resources Act
CLA	Cultural Landscape Assessment
CSIR	Council for Scientific and Industrial Research
CS	Cultural Significance
DEA	Department of Environmental Affairs
DFA	Development Facilitation Act
DFFE	Department of Forestry, Fisheries and the Environment
EAP	Environmental Assessment Practitioner
EA	Environmental Authorisation
ECA	Environment Conservation Act
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMF	Electromagnetic field
EMF	Environmental Management Framework
EMPr	Environmental Management Programme
FEIAR	Final Environmental Impact Assessment Report
GA	General Authorisation
HIA	Heritage Impact Assessment
HSA	Hazardous Substances Act
I&APs	Interested and Affected Parties
IBAs	Important Bird Areas
IDP	Integrated Development Plan
KZN	KwaZulu-Natal
KZNHA	KwaZulu-Natal Heritage Act, 2008
LED	Local Economic Development
MDGs	Millennium Development Goals
MinMec	Ministers and Members of the Executive Council
MPRDA	Mineral and Petroleum Resource Development Act
MSA	Municipal Systems Act
NDA	Non-Disclosure Agreement
NDP	National Development Plan
NEMA	National Environmental Management Act
NEM:AQA	National Environmental Management: Air Quality Act
NEM:BA	National Environmental Management: Biodiversity Act
NEM:PAA	National Environmental Management: Protected Areas Act
NEM:WA	National Environmental Management: Waste Act
NFA	National Forest Act
NGO	Non-Governmental Organisation
NHRA	National Heritage Resources Act
NPC	National Planning Commission
NRTA	National Road Traffic Act

NWA	National Water Act
OHSA	Occupational Health and Safety Act
PAIA	Promotion of Access to Information Act
PDA	Planning and Development Application
PIA	Paleontological Impact Assessment
PICC	Presidential Infrastructure Coordinating Commission
POPIA	Protection of Public Information Act
PoS	Plan of Study
PPP	Public Participation Process
PGDS	Provincial Growth and Development Strategies
QDS Grid	Quarter Degree Square Grid
RoD	Record of Decision
RSA	Road Safety Act
SACAA	South African Civil Aviation Authority
SAHRA	South African Heritage Resources Agency
SALA	Subdivision of Agricultural Land Act
SANBI	South African National Biodiversity Institute
SEA	Strategic Environmental Assessment
SDF	Spatial Development Framework
SPLUMA	Spatial Planning and Land Use Management Act
SIPs	Strategic Integrated Projects
SSC	Species of Special Concern
TOR	Terms of Reference
UN	United Nations
WSA	Water Services Act
WUL	Water Use Licence
ZDM	Zululand District Municipality

ESKOM HOLDINGS NORTHERN KWAZULU-NATAL STRENGTHENING PROJECT (SOC) LTD:

PROPOSED IPHIVA 400/132KV SUBSTATION AND ASSOCIATED INFRASTRUCTURE

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

1. INTRODUCTION

1.1 BACKGROUND

Eskom Holdings SOC Ltd (hereafter referred to as 'Eskom') seeks to strengthen the supply of electricity in northern KwaZulu-Natal (KZN). The northern KZN network is currently fed at 132 kV by the Normandie and Impala Main Transmission Substations. The major load centres are Pongola and the Makhathini Flats. The Normandie Substation is situated approximately 80km northwest of Pongola and the Impala Substation is situated approximately 180 km south of Makhathini Flats. High voltage drops are experienced in the 132 kV network and the voltages are approaching unacceptable low voltage levels as the demand increases. Contingencies on the main 132 kV supplies also lead to thermal overloading of the remaining network.

To strengthen and alleviate current and future network constraints in northern KZN, it is proposed that the Iphiva 400/132kV Substation and associated infrastructures on Site 6.1 be introduced in the area, which will de-load the main sub-transmission network and improve the voltage regulation in the area. The Iphiva 400/132 kV Substation will be integrated with the existing electricity network by 400kV Transmission powerlines to the Normandie Substation, and approximately 165km of 132kV Distribution powerlines.

In 2018, Eskom contracted NAKO ILISO as the Environmental Assessment Practitioner (EAP) to obtain Environmental Authorisation (EA) to construct the Iphiva 400/132 kV Substation approximately 9km west of the town of Mkuze, within the Nongoma Local Municipality, which falls within the Zululand District Municipality (DFFE Reference Number: 14/12/16/3/3/2/1037). After obtaining the EA, it was determined that the authorised site was not technically feasible for the construction of the substation and that the site should rather be located approximately 80m to the west of the previously authorised site (**Figure 1**). Margen Industrial Services was appointed to undertake the Environmental Impact Assessment process for the construction of the proposed Iphiva 400/132 kV Substation and associated infrastructures including the access road on Site 6.1. Margen manages the project and undertaking the public participation process. SiVEST Environmental Division was appointed as the independent EAP, by Margen. Where appropriate, the information prepared for the previous EIA process was incorporated into this study and the work of Ms. Terry Calmeyer, representing NAKO ILISO, is acknowledged.

1.2 PURPOSE OF THE STUDY

The proposed project triggers several activities listed in the Environmental Impact Assessment Regulations, promulgated under the National Environmental Management Act (Act 107 of 1998) (NEMA), as amended, that requires Environmental Authorisation before construction can commence. The purpose of this study is to undertake an Environmental Impact Assessment (EIA) process in terms of the EIA Regulations, 2014 (as amended) promulgated in terms of Chapter 5 of the NEMA, with associated Public Participation Process (PPP) and specialist studies, to enable the Competent Authority (CA), the National Department of Forestry, Fisheries and the Environment (DFFE), to decide whether the project should go ahead or not, and if so, then on what conditions. All relevant legislation and guidelines will be consulted during the EIA process and will be complied with at all times.

1.3 OBJECTIVES OF THIS REPORT

This report documents the process and findings of the Scoping and EIA Process.

1.4 STRUCTURE OF THE REPORT

The location of the project is presented in Section 2 of this report. A description of the project in **Section 3**. The policy and legislation context is summarised in **Section 4** and the need and desirability for the project in **Section 5**. The alternatives considered in the EIA Phase are described in **Section 6**, and public participation during the EIA Phase is detailed in **Section 7**. The receiving environment is described in **Section 8**, The impacts are described in **Section 9** and cumulative impacts in **Section 10**. **Section 11 until Section 21** present the findings, conclusion and way forward.

The Final Scoping Report and Plan of Study for EIA was submitted to DFFE, and acceptance was received on 12 April 2023 (refer to **Appendix B**). Additional information requested by the DFFE in the Acceptance of the Scoping Report and the location of the requested information in this EIA Report is detailed in this EIA Report in table below.

Table 1: DFFE requirements and reference to Section in the EIA Report

DFFE Requirement for EIA:	Response / Location in this EIA Report:
Listed Activities (i) The EIAR must provide an assessment of the impacts and mitigation measures for each of the listed activities applied for.	The EIAR provide an assessment of the impacts and mitigation measures for each of the listed activities applied for. Refer to **Section 9**
(ii) Please ensure that all relevant listed activities are applied for, are specific and can be linked to the development activity or infrastructure (including thresholds) as described in the project description. Only activities (and sub-activities) applicable to the development must be applied for and assessed.	The Application form has been amended to include only the relevant activities; this is also included in the EIAr. The activities applied for are relevant to the proposed Iphiva Substation development and can be linked to the development activity or infrastructure in the project description.
(iii) The listed activities represented in the EIAR, and the application form must be the same and correct.	The Application form has been amended. The Activities represented in the EIAr do not differ from those in the application form. Refer to **Table 8**.

DFFE Requirement for EIA:	Response / Location in this EIA Report:
(iv) The EIAR must assess the correct sub listed activity for each listed activity applied for.	The EIAr assessed the correct sub-listed activity for each listed activity applied for, as per the application form.
Public Participation (i) Please ensure that comments from all relevant stakeholders are submitted to the Department with the EIAR.	All comments received from all relevant stakeholders are submitted to the Department with the EIAR. Refer to **Appendix B** of the EIAr.
(ii) Please ensure that all issues raised, and comments received during the circulation of the draft SR and draft EIAR from registered I&APs and organs of state which have jurisdiction in respect of the proposed activity are adequately addressed in the final EIAR. Proof of correspondence with the various stakeholders must be included in the final EIAR. Should you be unable to obtain comments, proof should be submitted to the Department of the attempts that were made to obtain comments.	All comments received during the public participation process and those submitted on the scoping phase 30-day review and comment period are included in the C&RR (included as **Appendix B** of the EIAr), and have been responded to, as required. Proof of correspondence with the various stakeholders and proof of attempts to obtain comments from the stakeholders on the project database are included in **Appendices B** of the EIAr.
(iii) A Comments and Response trail report (C&R) must be submitted with the final EIAR. The C&R report must incorporate all comments for this development. The C&R report must be a separate document from the main report and the format must be in the table format as indicated in Appendix 1 of this comments letter. Please refrain from summarising comments made by I&APs. All comments from I&APs must be copied verbatim and responded to clearly. Please note that a response such as "noted" is not regarded as an adequate response to I&AP's comments.	The C&RR is attached as a separate document in **Appendix B** of the EIAr. Written comments received have been captured verbatim and not summarized and responded to as applicable. Following the review and comment period of the EIAr, all written responses received will be included in the C&RR to be appended to the final EIAr for submission to DFFE.
(iv) Comments from I&APs must not be split and arranged into categories. Comments from each submission must be responded to individually.	Comments received have been captured by date order in the C&RR and have been responded to individually. Refer to Appendix B of the EIAr.
(v) The public participation process must be conducted in terms of Regulation 39, 40, 41, 42, 43 & 44 of the EIA Regulations, 2014, as amended.	The Public Participation Process was conducted in terms of Regulation 39, 40, 41, 42, 43 & 44 of the EIA Regulations 2014, as amended (GNR 326.
(vi) The EAP is requested to contact the Department to make the necessary arrangements to conduct a site inspection prior to the submission of the final EIAR.	The necessary arrangements will be made with the Department to conduct a site visit prior to the submission of the final EIAr.
(vii) This Department noted that, an advertisement was placed in English in two local newspapers (Isolezwe- 03 May 2022 and ILANGA 28 April 2022).	Acknowledged.

DFFE Requirement for EIA:	Response / Location in this EIA Report:
(viii) You are therefore, required to provide proof of newspaper advertisement that is in line with first application of this specific project. This project was lodged on 20 January 2023.	When the project commenced, an advert was placed on 03 May 2022 in Isolezwe local newspaper. The objective of the advert was to invite and notify interested and affected parties of the proposed development (Refer to **Appendix B**). Due to unforeseen circumstances the submission of the project was delayed. When the application was submitted to the Competent Authority on the 20 January 2023, only a letter was sent to REGISTERED stakeholders telling them about the availability of the DSR and advising them to comment (Proof attached on **Appendix B**). For the release of the DEIA Report, an advert was published in two newspapers in English and Zulu namely (Isolezwe and Ilanga LaseNatali). Please note that the commenting period on the advert is from 14 June 2023 to 14 July 2023. Since the DEIAR was not made available on the said date, the notification that was sent to interested and affected parties regarding the availability of the DEIAR Report have given interested and affected parties extra days for commenting period to ensure that the regulated 30 days commenting period (Refer to **Appendix B**). Furthermore I&APs have been informed about the 1. Submission of the FSR to the CA 2. Approval of the FSR and the commencement of the EIAR Phase. This was done by using a letter and placing site notices. 3. The availability of the DEIAR has been advertised in the two regional newspapers. 4. Registered I&APs has also received the executive summary of the DEIAR.
(ix) Furthermore, the attached site notice boards indicate 28 April 2022. There is no proof of site notice boards advertised 20 January 2023.	site notices were used for the availability instead the registered stakeholders were notified by letter. Site notices were only used right at the beginning when notifying the public about the new project and inviting them to register as an interested or affected party. Site notices have since been put on site indicating the beginning of the DEIAR. (Refer to **Appendix B**).
Alternatives (i) The EAP is required to provide clear assessment for each identified alternative and further provide clear motivation and reasons as to why the preferred alternative proves to be the preferred compared to other alternatives. These alternatives include: • Site alternative. • Design and layout alternative. • No-go alternative.	The clear assessment for each identified alternative and clear motivation and reasons as to why the preferred alternative proves to be the preferred compared to other alternatives are included in **Section 6**.
(ii) If no alternative assessed, motivation must be provided.	Where no alternative has been assessed. Motivation has been provided. Refer to **Section 6.**
The layout map must indicate the following: All supporting onsite infrastructure such as follows: • Vegetation clearing footprint for the substation.	A copy of the layout and sensitivity map including the road and associated infrastructure is included in **Figure 28**, of the EIAr. The layout responds to identified sensitivities and technical limitations.,.

DFFE Requirement for EIA:	Response / Location in this EIA Report:

• Upgrade/construction of access roads that will accommodate heavy loads.
• All existing infrastructure on the site, especially internal road infrastructure.
• Neighboring human settlement (if any).
• Please provide an environmental sensitivity map, if possible, which indicates the following:
  ○ The location of sensitive environmental features on site, e.g., CBAs, protected areas, heritage sites, wetlands, drainage lines etc. that will be affected by the facility and its associated infrastructure.
  ○ Buffer areas; and All "no-go" areas.	

Specialist assessments • Specialist studies to be conducted must provide a detailed description of their methodology, as well as indicate the locations and descriptions of Substation, and all other associated infrastructures that they have assessed and are recommending for authorisation. • The specialist studies must also provide a detailed description of all limitations to their studies. All specialist studies must be conducted in the right season and providing that as a limitation, will not be acceptable.	• The identified and recommended specialist studies include a detailed description of the methodology followed as well as an indication of the location and description of the development and all other associated infrastructure. • The specialist studies provide a detailed description of the limitations of the studies. All studies have been conducted in the right seasons.
• Please note that the Department considers a 'no-go' area, as an area where no development of any infrastructure is allowed; therefore, no development of associated infrastructure including access roads is allowed in the 'no-go' areas. Should the specialist definition of 'no-go' area differ from the Departments; this must be clearly indicated. The specialist must also indicate the 'no-go' area's buffer if applicable.	The Department's consideration of a no-go area is noted in that no development is permitted within all areas demarcated as a 'no-go' area. The specialist's no-go area definition is the same as the Department. The specialists have indicated the no-go areas and buffers where applicable.

DFFE Requirement for EIA:	Response / Location in this EIA Report:
• Should the appointed specialists specify contradicting recommendations, the EAP must clearly indicate the most reasonable recommendation and substantiate this with defendable reasons; and were necessary, include further expertise advice.	There are no contradicting recommendations from the specialists.
• All specialist studies must be final, and provide detailed/practical mitigation measures for the preferred alternative and recommendations, and must not recommend further studies to be completed post EA.	All specialist studies are final and provide detailed/practical mitigation measures and recommendations. The avifauna specialist has recommended a walk-through of the servitude once the tower positions have been identified in order to determine the presence of any nesting sites of bird species of special concern within or in close proximity to the towers.
• Please ensure that, all required specialist studies for the project are recommended and conducted. Finding and recommendations of the specialist studies must incorporate with final report and the EMPr for decision making.	All recommended specialist studies for the project have been undertaken. The findings and recommendations are incorporated in this report and in the Generic Substation EMPr.
General • Details of the future plans for the site and infrastructure after decommissioning in 20-30 years and the possibility of upgrading the proposed infrastructure to more advanced technologies must be indicated.	Iphiva Substation will be the first transmission substation north of Richards Bay therefore the plan at this stage is not to decommission the substation in 20 – 30 years but to refurbish it as and when needed according to Eskom Transmission asset management procedures. This will enable growth and development in the northern KZN parts of the province. The substation will be designed to accommodate 4 transformers, 1 transformer with phase 1 and the second transformer with phase 2 of the project while transformers 3 and 4 will be designed for as future transformers. Iphiva Substation will integrate to the existing transmission network by connecting to Normandie Substation in Mpumalanga in Phase 1 and connect to the Planned Duma Substation in the Empangeni CLN in phase 2, at this stage, there are no additional 400 kV lines planned in the 20 years.
• Should a Water Use License be required, proof of application for a license needs to be submitted.	Should there be any infrastructures within 500 m of the regulated area around the Project Area or should any WUL triggers be identified, a water use application will be lodged with the relevant authority.
• A construction and operational phase EMPr that includes mitigation and monitoring measures must be submitted with the final EIAR.	The Generic Substation EMPr is included in **Appendix E** of the EIAr.
• The comments issued by this Department on 16 February 2023, during the draft scoping report are still valid and must be all addressed throughout the EIA process.	It is noted. The comments issued on 16 February 2023, during the draft scoping report have been taken into consideration when compiling the EIA Report.

1.5 CONTENT REQUIREMENTS FOR AN ENVIRONMENTAL IMPACT ASSESSMENT

An Environmental Impact Assessment Report must contain the information that is necessary for the competent authority to consider and come to a decision on the application. The content requirements for an Environmental Impact Assessment Report (as provided in Appendix 3 of the EIA Regulations 2014, as amended), as well as details of which section of the report fulfils these requirements, are shown in **Table 2** below.

Table 2: Content requirements for an Environmental Impact Assessment Report

Content Requirements	Applicable Section
(a) details of- (i) the EAP who prepared the report; and (ii) the expertise of the EAP, including a curriculum vitae;	Section 1.8
(b) the location of the activity, including- (i) the 21-digit Surveyor General code of each cadastral land parcel; (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 2
(c) a plan which locates the proposed activity or activities applied for at an appropriate scale, or if it is- (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Figure 7
(d) a description of the scope of the proposed activity, including- (i) all listed and specified activities triggered;	Section 3.4
(ii) a description of the activities to be undertaken, including associated structures and infrastructure;	Section 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 4
(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 5
(g) a full description of the process followed to reach the proposed preferred activity, site and location of the development footprint within the site, including - (i) details of all the alternatives considered;	Section 6.1
(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
(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;	Section 7.4
(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 7.5
(v) the impacts and risks which have informed the identification of each alternative, including the nature, significance, consequence, extent, duration and probability of such identified impacts, including the degree to which these impacts- (aa) can be reversed;	Section 6.2

Content Requirements	Applicable Section
(bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;	
(vi) the methodology used in identifying and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	Section 9
(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 9
(viii) the possible mitigation measures that could be applied and the level of residual risk;	Section 6.1.2
(ix) the outcome of the site selection matrix;	Section 6.1.2
(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and	Section 6.1.2
(xi) a concluding statement indicating the preferred alternatives, including the preferred location of the activity;	Section 6.2
(v) a description of the proposed method of assessing duration and significance;	Section 9
(ix) identify suitable measures to avoid, reverse, mitigate or manage identified impacts and determine the extent of the residual risks that need to be managed and monitored.	Section 9
(i) an undertaking under oath or affirmation by the EAP in relation to- (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;	Appendix A
(j) 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;	Appendix A
(k) where applicable, any specific information required by the competent authority; and	Section 19
(l) any other matter required in terms of section 24(4)(a) and (b) of the Act.	n/a
(2) Where a government notice gazetted by the Minister provides for any protocol or minimum information requirement to be applied to an EIA report, the requirements as indicated in such notice will apply.	Appendix C

1.6 PROJECT TITLE

Proposed Construction of the New Iphiva 400/132 kV Substation and associated infrastructures on Site 6.1, within the jurisdiction of Nongoma Local Municipality in Zululand District Municipality, KwaZulu-Natal Province.

1.7 DETAILS OF APPLICANT

Table 3: Name and contact details of the applicant

Business Name of Applicant	Eskom Holdings (SOC) Ltd
Physical Address	Megawatt Park, Maxwell Drive, Sunninghill, Johannesburg
Postal Address	P O Box 1091, Johannesburg,
Postal Code	2000

Telephone	011 800 2303
Fax	086 663 2051
Email	bokwett@eskom.co.za

1.8 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTIONER

Table 4: Name and contact details of the Environmental Consultant

Business Name of EAP	Margen Industrial Services	SiVEST SA (PTY) Ltd
Physical Address	26 Jellicoe Street, Ex 1, Witbank, 1035	12 Autumn Road, Rivonia, 2128
Postal Address	P.O. Box 12822, Leraatsfontein	PO Box 2921, Rivonia
Postal Code	1038	2128
Telephone	013 – 6561212	011 – 798 0633
Email	delno@telkomsa.net	nataliep@sivest.com

Table 5: Names and details of the expertise of the EAP's involved in the preparation of this report

Name of representative of the EAP	Educational Qualifications	Professional Affiliations	Experience (years)
Michelle Nevette	MEnvMgt. (Environmental Management)	SACNASP Registration No. 120356 EAPASA Registration No. 2019/1560 IAIAsa	22
Natalie Pullen	MSc Environmental Biotechnology	EAPASA Registration No. 2018/132 IAIAsa	19
Rendani Rasivhetshele	BSc Hons Environmental Management	EAPASA Registration No. 2019/1729	6
Moses Mahlangu	B. Sc. Hons: Botany and Plant Ecology	IAIAsa	21
Siphiwokuhle Buthelezi	BSocSci Hons (Geography and Environmental Management)	IAIAsa	1

CVs of personnel is attached in **Appendix A.** The EAP declaration is attached in **Appendix A**.

1.9 NAMES AND EXPERTISE OF THE SPECIALISTS

The table below provides the names of the specialists involved in the project:

Table 6: Names of specialists involved in the project

Company	Name of representative of the specialist	Specialist	Educational Qualifications	Experience (years)
Digby Wells	Johan Nel	Heritage Impact Assessment	BA (Hons) Archaeology	>20
Digby Wells	Danie Otto	Wetland Impact Assessment	MSc Environmental Management	25
Digby Wells	Danie Otto	Terrestrial Ecology Assessment	MSc Environmental Management	25
Digby Wells	Danie Otto	Avifaunal Impact	MSc Environmental	25

Company	Name of representative of the specialist	Specialist	Educational Qualifications	Experience (years)
		Assessment	Management	
Green Tree Environmental Consulting	Yonanda Martin	Visual Impact Assessment	MSc. Ecological Remediation and Sustainable Utilisation Registered Professional Natural Scientist – 400204/09 EAPASA Registration – 2019/1307	16

2. LOCATION OF THE ACTIVITY

GN 982 Appendix 2:
(b) the location of the activity, including-
- (i) the 21-digit Surveyor General code of each cadastral land parcel;
- (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;

(c) a plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is-
- (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or
- (ii) on land where the property has not been defined, the coordinates within which the o be undertaken;

The proposed project consists of the new Iphiva 400/132 kV Substation and associated infrastructures near the town of Mkuze in KZN, which will be integrated into the existing electricity network by a 400 kV Transmission powerline to the Normandie Substations, and approximately 165 km of 132 kV Distribution powerlines that will link into the Iphiva 400/132kV Substation.

2.1 21 DIGIT SURVEYOR GENERAL CODE AND FARM NAME OF THE SITE

Table 7: 21 Digit Surveyor General Code

SG CODE	DESCRIPTION
N0HU00000001583200000	Farm No. 15832 Reserve No. 12

2.2 COORDINATES OF THE SITE

The centre point coordinates for the sites are as follows:

- Latitude: 27°39'7.063"S
- Longitude: 31°55'47.883"E

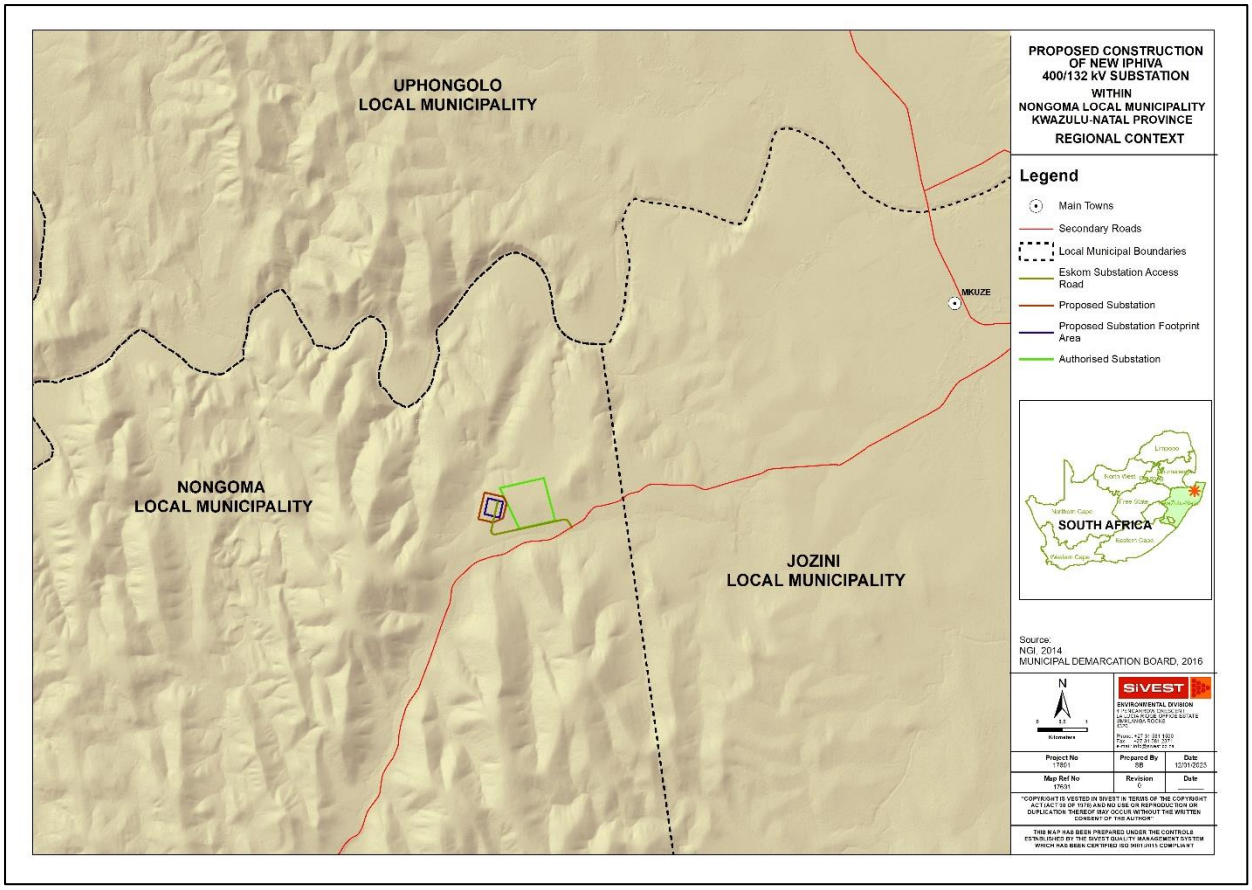

Figure 1: Iphiva 400/132 kV Substation Regional Context

3. PROJECT DESCRIPTION

GN 982 Appendix 2:

(d) a description of the scope of the proposed activity, including-

(i) all listed and specified activities triggered;

(ii) a description of the activities to be undertaken, including associated structures and infrastructure;

3.1 OVERVIEW OF THE ELECTRICAL NETWORK

This section describes the proposed project and activities listed in the EIA Regulations 2014, as amended, that will be triggered by the project. Photographs in this section are courtesy of Bruce Burger (Eskom). Power is generated at a power station (which could be coal fired, nuclear, solar, wind, hydro or other). From the power station a Transmission powerline, which could be 765 kV, 400 kV, 275 kV or 220 kV, transports the electricity to the area where it is needed as bulk. If this is a very long distance, then Transmission substations may be required along the route. Once the electricity is in the area that it is required and it is to be distributed, it is transformed to 132 kV, 88 kV, 66 kV, 44 kV or 33 kV for distribution to the end user. At Distribution substations, the electricity is stepped down to 22 kV or 11 kV and ultimately to 400 or 240 V before connecting to the end user (**Figure 2**).

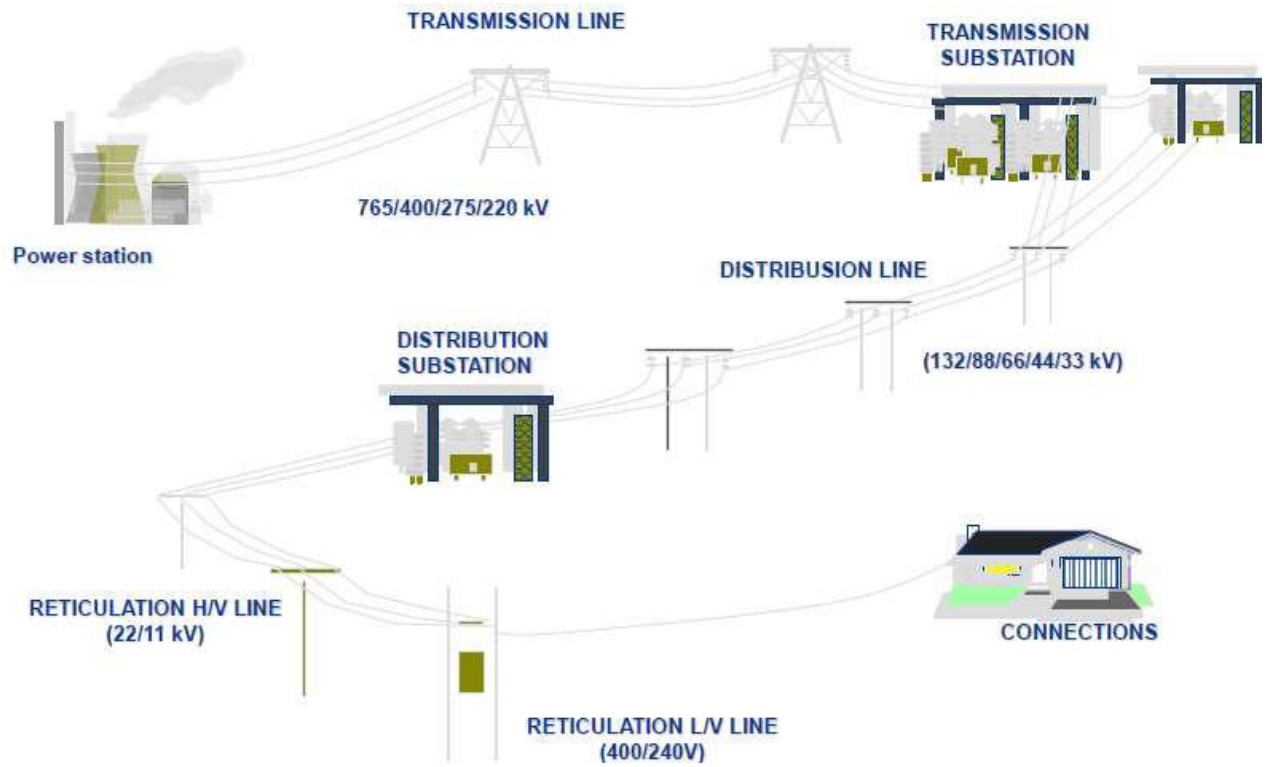

Figure 2: Electrical Networks

3.2 DESCRIPTION OF THE PROPOSED IPHIVA 400/132 KV SUBSTATION, ACCESS ROAD AND ASSOCIATED INFRASTRUCTURES

To strengthen and alleviate current and future network constraints in northern KZN, it is proposed that the Iphiva 400/132 kV Substation be introduced in the area, which will de-load the main sub-transmission network and improve the voltage regulation in the area. The Iphiva 400/132 kV Substation will be integrated with the existing electricity network by a 400 kV Transmission powerline to the Normandie Substation, and approximately 165 km of 132 kV Distribution powerlines.

A total footprint of 600 x 600 m (i.e., 36 ha) will be required for the development, within a site-specific study area of 1km x 1 km. This footprint will include construction requirements and will be rehabilitated and fenced off. The 36-ha development footprint area includes provisions for an 80 m high microwave radio communication mast, oil and fuel storage facilities, and an oil bund to contain any accidental transformer oil spills. The proposed substation will comprise standard electrical equipment, including transformers, reactors, busbars, and isolators.

Figure 3: Side view of typical substation site

Figure 4: Typical substation site

The substation needs to be close to the load centre and existing 132 kV powerline network to reduce construction costs. The site will be levelled before construction can commence, and a flat site is therefore required. A new access road will be established. The substation needs to be lit at night for safety and security reasons. The security lighting will be around the substation fence, the luminaire height is 4 m, and will be operated with a trigger from the lethal fence.

The Iphiva 400/132 kV Substation will be integrated with the existing electricity network by 400kV Transmission powerlines to the Normandie Substation, and approximately 165km of 132kV Distribution powerlines.

PROPOSED ACCESS ROAD

A new main access road will be established to provide access to the Iphiva Substation. The proposed road will be as follows:

- The main access road (gravel) will be approximately 6 - 7m wide and approximately 2.1km in length.
- It should be noted that the proposed project site will be accessed via a new proposed road from the P234 Gravel Road which branches off the N2 National Road. The proposed project location is approximately 9km north-west of the N2 National Road.

The Preliminary Layout is reflected below in **Figure 7**.

3.3 CONSTRUCTION PROCESS

No staff will be accommodated on site during the construction or operation of the substation or powerlines but will be transported to site each day.

Construction of the substation will consist of the following activities:

- Vegetation clearing, which could result in a loss of flora;
- Construction of access roads to accommodate heavy loads;
- Levelling and terracing of the surface;
- Construction of foundations and concrete works, including storm water drainage pipes, slabs, bund walls, a control room and a small building and storage area;
- All open areas between the transformer plinths and other switchgear foundations will be covered with about a 100 mm layer of 25 – 38 mm crushed stone. Before laying the crushed stone, the ground surface is intensively treated to strict specification with insecticide and herbicide to prevent insect activity and the growth of weeds and other plants in the high voltage yard;
- Erection of steelworks; and
- Delivery and installation of transformers.

3.4 NEMA LISTED ACTIVITIES

The amended EIA Regulations promulgated under Section 24(5) of the National Environmental Management Act, Act 107 of 1998 and published in Government Notice No. R. 326 list activities which may not commence without environmental authorization from the Competent Authority. The proposed

activity is identified in terms of Government Notice No. R. 327, 325 and 324 for activities which must follow a full Environmental Impact Assessment Process. The project will trigger the following listed activities:

Table 8: Listed activities in terms of NEMA: EIA Regulations 2014 (as amended in 2017), applicable to the proposed project.

Activity No(s):	Relevant activities as set out in Listing Notices 1, 2 and 3 of the EIA Regulations, 2014 as amended	Describe the portion of the proposed project to which the applicable listed activity relates.
Relevant Basic Assessment Activities as set out in Listing Notice 1		
11 (i)	GN R. 983 (11) (as amended): The development of facilities or infrastructure for the transmission and distribution of electricity- (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kV,	The substation is the infrastructure that is part of the system for the transmission and distribution of 132 kV of electricity outside of urban areas and industrial complexes.
14	GN R. 983 (14) (as amended): The development and related operation 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 80m^3 or more but not exceeding 500m^3.	The project entails the construction of a new sub-station, including storage facilities for oil. Based on initial concept designs, storage facilities will have a capacity of more than 80 m^3.
27	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation.	The development of the substation will require the clearance of more than 1 hectare or more but less than 20 hectares of indigenous vegetation.
28 (ii)	GN R. 983 (28) (as amended): Institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;	The total area to be developed for the substation is greater than 1ha and occurs outside an urban in an area currently being used for agriculture and/or game farming.
Relevant Scoping and EIA Activities as set out in Listing Notice 2 of the EIA Regulations, 2014 as amended		
9	GN R. 984 (9) (as amended): The development of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kV or more, outside an urban area or industrial complex.	The Substation is infrastructure that is part of the system for the distribution of electricity and will have a capacity of more than 275kV.
Relevant Basic Assessment Activities as set out in Listing Notice 3 of the EIA Regulations, 2014 as amended		
3(d)(viii)	GN R. 985 (3) (as amended): The development of masts or towers of any type used for telecommunication broadcasting or radio transmission purposes where the mast or tower- (a) is to be placed on a site not previously used for	The development of the substation will consist of a mast tower used for telecommunication broadcasting and will exceed 15 metres in height. The mast will be located outside an urban area. Have a

Activity No(s):	Relevant activities as set out in Listing Notices 1, 2 and 3 of the EIA Regulations, 2014 as amended	Describe the portion of the proposed project to which the applicable listed activity relates.
	this purpose (b) will exceed 15 meters in height. (d) In KwaZulu-Natal: (viii) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;	microwave radio communication mast that could be up to 80 m high.
4 (d) (viii)	GN R. 985 (4) (as amended): Development of a road wider than 4 m with a reserve less than 13, 5 metres. (d) In KwaZulu-Natal (viii) Critical Biodiversity areas as identified in systemic biodiversity plans adopted by the competent authority or bioregional plans;	An access road will be required within the project site to provide access to the substation and to facilitate access during on site. The main access road (gravel) will be approximately 6 - 7m wide and approximately 2.1km in length. The proposed development will be accessed via a new road from the P234 gravel road which branches off the N2.
12 (d)(v)	GN R. 985 (12) (as amended): The clearance of an area of 300 square metres or more of indigenous vegetation (d) KwaZulu-Natal: (v) Critical biodiversity areas as identified is systemic biodiversity plans adopted by the competent authority or in bioregional plans;	Approximately 12 ha will be cleared at the substation site. The clearance of more than 300m^2 will be required for the construction of the substation and associated infrastructure. The site is located within critical biodiversity areas as identified in the KwaZulu Natal Province bioregional plans.

4. POLICY AND LEGISLATIVE CONTEXT

GN 982 Appendix 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

The relationship between the project and certain key pieces of environmental legislation is discussed in the subsections to follow.

4.1 THE CONSTITUTION

The Constitution of the Republic of South Africa, Act 108 of 1996 sets the legal context in which environmental law in South Africa occurs and was formulated. All environmental aspects should be interpreted within the context of the Constitution, National Environmental Management Act 107 of 1998 (as amended) and the Environment Conservation Act 73 of 1989.

The Constitution has enhanced the status of the environment by virtue of the fact that an environmental right has been established (Section 24) and because other rights created in the Bill of Rights may impact on environmental management through, for example, access to health care, food and water and social security (Section 27). An objective of local government is to provide a safe and healthy environment (Section 152) and public administration must be accountable, transparent and encourage participation (Section 195(1) (e) to (g)).

Section 24 of the Constitution states that:

"Everyone has the right –

- To an environment that is not harmful to their health or well-being; and
- To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:
  - Prevent pollution and ecological degradation;
  - Promote conservation and
  - Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

The Constitution is the overarching legislation for South Africa. Although it provides for certain rights and obligations, the NEMA has been promulgated in order to manage the various spheres of both the social and natural environment.

4.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (107 OF 1998)

The National Environmental Management Act (Act No. 107 of 1998) was promulgated in 1998 but has since been amended on several occasions from this date. The act intends to provide for:

- co-operative environmental governance by establishing principles for decision-making on matters affecting the environment;
- institutions that will promote co-operative governance and procedures for coordinating environmental functions exercised by organs of state;
- to provide for the prohibition, restriction or control of activities which are likely to have a detrimental effect on the environment; and
- to provide for matters connected therewith.

NEMA is the overarching legislation which governs the EIA process and environmental management in South Africa. Sections 24 and 44 of NEMA make provision for the promulgation of regulations that identify activities which may not commence without an EA. Activities that may significantly affect the environment must be considered, investigated and assessed prior to implementation.

According to Section 2(3) of the National Environmental Management Act (NEMA) (Act No. 107 of 1998), “development must be socially, environmentally and economically sustainable”, which means the integration of these three factors into planning, implementation and decision-making so as to ensure that development serves present and future generations.

The EIA Regulations, 2014 (as amended) identify lists of activities which have the potential to result in detrimental environmental impacts and thus require EA, subject to either “Basic Assessment” or “Scoping and Environmental Impact Assessment”. The Regulations prescribe the procedural and substantive requirements for the undertaking of EIAs and the issue of EA’s.

The proposed project triggers listed activities under Listing Notice 1, 2 and 3 (as detailed in Section 7 above), and thus requires an EA subject to an Environmental Impact Assessment (EIA) Process.

4.3 NATIONAL WATER ACT (ACT 36 OF 1998)

The National Water Act (NWA) No 36 of 1998 was promulgated on 20 August 1998. This Act is important in that it provides a framework to protect water resources against over exploitation and to ensure that there is water for socio-economic and economic development, human needs and to meet the needs of the aquatic environment. The Act also recognises that water belongs to the whole nation for the benefit of all people.

Water resources as defined include a watercourse, surface water, estuary or aquifer. Specifically, a watercourse is defined as (inter alia):

- A river or spring;
- A natural channel in which water flows regularly or intermittently; and
- A wetland, lake or dam into which, or from which water flows.

Due to the possible encroachment into the wetland areas, the following Section 21 water uses in terms of the NWA may be triggered and require licensing:

- (c) impeding or diverting the flow of water in a watercourse; and
- (i) altering the bed, banks, course or characteristics of a watercourse.

In light of the above, there are a number of stipulations within the NWA that are relevant to the potential impacts on rivers, streams and wetlands that may be associated with the proposed development. A Surface Water Impact Assessment (**Appendix C**) has been conducted to explore how the proposed development may impact on identified water resources as protected by the Act. Should the proposed development require a General Authorisation (GA) or Water Use Licence (WUL), it will be determined and applied for separately prior to construction**.**

4.4 THE NATIONAL HERITAGE RESOURCES ACT 1999 (25 OF 1999)

The National Heritage Resources Act promotes good management of the heritage resources of South Africa which are deemed to have cultural significance and to enable and encourage communities to ensure that these resources are maintained for future generations.

The aim of the Act is to introduce an integrated, three-tier system for the identification, assessment and management of national heritage resources (operating at a national, provincial and local level). This legislation makes provision for a grading system for the evaluation of heritage resources on three levels which broadly coincide with their national, provincial and local significance.

This Act requires investigation to determine the impact of heritage resources when developments exceed the thresholds list in section 38 (1) of the act:

a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
b) the construction of a bridge or similar structure exceeding 50 m in length;
c) any development or other activity which will change the character of a site—
    (i) exceeding 5 000 m2 in extent; or
    (ii) involving three or more existing erven or subdivisions thereof; or
    (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
    (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
d) the re-zoning of a site exceeding 10 000 m2 in extent; or
e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

The proposed development would involve (a) the construction of a powerline exceeding 300m in length (c) the development of a substation that will change the character of more than 0.5ha, and (d), the rezoning of a site that will exceed 1ha.

Under this legislation, the South African Heritage Resources Agency (SAHRA) was established, which replaced the National Monuments Council. SAHRA is responsible for the preservation of heritage resources with exceptional qualities of special national significance (Grade I sites). A Provincial Heritage Resources Authority, established in each province, will protect Grade II heritage resources which are significance within the context of a province or region. Buildings and sites of local interest (Grade III sites) is the responsibility of local authorities as part of their planning functions. In this case, the Kwazulu-Natal Provincial Heritage Resources Authority, Amafa aKwaZulu-Natali (Amafa), will need to be consulted throughout the process.

Within the scope of this project, Section 38 of the NHRA (25 of 1999), states that, as described above, an assessment of potential heritage resources in the development area needs to be done. A Heritage Impact Assessment (HIA), Archaeological Impact Assessment (AIA), Paleontological Impact Assessment (PIA) and Cultural Landscape Assessment (CLA) has therefore been commissioned to explore how the proposed development may impact on heritage resources and potential cultural artefacts as protected by the Act.

4.5 KWAZULU-NATAL HERITAGE ACT, 2008 (KZNHA) (ACT NO. 4 OF 2008)

The KZNHA provides for the protection and management of heritage resources within KZN. These heritage resources take account of those under general protection and special protection, including:

- General protection:
- Structures under Section 33;

- Graves of victims of conflict under Section 34;
- Traditional burial places under Section 35; and
- Battlefields, archaeological sites, rock art sites, palaeontological sites, historic fortifications,
- Meteorite or meteorite impact sites under Section 36.
- Special Protection:
- Heritage Landmark under Section 38;
- Provincial Landmark under Section 39;
- Graves of members of the Royal Family under Section 40;
- Battlefield sites, public monuments and memorials under Section 41; and
- Heritage Objects under Section 43.

In terms of the KZNHA, a permit is required to carry out certain listed activities. To accomplish this, a Non-Disclosure Agreement (NDA) form must be completed for any proposed development. This form is submitted to Amafa for processing after which Amafa will issue comments for further heritage studies, if necessary.

An NDA will be submitted, as part of the HRM process, to Amafa and SAHRA. An HIA will be compiled to comply with subsection 3(3)(a) and (b) of the NHRA. The NDA was compiled to comply with the KZNHA and subsection 38(1) of the NHRA.

4.6 NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (NEM:BA) (ACT NO. 10 OF 2004, AS AMENDED)

As the principal national act regulating biodiversity protection, the National Environmental Management: Biodiversity Act (NEM:BA) (Act No. 10 of 2004), which is administered by the DFFE, is concerned with the management and conservation of biological diversity, as well as the use of indigenous biological resources in a sustainable manner.

The overarching aim of the NEM:BA, within the framework of the NEMA, is to provide for:

- The management and conservation of biological diversity within South Africa, and of the components of such biological diversity;
- The use of indigenous biological resources in a sustainable manner; and
- The fair and equitable sharing among stakeholders of benefits arising from bio-prospecting involving indigenous biological resources.

In terms of this Act, the developer has a responsibility to:

- Conserve endangered ecosystems and restriction of activities according to the categorisation of the area (not just by listed activity as specified in the EIA regulations);
- Promote the application of appropriate environmental management tools in order to ensure integrated environmental management of activities thereby ensuring that all development within the area is in line with ecological sustainable development and protection of biodiversity; and
- Limit further loss of biodiversity and conserve endangered ecosystems.

The South African National Biodiversity Institute (SANBI) was established in terms of the NEM:BA, its purpose being (inter alia) to report on the status of the country's biodiversity and the conservation status of all listed threatened or protected species and ecosystems.

The NEM:BA provides for a range of measures to protect ecosystems and for the protection of species that are threatened or in need of protection to ensure their survival in the wild, including a prohibition on carrying out a 'restricted activity' involving a specimen of a listed threatened or protected species without a permit issued in terms of Chapter 7 of the Act. According to Section 57 of the Act, 'Restricted activities involving listed threatened or protected species':

A Biodiversity Assessment (**Appendix C**) has been conducted to explore how the proposed development may impact on biodiversity as protected by the Act. Should the proposed development require offsets or permits, it will be determined and applied for separately prior to construction**.**

In addition, all relevant conservation departments (such as the SANBI, EKZN Wildlife) will be invited to provide comments with regards to the proposed development.

4.7 NATIONAL ENVIRONMENTAL MANAGEMENT: PROTECTED AREAS ACT, 2003 (ACT NO.57 OF 2003 AS AMENDED)

The overarching aim of the National Environmental Management: Protected Areas Act (NEMPAA) Act No. 57 of 2003, within the framework of NEMA, is to provide for:

- the declaration and management of protected areas;
- co-operative governance in the declaration and management of protected areas;
- effect a national system of protected areas in South Africa as part of a strategy to manage and conserve its biodiversity;
- a representative network of protected areas on state land, private land and communal land;
- promote sustainable utilisation of protected areas for the benefit of people, in a manner that would preserve the ecological character of such areas;
- promote participation of local communities in the management of protected areas, where appropriate; and
- the continued existence of South African National Parks.

The proposed project is not located in close proximity to any protected areas.

4.8 NATIONAL FORESTS ACT (NFA) (ACT NO. 84 OF 1998)

The National Forest Act (NFA) (Act No. 24 of 1998) was enacted to:

- Provide for the protection, management and utilisation of forests;
- The protection of certain plant and animal life;
- The regulation of trade in forest produce; and
- The control and management of a national hiking way system and National Botanic Gardens.

The NFA enforces the necessity for a license to be obtained prior to destroying any indigenous tree in a natural forest and, subject to certain exemptions, cutting, disturbing, damaging, destroying or removing any protected tree. The list of protected trees is currently contained in GN 908 of 21 November 2014. Licenses are issued by the Minister and are subject to periods and conditions as may be stipulated.

Protected trees

According to this act, the Minister may declare a tree, group of trees, woodland or a species of trees as protected. The prohibitions provide that 'no person may cut, damage, disturb, destroy or remove any protected tree, or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister'.

Forests

Prohibits the destruction of indigenous trees in any natural forest without a licence.

The NFA is relevant to the proposed development as the removal and/or disturbance and/or clearance of indigenous vegetation will be required and a license in terms of the NFA may be required for this to be done.

A Biodiversity Assessment (Appendix C) has been conducted to explore how the proposed development may impact on vegetation as protected by the Act. Should the proposed development require offsets or permits, it will be determined and applied for separately prior to construction**.**

In addition, all relevant conservation departments (such as the SANBI, EKZN Wildlife) will be invited to provide comments with regards to the proposed development.

4.9 NATIONAL VELD AND FOREST FIRE ACT (ACT NO. 101 OF 1998)

Provides requirements for veldfire prevention through firebreaks and required measures for firefighting. Chapter 4 of the Act places a duty on landowners to prepare and maintain firebreaks. Chapter 5 of the Act places a duty on all landowners to acquire equipment and have available personnel to fight fires.

4.10 CONSERVATION OF AGRICULTURAL RESOURCES ACT (CARA) (ACT NO. 43 OF 1983)

The Conservation of Agricultural Resources Act (CARA) (Act No. 43 of 1983) controls the utilisation of natural agricultural resources in South Africa. The Act promotes the conservation of soil, water sources and vegetation as well as the combating weeds and invader plants. The Act requires the protection of land against soil erosion and the prevention of water logging and salinization of soils by means of suitable soil conservation works to be constructed and maintained. The utilisation of marshes, water sponges and watercourses are also addressed.

The primary objective of the Act is to conserve natural agricultural resources by:

- maintaining the production potential of land;
- combating and preventing erosion and weakening or destruction of the water resources;
- protecting vegetation; and
- combating weeds and invaders plants.

In terms of this Act, no degradation of natural land is permitted. Rehabilitation after disturbance to agricultural land is also managed by this Act. The CARA is relevant to the proposed development as the construction of the substation may impact on agricultural resources and vegetation on the site. The Act prohibits the spreading of weeds and prescribes control measures that need to be complied

with in order to achieve this. As such, measures will need to be taken to protect agricultural resources and prevent weeds and exotic plants from invading the site as a result of the proposed development.

Declared Weeds and Invaders in South Africa are categorised according to one (1) of the following categories:

- Category 1 plants: are prohibited and must be controlled.
- Category 2 plants: (commercially used plants) may be grown in demarcated areas providing that there is a permit and that steps are taken to prevent their spread.
- Category 3 plants: (ornamentally used plants) may no longer be planted; existing plants may remain, as long as all reasonable steps are taken to prevent the spreading thereof, except within the flood line of watercourses and wetlands.

An Agricultural and Soils Site Verification (Appendix C) has been conducted to explore how the proposed development may impact on the agricultural production potential of the proposed site.

4.11 NATIONAL ROAD TRAFFIC ACT (NRTA) (ACT NO. 93 OF 1996, AS AMENDED)

The National Road Traffic Act (NRTA) (Act No. 93 of 1996, as amended) provides for all road traffic matters and is applied uniformly throughout South Africa. The Act enforces the necessity of registering and licensing motor vehicles. It also stipulates requirements regarding fitness of drivers and vehicles as well as making provision for the transportation of dangerous goods.

All the requirements stipulated in the NRTA will need to be complied with during the construction and operational phases of the proposed development.

4.12 CIVIL AVIATION ACT (CAA) (ACT NO. 13 OF 2009)

The Civil Aviation Act (CAA) (Act No. 13 of 2009) controls and regulates aviation within South Africa. It provides for the establishment of a South African Civil Aviation Authority (SACAA) and independent Aviation Safety Investigation Board in compliance with Annexure 13 of the Chicago Convention. It gives effect to various conventions related to aircraft offences, civil aviation safety and security, and provides for additional measures directed at more effective control of the safety and security of aircrafts, airports and matters connected thereto. The Act is directly relevant to the proposed development, as the establishment of electricity distribution infrastructure (such as a substation and powerlines) may impact on aviation and air traffic safety, if located directly within aircraft flight paths.

The Air Traffic and Navigation Services Company Limited (ATNS) and the SACAA will be consulted throughout the EIA process and the required approvals will be obtained, where necessary. It is not however anticipated that any approvals will be required.

4.13 THE INFRASTRUCTURE DEVELOPMENT ACT (ACT NO. 23 OF 2014)

The Infrastructure Development Act provides for the facilitation and co-ordination of public infrastructure development which is of significant economic or social importance to the Republic; to ensure that infrastructure development in the Republic is given priority in planning, approval and implementation; to ensure that the development goals of the State are promoted through

infrastructure development; to improve the management of such infrastructure during all life-cycle phases, including planning, approval, implementation and operations.

The Act commenced on 10 July 2014. The Presidential Infrastructure Coordinating Commission (PICC) and structures of the Commission are established in terms of this Act. Strategic Integrated Projects (SIPs), which are projects of significant economic or social importance to the country or a region in the country, or which facilitate regional economic integration on the African continent, are identified and implemented in terms of this Act. Section 15 states that when the Steering Committee of a SIP has identified the approvals, authorisations, licences, permissions and exemptions required to enable the implementation of the SIP, it shall inform, without any delay, the applicant to submit all applications simultaneously to allow for concurrent consideration by the persons authorised by the relevant laws to take the applicable decisions. A member of the Steering Committee must monitor the processing of the application and report to the Steering Committee any undue delays and regulatory concerns emerging for exploration or consideration of solutions thereto. Section 18 concerns environmental assessments specifically and states that whenever an environmental assessment is required in respect of a SIP, such assessment must be done in terms of the NEMA, with specific reference to Chapter 5. Time frames are stipulated in Schedule 2 and may not be exceeded without written approval. Schedule 2 refers to “project plans”, “applications” and “mitigation plans” that are not defined in the Act.

4.14 NATIONAL ENERGY ACT (ACT NO. 34 OF 2008)

South Africa has two (2) Acts that direct the planning and development of the country’s electricity sector, namely:

i. The National Energy Act of 2008 (Act No. 34 of 2008); and
ii. The Electricity Regulation Act (ERA) of 2006 (Act No. 4 of 2006).

The National Energy Act (Act No. 34 of 2008), promulgated in 2008, has, as one (1) of its key objectives, the promotion of diversity of supply of energy and its sources. The aim is to ensure that the South African economy is able to grow and develop, fast-tracking poverty alleviation, through the availability of a sustainable, diverse energy mix (Republic of South Africa, 2008).

4.15 PROTECTION OF PUBLIC INFORMATION ACT (ACT NO. 4 OF 2013)

The Protection of Public Information Act (Act No. 4 of 2013) (POPIA) recognises the Constitutional requirement that everyone has a right to privacy.

Ultimately the Act promotes “the protection of personal information processed by public and private bodies; to introduce certain conditions so as to establish minimum requirements for the processing of personal information; to provide for the establishment of an Information Regulator to exercise certain powers and to perform certain duties and functions in terms of this Act and the Promotion of Access to Information Act, 2000 (PAIA); to provide for the issuing of codes of conduct; to provide for the rights of persons regarding unsolicited electronic communications and automated decision making; to regulate the flow of personal information across the borders of the Republic; and to provide for matters connected therewith”.

Due to the requirements around the PPP, SIVEST will process, and capture information aligned to the POPIA and always obtain consent for I&APs information to be gathered, stored and distributed for the purpose of this project.

4.16 KWAZULU-NATAL PLANNING AND DEVELOPMENT ACT, 2008 (ACT 6 OF 2008) (SPLUMA)

The SPLUMA came into force on 1 July 2015 and replaces the KwaZulu-Natal Planning and Development Act, 2008. However, the two will run in parallel until each Local Municipality has set up the structures required by SPLUMA. In terms of the current KwaZulu-Natal Planning and Development Act, 2008, Eskom will need to submit a Planning and Development Application (PDA) to the Local Municipality. This application will need to meet all the requirements of legislation. Important aspects will include planning considerations, and compliance with the municipality's Integrated Development Plan and Spatial Development Framework. The exact requirements will depend on the timing of Eskom's application to the Municipalities and the status of the legislation and by-laws currently applicable at the time in the local municipality.

4.17 ADDITIONAL RELEVANT LEGISLATION

- Occupational Health and Safety Act (Act No. 85 of 1993) [OHSA];
- Environment Conservation Act (Act 73 of 1989) [ECA]
- Road Safety Act (Act No. 93 of 1996) [RSA];
- National Environmental Management: Air Quality Act (Act No. 39 of 2004) [NEM:AQA];
- National Environmental Management: Waste Act (Act No. 59 of 2008, as amended) [NEM;WA];
- Development Facilitation Act (Act No. 67 of 1995) [DFA];
- Promotion of Access to Information Act, (Act No. 2 of 2000); [PAIA]
- The Hazardous Substances Act (Act No. 15 of 1973) [HSA];
- Water Services Act (Act No. 108 of 1997) [WSA];
- Municipal Systems Act (Act No. 32 of 2000) [MSA];
- Subdivision of Agricultural Land Act, 70 of 1970, and
- Mineral and Petroleum Resource Development Act (Act No. 28 of 2002, as amended) [MPRDA].
- KwaZulu-Natal Nature Conservation Ordinance, 1974 (Act No. 15 of 1974)

5. NEED AND DESIRABILITY

GN 982 Appendix 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;

5.1 GENERAL PURPOSE AND REQUIREMENT FOR THE PROJECT

Various Distribution substations being fed from Normandie Main Transmission Substation are experiencing low voltages on the 132 kV busbars which are well below acceptable limits (0.95 p.u). These Distribution substations include: Candover, Makhathini, Nondabuya, Ndumo and Mkuze. With the current electrification load growth in the areas around the listed substations and Gezisa

Substation establishment, the busbar voltages will further drop below minimal acceptable limits until the system collapses. The Normandie Substation is not completely backfeedable. A loss of either the Normandie-Vergenoeg 132 kV powerline or the Normandie-Pongola 132 kV powerline will result in load being shed.

Currently the Impala-Nseleni 132 kV Line is loaded to beyond 90% of its capacity with Mtubatuba and Hluhluwe experiencing low HV Busbar voltages in the year 2019 and beyond due to an increase in both electrification and industrial load. The Impala Substation is not backfeedable. A loss of the Impala-Nseleni powerline will result in load being shed (approximately 44 000 customers).

With the establishment of Iphiva 400/132 kV Substation, the following benefits will be experienced:

- Increases in all SS HV Busbar Voltage Levels to above 1 p.u.
- Transformer Taps Reduce throughout the system (Fewer Lockouts).
- Accommodates Load Growth for both electrification and industrial loads.
- 100% Back-feeding possible during the loss of Normandie-Pongola, Normandie-Vergenoeg and Impala-Nseleni 132 kV Lines.

5.2 STRATEGIC AND STATUTORY CONTEXT FOR THE CONSIDERATION OF NEED AND DESIRABILITY

DEA (2017), Guideline on Need and Desirability, provides that when evaluating project specific applications, the strategic context of such applications and the broader societal needs and the public interest should be considered. The contents of Municipal IDPs, Strategic Development Frameworks (SDF), EMFs and other relevant plans, frameworks and strategies must be taken into account. “Whether a proposed activity will be in line with or deviate from the plan, framework or strategy per se is not the issue, but rather the ecological, social and economic impacts that will result because of the alignment or deviation”. Where an application deviates from a plan, framework or strategy the EIA must show why the deviation might be justifiable.

Considering the merits of a specific application in terms of the need and desirability consideration, it must be decided which alternative represents “the most practicable environmental option”, which in terms of the definition in NEMA and the purpose of the EIA Regulations are “that option that provides the most benefit and causes the least damage to the environment as a whole, at a cost acceptable to society, in the long-term as well as the short-term”. This is the ultimate goal of the EIA process and will only be fully addressed after the specialist studies have been undertaken and Environmental Impact Report and Environmental Management Programme (EMPr) have been compiled.

The DEA 2017 Guideline on Need and Desirability says that during Scoping the questions presented in the guideline document should be used to identify issues to be addressed in the EIA process and alternatives that should be considered.

Table 9: Questions from DEA 2017 Need and Desirability Guideline Document

	Question in guideline document	**Response**
1.	How will this development (and its separate elements/aspects) impact on the **ecological integrity** of the area?	This is addressed in the Fauna and Flora and Wetlands Specialists studies (Appendix D)

	Question in guideline document	Response
2.1	What is the socio-economic context of the area, based on, amongst other considerations, the following considerations: 2.1.1. The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks of policies applicable to the area, 2.1.2. Spatial priorities and desired spatial patterns (e.g. need for integrated of segregated communities, need to upgrade informal settlements, need for densification, etc.), 2.1.3. Spatial characteristics (e.g. existing land uses, planned land uses, cultural landscapes, etc.), and 2.1.4. Municipal Economic Development Strategy ("LED Strategy").	This has been addressed in Section 8.3
2.2	Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socioeconomic objectives of the area? 2.2.1. Will the development complement the local socioeconomic initiatives (such as local economic development (LED) initiatives), or skills development programs?	Yes
2.3	How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?	This has been addressed in Section 5.1
2.4	Will the development result in equitable (intra- and intergenerational) impact distribution, in the short- and long-term? Will the impact be socially and economically sustainable in the short- and long-term?	Yes
2.5	In terms of location, describe how the placement of the proposed development will: 2.5.1. result in the creation of residential and employment opportunities in close proximity to or integrated with each other, 2.5.2. reduce the need for transport of people and goods, 2.5.3. result in access to public transport or enable nonmotorised and pedestrian transport (e.g. will the development result in densification and the achievement of thresholds in terms public transport), 2.5.4. compliment other uses in the area, 2.5.5. be in line with the planning for the area, 2.5.6. for urban related development, make use of underutilised land available with the urban edge, 2.5.7. optimise the use of existing resources and infrastructure, 2.5.8. opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g. not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement), 2.5.9. discourage "urban sprawl" and contribute to compaction/densification, 2.5.10. contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs, 2.5.11. encourage environmentally sustainable land development practices and processes, 2.5.12. take into account special locational factors that might	No new residential areas will be established, by Eskom, as a result of the proposed new substation. Limited job opportunities will be created during the construction phase and very limited during the operational phase. This was addressed in the Social and Economic Specialist studies undertaken during the initial EIA of the Iphiva substation. There will be no impact on public transport in the vicinity of the proposed new substation. The project will benefit the recipients of electricity in the entire SADCA region.

	Question in guideline document	Response
	favour the specific location (e.g. the location of a strategic mineral resource, access to the port, access to rail, etc.), 2.5.13. the investment in the settlement or area in question will generate the highest socio-economic returns (i.e. an area with high economic potential), 2.5.14. impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural historic characteristics and sensitivities of the area, and 2.5.15. in terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?	
2.6	How were a risk-averse and cautious approach applied in terms of socio-economic impacts?	The information used in the socio-economic reports are based on the official data received from the municipalities. Given that municipalities are subject to public consultation processes, the assumption is made that the data is correct. The project area includes vulnerable communities, and appropriate methods were used to ensure that these communities are included in the process. This process commenced in the scoping phase where the PP team ensured that communities were not excluded from the study and were consulted in a language that they are comfortable with. Given the nature of the project, no critical social resources should be affected, and once commissioned, there is a relatively low risk for social disruption.
2.7	How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following: 2.7.1. Negative impacts: e.g. **health** (e.g. HIV-AIDS), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts? 2.7.2. Positive impacts. What measures were taken to **enhance positive impacts**?	This has been addressed in Section 8.3
2.8	Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and **how the development's socio-economic impacts will result in ecological impacts** (e.g. over utilisation of natural resources, etc.)?	This has been addressed in Section 8.3

	Question in guideline document	Response
2.9	What **measures** were taken to pursue the selection of the "**best practicable environmental option**" in terms of socio-economic considerations?	This has been addressed in Section 5
2.10	What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?	The beneficiary of the project is the general population of the region, as described in Section 8.3.
2.11	What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?	This project aims to provide services in the form of reliable electricity supply to the population of the region.
2.12	What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?	Environmental health and safety standards are built into all of Eskom's specifications and standards.
2.13	What measures were taken to: 2.13.1. ensure the participation of all interested and affected parties, 2.13.2. provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, 2.13.3. ensure participation by vulnerable and disadvantaged persons, 2.13.4. promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means, 2.13.5. ensure openness and transparency, and access to information in terms of the process, 2.13.6. ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge, and 2.13.7. ensure that the vital role of women and youth in environmental management and development were recognised and their full participation therein were be promoted?	This has been addressed in Section 7
2.14	Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g. a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)?	This project aims to provide services in the form of reliable electricity supply to the population of the region.
2.15	What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to	Standard Eskom procedures address these issues.

	Question in guideline document	Response
	ensure that the right of workers to refuse such work will be respected and protected?	
2.16	Describe how the development will impact on job creation.	This has been addressed in Section 8.3
2.17	What measures were taken to ensure: 2.17.1. that there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment, and 2.17.2. that actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures.	No specific intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment took place as a result of this specific Project. No conflicts of interests have arisen as a result of this project.
2.18	What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?	Potential measures as recommended by the specialist towards protecting the environmental resources are included in the EMPr.
2.19	Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?	Yes, the EAP believes that the mitigation measures proposed are realistic. This is a long-term project (50 years plus). When/if the project is decommissioned at a later stage, then the land that has been affected will have to be rehabilitated to acceptable levels. That will be subject to a separate authorisation process.
2.20	What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment?	The applicant is responsible for implementing the EMPr.
2.21	Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?	Alternatives are discussed in Section 6
2.22	Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area?	This has been addressed in Section 8.3

5.3 NATIONAL DEVELOPMENT PLAN

On 11 November 2011 the National Planning Commission (NPC) released the National Development Plan: Vision for 2030 (NPC, 2012) for South Africa and it was adopted as government policy in August 2012. The National Development Plan (NDP) was undertaken to vision what South Africa should look like in 2030 and what action steps should be taken to achieve this (RSA, 2013). The aim of the NDP is to eliminate poverty and reduce inequality by 2030.

5.4 SUSTAINABLE DEVELOPMENT GOALS

All 189 Members States of the United Nations (UN), including South Africa, adopted the UN Millennium Declaration in September 2000 (UN, 2000). The commitments made by the Millennium Declaration are known as the Millennium Development Goals (MDGs), and 2015 was targeted as the year to achieve these goals. The UN Open Working Group of the General Assembly identified seventeen sustainable development goals, built on the foundation of the MDGs as the next global development target (UN, 2014).

The sustainable development goals include aspects such as ending poverty, addressing food security, promoting health, wellbeing and education, gender equality, water and sanitation, economic growth and employment creation, sustainable infrastructure, reducing inequality, creating sustainable cities and human settlements, and addressing challenges in the physical environment such as climate change and environmental resources (UN, 2014). These aspects are included in the NDP, and it can therefore be assumed that South Africa's development path is aligned with the international development agenda.

5.5 STRATEGIC ENVIRONMENTAL ASSESSMENT FOR ELECTRICITY GRID INFRASTRUCTURE

In order to facilitate the efficient roll out of the SIPs lead by the PICC and detailed in the National Infrastructure Plan, the then-Department of Environmental Affairs (DEA), mandated by Ministers and Members of the Executive Council (MinMec), commissioned the Council for Scientific and Industrial Research (CSIR) in January 2014 to undertake a Strategic Environmental Assessment (SEA) linked to SIP 10: Electricity Transmission and Distribution for all. The CSIR has partnered with Eskom and the SANBI to deliver on project outputs (https://egi.csir.co.za/ accessed on 6 January 2017). The substation does not fall within any of the identified suitable routing corridors that will enable the efficient and effective expansion of key strategic transmission infrastructure designed to satisfy national transmission requirements up to the 2040 planning horizon, in this SEA (**Figure 5**). This is, however, not a problem as the SEA did not prioritise the load centre served by this project on the national level. The need for the project, on a regional level, is still justified.

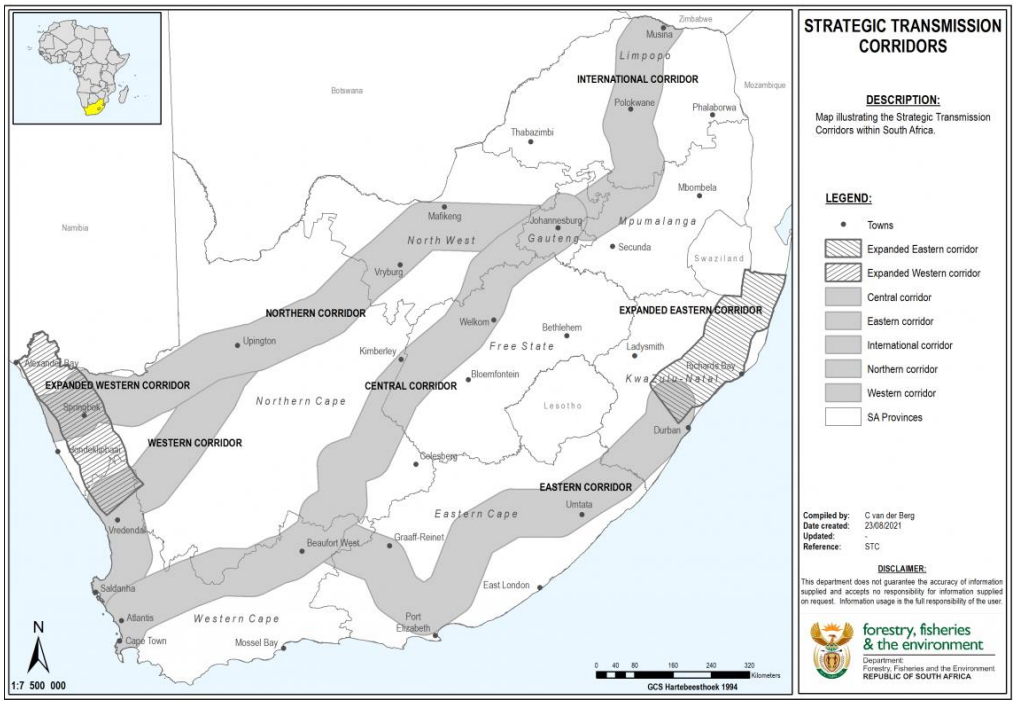

Figure 5: SEA suitable electricity routing corridors

Source: (https://egis.environment.gov.za/redz)

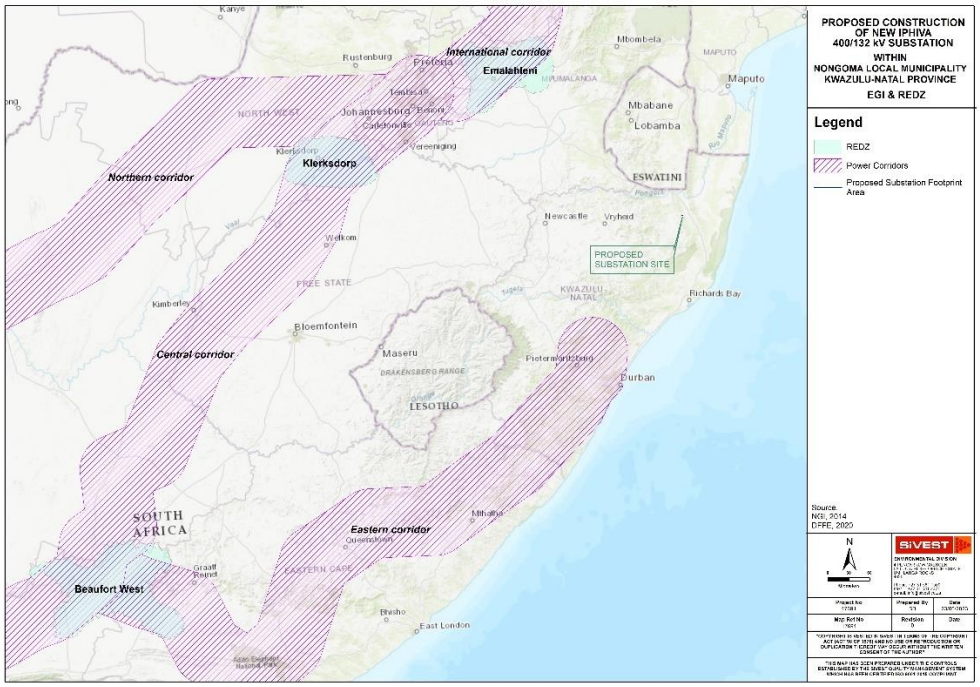

Figure 6: Iphiva development in relation to the EGIs

5.6 PROVINCIAL GROWTH AND DEVELOPMENT STRATEGIES

Provinces play an important role in contextualising Acts and other tools of governance and grounding them within the realities of each province. The provincial governments must guide the local government in the implementation and development of IDPs and other programmes for sustainable development. Provincial Growth and Development Strategies (PGDS) are a critical tool to guide and coordinate the allocation of national, provincial and local resources and private sector investment to achieve sustainable development outcomes. They are not a provincial government plan, but a development framework for the province as a whole (Department Provincial and Local Government [DPLG], 2005).

PGDS are not a legislative requirement but play an important role in ensuring effectiveness and coordinating delivery of the overall objectives of South Africa as a developmental state. PGDS are based on a long-term view of the provinces' development route. Their primary purpose is to provide a collaborative framework to drive implementation within a province (DPLG, 2005). The KwaZulu Natal Provincial Spatial Development Strategy (KZN PGDS, 2011) is relevant to this application.

Linking to this, the KZN PGDS has identified five job drivers:

- Infrastructure;
- Main economic sectors;
- Seizing the potential of new economies;
- Investing in social capital and public services; and
- Spatial development.

The KZN PGDS strategy consists of seven long-term goals and 30 objectives (KZN PGDS, 2011), including the development of energy production capacity as part of the strategic infrastructure development identified.

5.7 INTEGRATED DEVELOPMENT PLANS

The South African government operates on three spheres, namely local (municipal), provincial and national. IDPs are compulsory through the Municipal Systems Act 32 of 2000 on municipal level. Integrated Development Planning is a process by which municipalities prepare 5-year strategic development plans. The IDP is the written plan that results from the integrated development planning process. It is the principle strategic planning instrument that guides and informs all planning, management, investment, development and implementation decisions and actions in the local area and supersedes all other plans that guide local development (Coetzee, 2002).

The White Paper on Local Government (RSA, 1998) has contextualised the IDP as a tool for developmental local government with the intention of enabling municipalities to:

- Help align scarce resources behind agreed policy objectives and programmes;
- Make sure that actions are prioritised around urgent needs;
- Ensure the necessary integration with other spheres of government, serving as a tool for communication and interaction with them, and
- Serve as a basis for engagement between local government and communities/residents.

The following municipalities' IDP documents need to be considered.

5.7.1 Zululand District Municipality Integrated Development Plan, 2020 – 2021

The Nongoma Local Municipality, one of the five local municipalities within the Zululand District Municipality, has access to electricity, which is supplied by Eskom, the sole service provider of electrical energy to the municipality. The majority of the nodal areas have access to electricity including the town of Nongoma and Esiphambanweni. The general concern is that the network is strained in some parts of the Municipality including areas around Ndimande and KwaPhenyane. These areas were also recorded to be having the highest backlogs in 2011 census according to the IDP.

In terms of access to electricity, the municipality is experiencing challenges; a high influx of people, particularly in deep rural areas. This has resulted in a burgeoning backlog of electricity infills, currently the backlog is at approximately 34 341 people, according to StatsSA. Therefore, increasing electricity supply is of high importance.

6. ALTERNATIVES

GN 982 Appendix 2:

(h) a full description of the process followed to reach the proposed preferred activity, site and location within the site, including -
- (i) details of all the alternatives considered
- (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
  - (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;
- (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;
- (viii) possible mitigation measures that could be applied and level of residual risk
- (ix) the outcome of the site selection matrix;
- (x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and
- (xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;

6.1 DETAILS OF ALTERNATIVES

As per Chapter 1 of the EIA regulations (2014), as amended, feasible and reasonable alternatives are required to be considered during the EIA process. Alternatives are defined as "*different means of meeting the general purpose and requirements of the activity*". These alternatives may include:

(a) The property on which or location where it is proposed to undertake the activity;
(b) The type of activity to be undertaken;

(c) The design or layout of the activity;
(d) The technology to be used in the activity;
(e) The operational aspects of the activity; and
(f) The option of not implementing the activity.

The EIA Regulations, 2010 guideline document stipulates that the environmental investigation needs to consider feasible alternatives for the proposed development. The developer should be encouraged to consider alternatives that would meet the objective of the original proposal and which could have an acceptable impact on the environment. The role of alternatives in the EIA process is therefore to find the most effective way of meeting the need and purpose of the proposal, either through enhancing the environmental benefits of the proposed activity, and/or through reducing or avoiding potentially significant negative impacts.

6.1.1 No – Go Option

The major load centres in northern KZN, specifically Pongola and the Makhathini Flats, currently experience high voltage drops in the 132 kV network that services them, and the voltages are approaching unacceptable levels as the demand increases. Contingencies on the main 132 kV supplies also lead to thermal overloading of the remaining network. The Iphiva 400/132 kV Substation will also de-load the main sub-transmission network and improve the voltage regulation in the area.

If the project does not go ahead, then the existing electricity supply to the area as well as future economic development will be limited and compromised. Eskom will then not be fulfilling its mandate, making it an unacceptable scenario.

The EAP therefore recommends that the no-go alternative be rejected and no assessment of the no-go alternative be undertaken in the Impact Assessment Phase of the project.

6.1.2 Location / Site Alternatives

During the previous EIA process, thirteen (13) sites were initially identified. This was narrowed down to six (6) sites which were considered in the Scoping Phase of the project and the two most preferred sites, Iphiva 3 and Iphiva 6 were further assessed in the specialist studies and assessment phase.

The following technical requirements were used to identify a suitable site:

- Close to the load centre and exiting 132 kV powerline network;
- A large flat area (+- 36 ha);
- Good existing access roads;
- Low density of houses and other structures; and
- Consideration of impacts on surrounding land use.

Iphiva 6 was selected based on the above and was authorised in 2018. The authorised site is on a mountainous terrace and subsequent assessments found that unacceptable quantities of cut and fill will be required to prepare the site. Accessibility to this site is also difficult. Due to cost involved in developing the authorised site, the Eskom technical team proposed moving the site 80m to the west of the authorised site.

Due to the extensive site selection process undertaken by Eskom during the above-mentioned study, no assessment of alternative sites will be undertaken in the Impact Assessment Phase of the project.

6.1.3 Design or layout of the activity

A preliminary layout has been provided by the Eskom engineers (**Figure 7**). Constraints of sensitive flora, surface water features, sensitive heritage areas, and associated buffer areas, based on the findings of the specialists, will be used to finalise the layout design. Input from all specialists, stakeholders, and the competent authority will be considered in the final layout design.

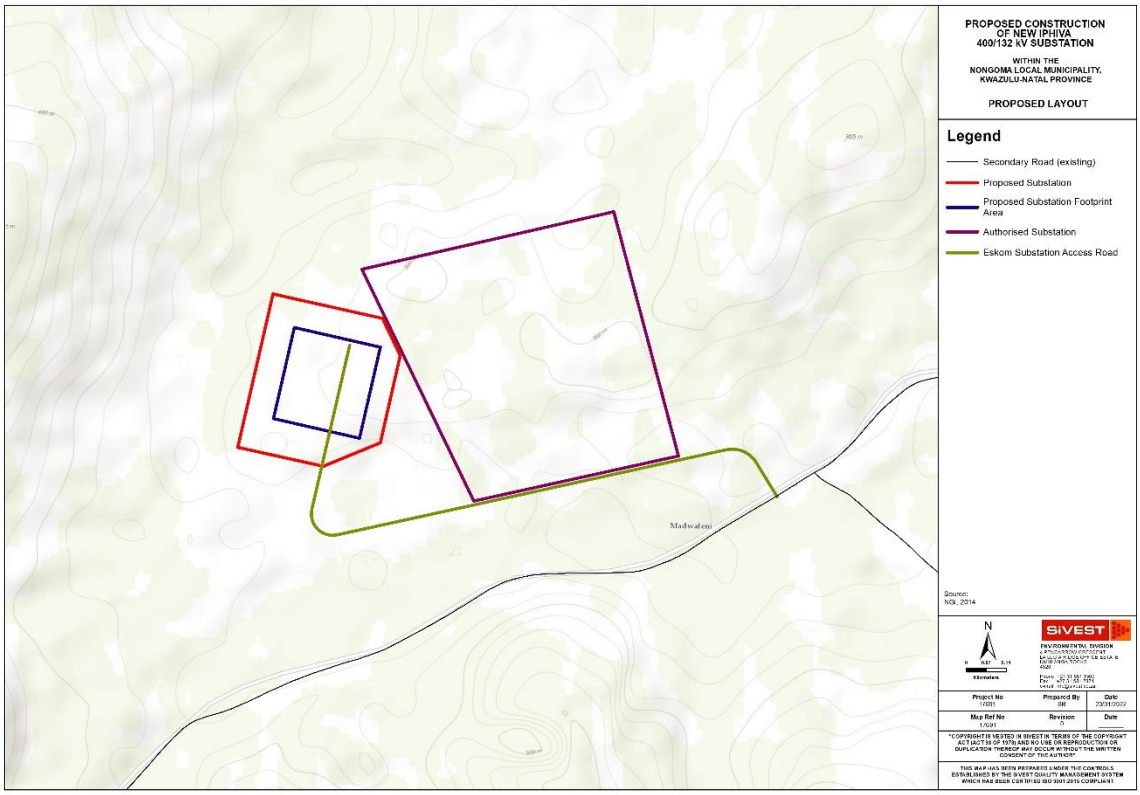

Figure 7: Preliminary layout

6.2 CONCLUDING STATEMENT

Due to the extensive scoping and assessment process followed by NAKO ILISO in 2017 in the selection process of the Iphiva 400/132 kV Substation site, no further alternative sites have been considered. The proposed layout of the development footprint will be assessed.

7. PUBLIC PARTICIPATION PROCESS

GN 982 Appendix 2:

(ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;

The public participation process was initiated and will continue until the Competent Authority gives the decision on the application for environmental authorization. Public Participation is an integral requirement of the National Environmental Management Act (Act 107 of 1998) and the Environment Conservation Act (Act 73 of 1989). For this project, the process to be followed will take into account all aspects of public participation as stipulated in the legislation.

The consultation process endeavoured to involve as many I&APs as possible. The comments that were received and issues that were raised during the consultation process were collated into the Final Scoping Report and were used to assist the environmental consultant to determine the aspects of the project that would require detailed investigation during the EIAR Phase of the study process. Details of the identified I&APs were entered into the database of stakeholders and they will receive all project related information during the entire process.

7.1 PUBLIC PARTICIPATION TASK LEADER

The PPP Task Leader, Mr. Moses Mahlangu, has twenty years of experience stakeholder engagement and public participation processes, in support of environmental management and development processes. He has extensive experience in running complex yet successful PPP. Similar projects include:

- Eskom Transmission Medupi Integration Project
- Eskom Distribution - Zamokuhle 132kV Project
- Eskom Distribution – Groblersdal - Kwaggafontein 132kV Project

Moses is fluent in the Nguni languages (IsiZulu; IsiNdebele; IsiSwati; isiXhosa) and competent in Sesotho languages (Setswana; sePedi; South-Sotho). He has facilitated several projects in rural areas and townships in African languages.

7.2 CONSULTATION WITH THE COMPETENT AUTHORITY

SiVEST has consulted with DFFE as follows:

- Pre-application meeting request was submitted to DFFE on the 15th of March 2022. The intention of this meeting was to discuss the option of applying for a Part 2 amendment to the Environmental Authorisation obtained following the initial EIA application process of 2018 (DFFE Reference Number: 14/12/16/3/3/2/1037). Following a telephonic consultation with Mr. Jay-Jay Mpelane and a confirmation in writing, DFFE advised that a new application process was to be followed as the new site had not been assessed previously.
- Submission of application form to obtain EIA reference number (submitted in January 2023).
- The Draft Scoping report was made available for comment to I&APs, key stakeholders and the Competent Authority for a 30-day comment period.
- The Final Scoping Report was submitted to the DFFE for decision regarding the scoping phase of the project (submitted in March 2023).
- The Final Scoping Report was accepted by the DFFE on 12th April 2023 and the I&APs were notified of the decision.

The following items will still be undertaken:

- The Draft EIA report will be made available for comment to I&APs, key stakeholders and the authorizing authority (From 23rd June 2023 to 24th July 2023).
- After the Draft EIA report has been made available for comment within the public domain, comments will be incorporated into the Comments and Response Report and Final EIA Report for submission to DFFE.
- Notify I&APs in writing of the decision of the application.
- Apart from the above-mentioned occasions, further consultation with authorities will occur whenever necessary.

7.3 INCEPTION TO THE PUBLIC PARTICIPATION ACTIVITIES

Since the initial site was authorised in the previous EIA process, the Public Participation Team took responsibility to go through the PP report to get to understand all the stakeholders that were potentially affected by the project and those that might be interested in the project. This formed the starting point for compiling a database of I&APs. At this stage the database is composed of categories of stakeholders as follows:

- Directly affected landowner/property owners
  - The Ingonyama Trust Board
  - Mandlakazi Traditional Council (Inkosi EB Zulu)
- Ezemvelo KZN Wildlife (They are responsible for biodiversity conservation and associated activities in the protected areas within KwaZulu-Natal)
- KwaZulu-Natal Amafa and Research Institute (is the provincial heritage resources authority for KwaZulu-Natal).
- National Government Departments
  - Department of Forestry, Fisheries and Environment – the Competent Authority
  - Department of Water and Sanitation – is the custodian of South Africa's water resources, commenting on water related issues such as wetlands, streams and rivers that might be affected by the project
  - Department of Rural Development and Land Reform
  - All other non-commenting departments who might have an interest in the project e.g. roads and transport
- Different Provincial Departments
- District and Local Municipality (Local Governments) – key departments like environment; planning and infrastructure have been identified within each municipality
  - Zululand District Municipality
  - Nongoma Local Municipality
- Different Non-Governmental Organizations have been identified and included in the database

However, to give the general public the opportunity to participate in the consultation process, the project was announced to the public by advertising in the local newspapers in the study area. Site notices were also placed at identified key points.

The PPP undertaken to date is as outlined in **Table 11** below and this process will be ongoing up until the Final EIAR is submitted to the DFFE and an EA is issued.

7.4 ISSUES RAISED DURING THE PREVIOUS STUDY

The key stakeholders that commented extensively on the substation during the previous consultation process are Ingonyama Trust; Amafa a-KwaZulu-Natali, Mandlakazi Traditional Council and Mbulungwane Community Trust.

Issues and concerns raised by these structures are captured in the *NAKO ILISO (Terry Calmeyer): 24 July 2018 'EIA for Eskom's Northern KZN Strengthening Project; Comments and Response Report'* and are acknowledged for recognition in this study for the new substation site. Generally, issues and concerns that are raised relating to substation construction are as indicated below. These are included here to act as catalyst for further identification of issues through the public involvement process.

Table 10: Issues raised

Issue / Concern	Remark	General Response
Economic	Job creation & Local opportunities	These kinds of projects involve high expertise that requires specialisation; it will create few jobs like clearing of bushes.
Safety & well-being	Veld Fire. Health and safety, Electromagnetic field,	Strategies and programmes for maintaining servitudes exist within Eskom. There is no conclusive evidence on the impact of EMF from the substation and power lines on living organism
Land Issues & Compensation	Compensation & property value reduction	Market related value is paid based on the recommendation of an independent property valuer.
Aesthetics	Visual impacts, Loss of sense of place	Relevant specialist will undertake impact assessment study and in turn provide recommendations for the mitigation of likely impacts where possible.
Natural Environment & Heritage	Impact on fauna, flora, birds, historical & archaeological sites	Relevant specialists form part of the study team and will give advice on mitigation measures.
Social	Relocation of people & migration of construction workers	Environmental Control Officer (ECO) will liaise with communities to ensure harmonious interaction between local communities & construction workers. Relocation is done only if the substation site cannot be shifted.

Table 11: PPP undertaken to date

Date	Activity	Participants/Target	Products
Initiated in April 2022 and is ongoing	Identified potentially Affected and/or Interested Parties, Database establishment and maintenance	Consultants and identified leaders/officials as follows: ○ Ms Thembeka Ndlovu ○ Inkosi EB Zulu • Dinesree Thambu • Sphelile Masuku (for Dr Dlamuka) • Government departments responsible officials	Database of stakeholders: **Appendix B** ○ Ingonyama Trust Board ○ Mandlakazi Traditional Council leader, Inkosi EB Zulu contacted to confirm the preferred method of consultation • Ezemvelo KZN Wildlife contacted to agree on who to contact within the organization and was furnished with the study area map • Amafa Institute advised on the line of communication, • Contact details of officials and the general public obtained and included in the database
April 2022	Generate Information Dissemination Documents	PP Team, Project Leader and Eskom manager	Background Information Document (BID); Reply Sheet; Advertisement; Site Notice – **Appendix B**
End April 2022 and is on-going	Announce the project to the public	PP Team and the public	• Advertisements were placed in the local newspapers (Isolezwe and Ilanga) – **Appendix B** • Site notices placed at strategic points in the study area – **Appendix B** • BIDs with Reply Sheets distributed at key points in the study area – **Appendix B** • BIDs with Reply Sheets sent to all stakeholders captured in the database, that is, government officials, commenting authorities and organisations and NGOs – **Appendix B**
23 January 2023	Circulated a Letter announcing the availability of the DSR		• A letter informing all stakeholders on the

Date	Activity	Participants/Target	Products
			database about the availability of the DSR • The letter was accompanied by the executive summary of the DSR and a locality map – **Appendix B**
23 January 2023	Placed hard copies of the DSR at Mandlakazi TC (inkosi EB Zulu) offices	Receptionist at the Mandlakazi TC	• Hard copies of the DSR placed at the office of the Mandlakazi TC and 20 copies of the executive summary of the report in English and isiZulu were given to the receptionist to distribute to the council members
23 January 2023	Delivered the hard copy of the DSR to Nongoma LM	Receptionist at the office of MM at Nongoma LM	• The report was delivered at the office of MM
26 February 2023	Announced the availability of the DSR for public review	All registered stakeholders	• Placed Advertisement in the regional newspaper, Ilanga LaseNatali in IsiZulu and English – **Appendix B**
06 February 2023	Invited stakeholders to the virtual meeting	All registered stakeholders	• All stakeholders on the database
09 February 2023	ONLINE stakeholders meeting	PP Team/Eskom	• Online meeting held but there was no attendance.
22 February 2023	Meeting with Mandlakazi TC	PP Team/Eskom/Mandlakazi TC members	• Minutes of the meeting recorded – **Appendix B**
27 February 2023	Sent out a “Reminder to Comment on the Draft Scoping Report”	PP Team and all registered stakeholders	• An email circulated to all registered stakeholders Appendix B

7.5 THE WAY FORWARD

The below was carried out in the draft scoping phase:

- The Draft Scoping Report was made available for public review and comment.
- The public were notified via emails about the availability of the DSR and where it could be accessed. Emails also carried the Executive Summary of the Draft Scoping Report.
- A focus group meeting was held with the Mandlakazi Traditional Council to discuss the findings of the Scoping Report.
- Minutes of meeting held were circulated to attendees before inclusion in the Final Scoping Report.
- A virtual meeting was initiated with key stakeholders; however, no one attended the meeting.
- Final Scoping Report was submitted and accepted by the Competent Authority.
- The Interested and affected parties were notified of the decision.

The following were undertaken during the EIA Phase (as per the accepted Final Scoping and Plan of Study):

- The I&AP database was updated as and when necessary, during the execution of the EIA.
- A 30-day period will be provided to IAPs to review the Draft EIA Report. Copies of the Draft EIA Report will be provided to the regulatory and commenting authorities as well. The Draft EIA Report will also be available for download on a link to be provided.
- All parties on the IA&P database were notified via email, sms or fax of the opportunity to review the Draft EIA Report, the review period and the process for submitting comments on the report.
- All comments received from I&APs and the responses thereto will be included in the final EIA Report, which will be submitted to DFFE.
- A Comments and Responses Report will be updated and included in the EIA Report, which will record the date that issues were raised, a summary of each issue, and the response of the team to address the issue. The Final EIA report with all comments included will be submitted to DFFE for review and approval.
- All I&APs will be notified via email, sms or fax after having received written notice from DFFE on the final decision on the application. These notifications will include the process required to lodge Availability of the EIA report for review:
- Report will be made available on SiVEST's website for download.
- Electronic copies can be made available to parties via a secure digital link that will be emailed upon request for the documentation.
- The Draft EIA Report will be located and available for review at the following locations:
    - Nongoma Public Library, Lot 103 Main Street, Nongoma, Nongoma, KwaZulu Natal, South Africa

8. ENVIRONMENTAL ATTRIBUTES

GN 982 Appendix 2:

(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;

8.1 DESCRIPTION OF THE PHYSICAL ENVIRONMENT

8.1.1 Geographical

The proposed project consists of the new Iphiva 400/132 kV Substation near the town of Mkuze in Nongoma Local Municipality, in the Zululand District Municipality, KZN, which will be integrated into the 400 kV network by one 400 kV lines, namely the approximately 120 km Normandie-Iphiva, and 65 km of 132 kV distribution powerlines that will link into the Iphiva 400/132 kV Substation. The regional context of the proposed application site is shown in **Figure 1** above.

8.1.2 Land Use

The majority of the proposed site falls within the woodland land cover classification. The surrounding area's land use consist of:

- Dispersed rural settlement - informal housing settlements (villages) and single isolated homesteads are scattered throughout the study area, coinciding with subsistence agriculture.
- Conservation / game farming – there are large areas in the study area with formal status under NEM:PAA.
- Commercial farming - large sugarcane plantations occur around the R66 towards Nongoma, where the R66 crosses the Mkhuze River. Croplands coincide with the more evenly sloped areas.
- Forestry - forestry areas occur in the high-lying areas
- Existing infrastructure – The presence of infrastructure such as roads, rail and powerlines affect the visual sensitivity of the landscape.

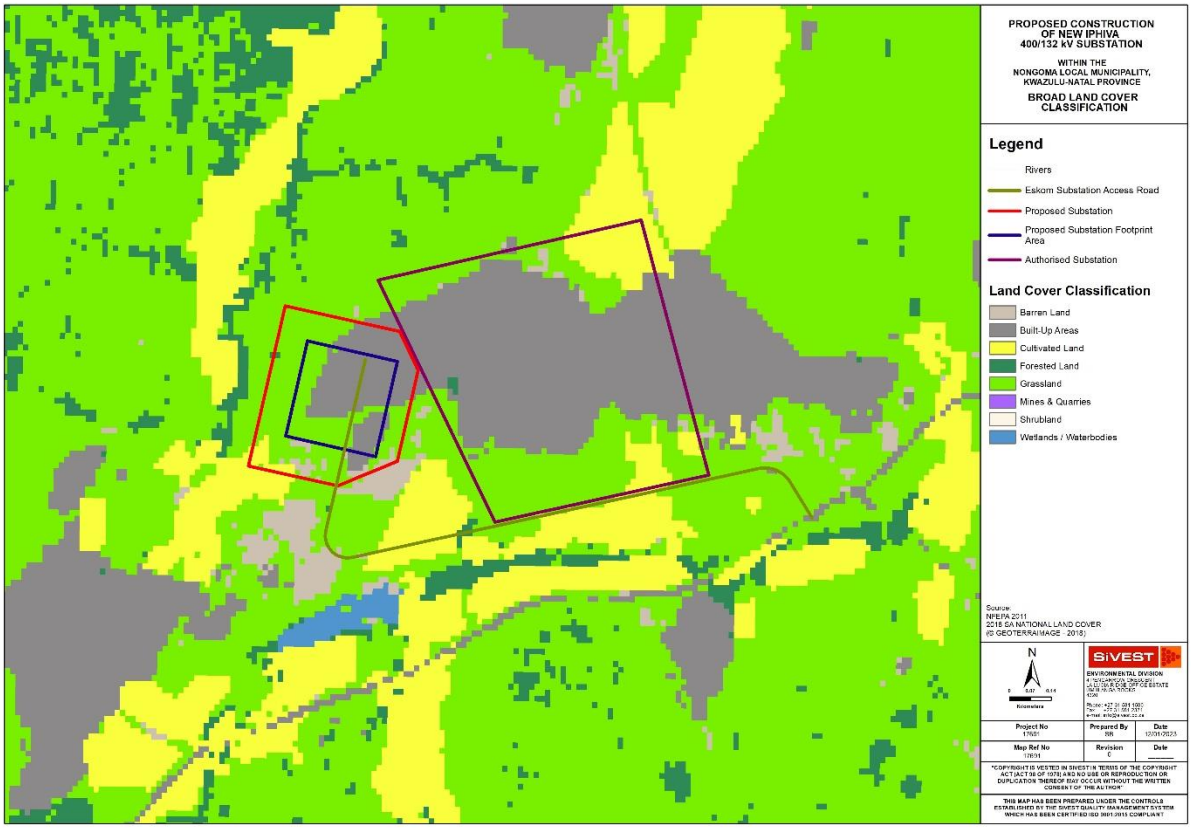

Figure 8: Land Cover Classification

8.1.3 Climate

The area has warm to hot summers, high evaporation and dry warm winters and a mean annual rainfall between 495- and 1 560-mm. Average rainfall is higher in the west and decreases gradually to the east.

8.1.4 Topography

The dominant landscape features are valley slopes to undulating hills and flat plains with a network of trailing rivers and smaller streams. The northern and central parts of the study area are more mountainous and have extreme topographical features. Two extreme areas where topographical features are observed is in the north along the Pongola River and east, close to the N2.

Mean elevation ranges from 0 m above mean sea level (mamsl) to 1 560 mamsl above sea level. The typical height increases as one moves further away from the coast. Eastern areas ranges from 0 – 910 mamsl, while areas in the west ranges from 655 – 1 560 mamsl.

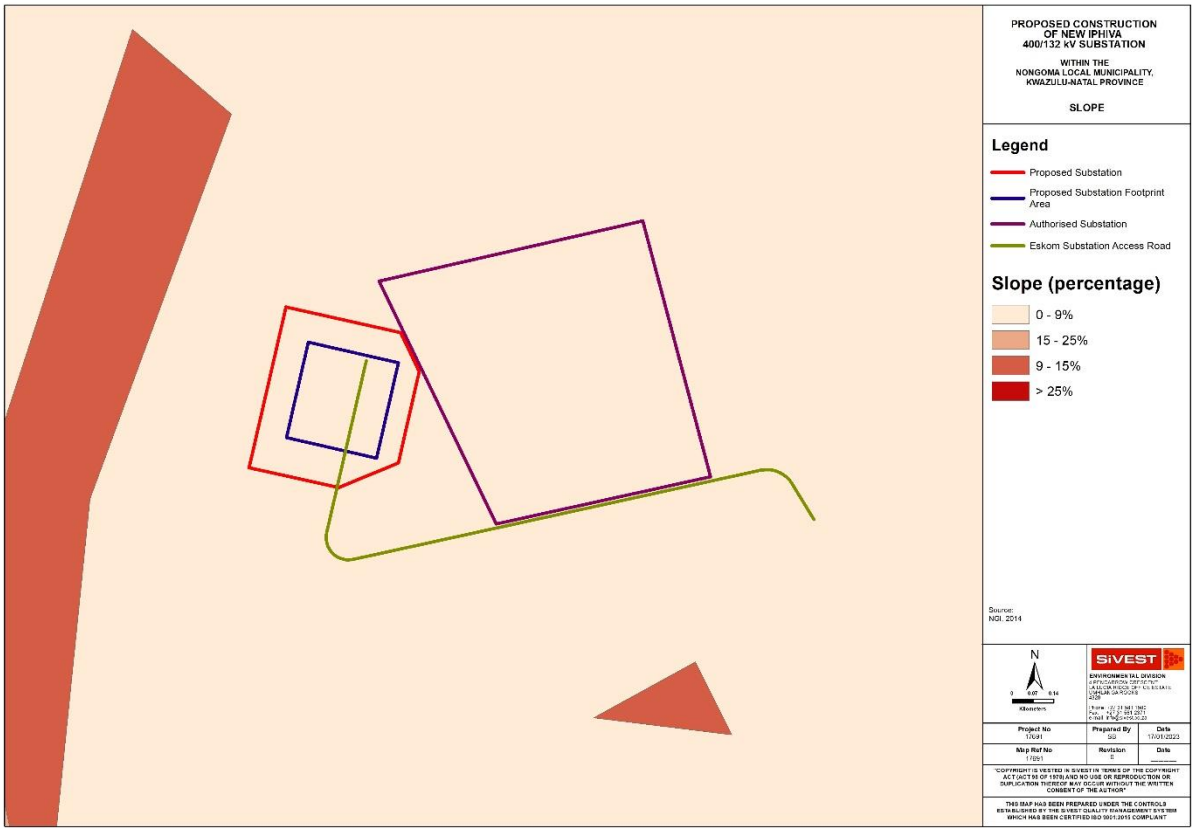

Figure 9: Slopes

8.1.5 Geology and Soils

This region of KZN is underlain by lithostratigraphic units associated with the Karoo Supergroup (Main Karoo Basin), ranging in age from Late Carboniferous to Middle Jurassic. The Karoo Supergroup is famously known for its terrestrial vertebrate fossils, distinctive plant assemblages, thick glacial deposits and extensive dolerite dykes and sills.

The parent material in the eastern parts of the site is arenite. The western part of the site has mudstone and arenite as parent material, which indicates that developing soils may be erosion susceptible.

The site is situated on soil with vertic, melanic or red structured diagnostic horizons. This means that the soil has swelling and shrinking and sticky properties and will have special needs for foundations and planning during construction. These kinds of soils are not high potential agricultural soils.

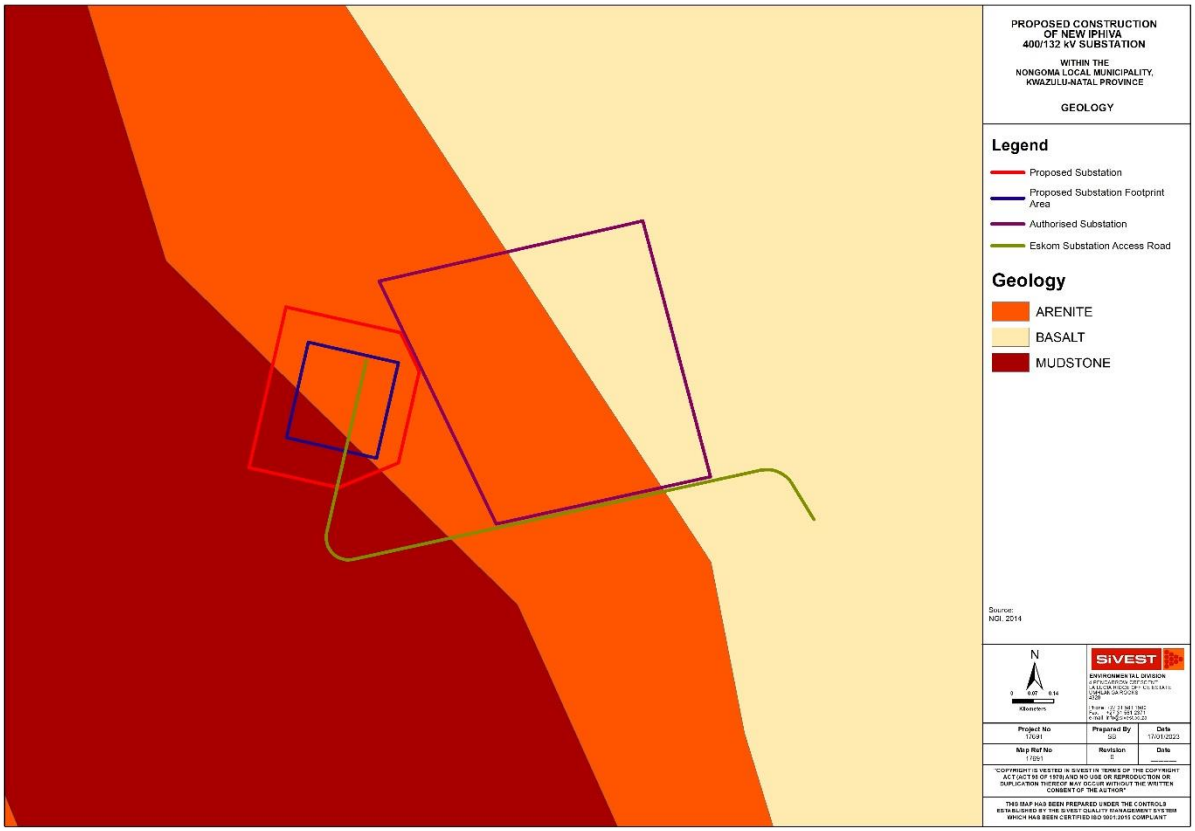

Figure 10: Geology

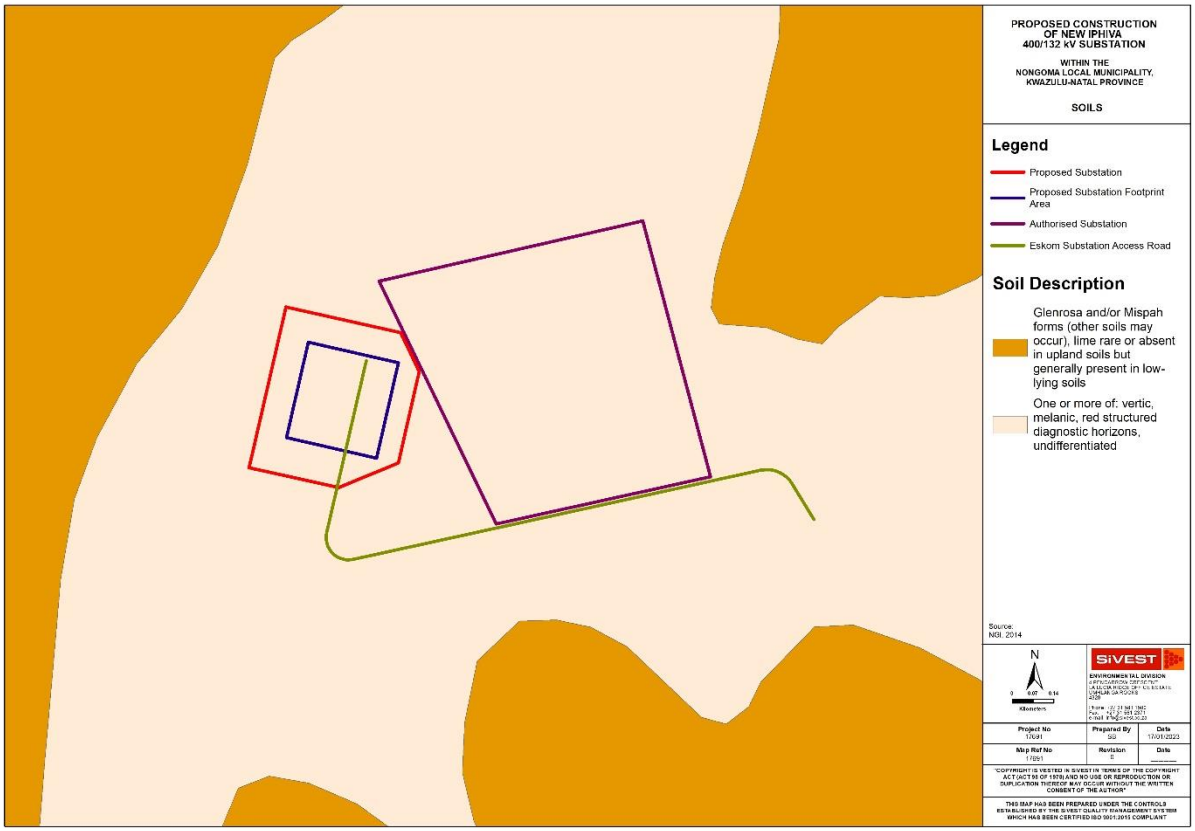

Figure 11: Soils

8.1.6 Wetlands

A Wetland Impact Assessment was undertaken by Digby Wells (May 2023). The wetlands associated with the previous layout were desktop delineated and confirmed during a rapid site survey. In addition, the site observations and surrounding land use activities were considered for interpretation and determination of the wetland Present Ecological State (PES) and Ecosystem Services (EcoServices). The site survey was conducted in April 2022. The layout was however updated following the Scoping and Impact Assessment Report recommendations to avoid impacts to the existing artificial wet areas. This updated Impact Assessment Report is therefore solely desktop based and information from the previous assessment was used to determine the preliminary impacts on the wetlands.

Dams and artificial wet areas were delineated to measure the extent of the existing disturbances. The origin of wetlands is not distinguished in the various Acts that protect them in South Africa and therefore artificial wetlands enjoy legal protection. A dam and artificial drain have been identified in the Area of Influence (AoI). The dam is however not connected to a natural water course and fills up through the artificial drain, surface runoff and rainwater. The dam dries up in the dry season.

8.1.6.1 Wetland Delineation

The wetland delineation was completed and updated according to a combination of the accepted methodologies from the Department of Water and Sanitation 'A practical field procedure for identification and delineation of wetlands and riparian areas (Department of Water Affairs and Forestry, 2005) and the "Updated manual for identification and delineation of wetlands and riparian areas" (Department of Water Affairs and Forestry, 2008).

The methodology includes four wetland indicators; Soil Wetness Indicator (SWI), Soil Form Indicator (SFI), Vegetation and Terrain and are discussed in the subsections below. Unlike wetland areas, riparian zones are usually not saturated for long enough for redoximorphic features to develop. Riparian zones instead develop in response to (and are adapted to) the physical disturbances caused by frequent overbank flooding from the associated water course. Both perennial and non-perennial systems support riparian vegetation (Department of Water Affairs and Forestry, 2008).

No wetlands were identified within the direct footprint of the infrastructure (Project Area), however, artificial wetlands (dam and drain) and four wetland Hydrogeomorphic (HGM) units were identified within the 500 m regulated area of the Project Area (AoI). The wetlands were categorised into the following HGM units:

- Two Unchannelled Valley Bottom Wetlands (UVB) with a distinct Riparian Zone.
- Two Channelled Valley Bottom Wetlands (CVB) with a distinct Riparian Zone; and
- Artificial wetlands, including a dam and drain.

The natural wetlands cover approximately 9.65 hectares (ha) and the Artificial wet areas cover approximately 0.6 ha of the AoI. The proposed substation will not occur on delineated wetlands and following the previous Scoping Report (April 2022), the Artificial wet areas are now being avoided and the impacts on these areas are minimised. The breakdown of the areas is detailed below.

Table 12: Wetland HGM Units of the Project Area

HGM Unit Number	HGM Unit	Area (ha)
1	Riparian/ UVB	6.84
2	Riparian/ UVB	0.23
3	Riparian/ CVB	2.30
4	Riparian/ CVB	0.58
-	Artificial (dam and drain)	0.60
Total Area (ha)		**10.57**

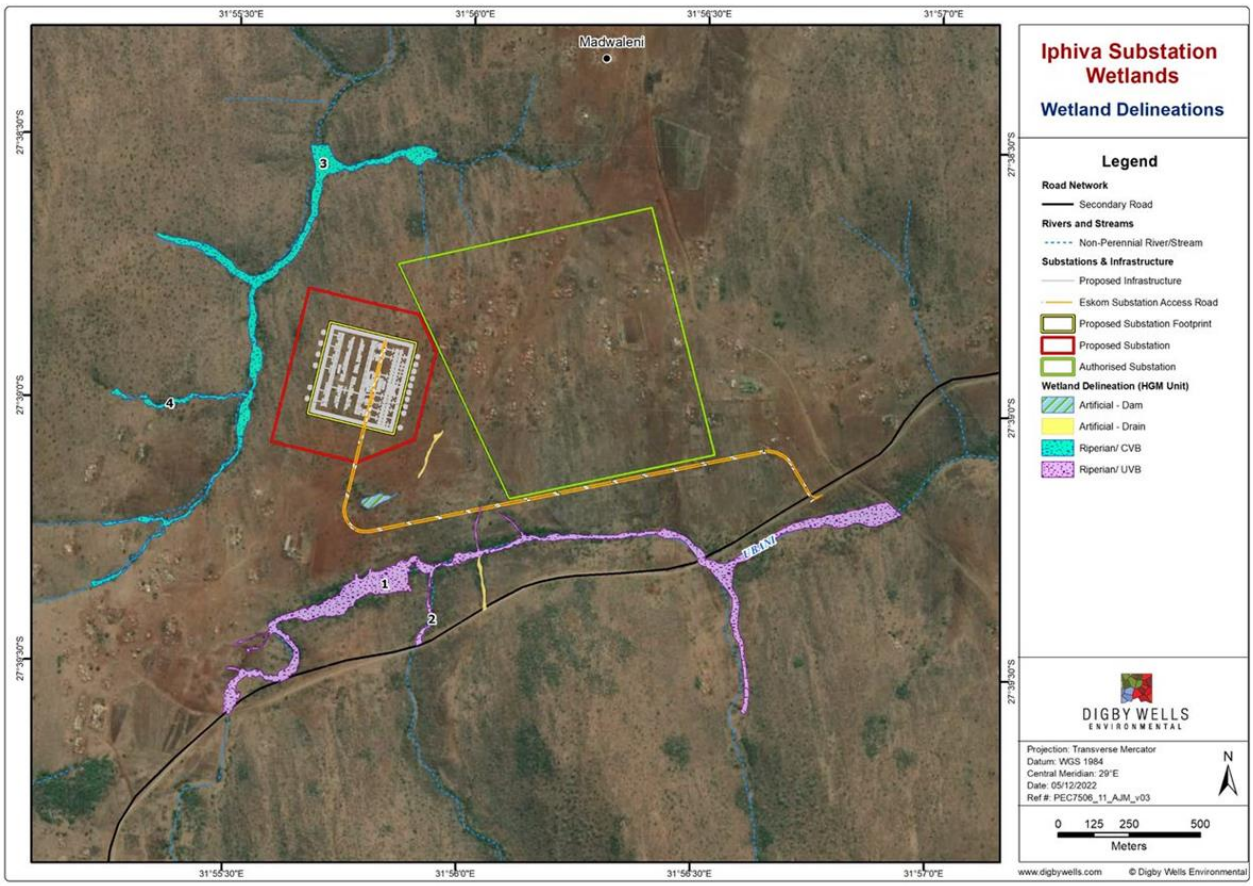

Figure 12: Wetland Delineation

8.1.6.2 Terrain Unit Indicators

Terrain Unit Indicators (TUI) help to identify areas in the landscape where wetlands are more likely to occur. Google Earth imagery and contours, coupled with the April 2022 field verifications, allow the geomorphic setting of the wetland and catchments to be understood and the HGM unit to be determined. Terrain indicators are important for understanding the hydrological and specific functionality of the wetland and determining the potential risks from anthropological activities on the wetlands.

The topography of the Project Area is typical of the Lowveld Ecoregion. Drainage of the Project Area is dominantly towards the northwest Riparian/CVB wetland (HGM3). Surface water is limited as most of the drainage lines and small streams dry up after the rains. Typical terrain indicators identified in the Project Area can be seen in the Figure below.

Artificial dam, collecting rainwater runoff and being used for cattle watering

Riparian/CVB west of the Project Area (HGM 3)

Figure 13: Terrain Indicators

8.1.6.3 Sensitivity Analysis

The sensitivity was assessed based on the opinion of the specialist, while considering HGM type, size, PES, EIS and EcoServices. The sensitivity ranged from Medium to Low. The Project Area can be characterised as moderately degraded due to modifications made to the natural habitat for various anthropogenic activities. Wetlands with a PES C rating support some level of ecological functioning; however, the freshwater catchment has been largely modified as an outcome of changes in the water input volumes and flow regimes, as well as distribution and retention patterns of water passing through the wetlands. Sedimentation from cultivated lands and civil infrastructure within the wetlands decreases the quality of water in selected areas and affects large areas of vegetation and underlying

geomorphology. Roads, bridges, and other infrastructure have been built within the wetlands and consequently, increase run-off in selected areas, creating preferential and artificial flow paths.

Table 13: Sensitive Areas

HGM No	HGM Unit	PES	EcoServices	EIS	Sensitivity
1	Riparian/ UVB	C	Very Low	High	Moderate
2	Riparian/ UVB	C	Very Low	Moderate	Low
3	Riparian/ CVB	C	Very Low	Moderate	Low
4	Riparian/ CVB	C	Very Low	Low	Low

Relevant threats to the biodiversity and ecosystem services of wetlands include habitat loss, degradation and fragmentation, AIPs, overexploitation of the agricultural resource (soils), hydrological changes to the wetlands, nutrient loading due to anthropological activities, and potential pollution due to sewage, pesticides and herbicides and domestic use of the freshwater systems.

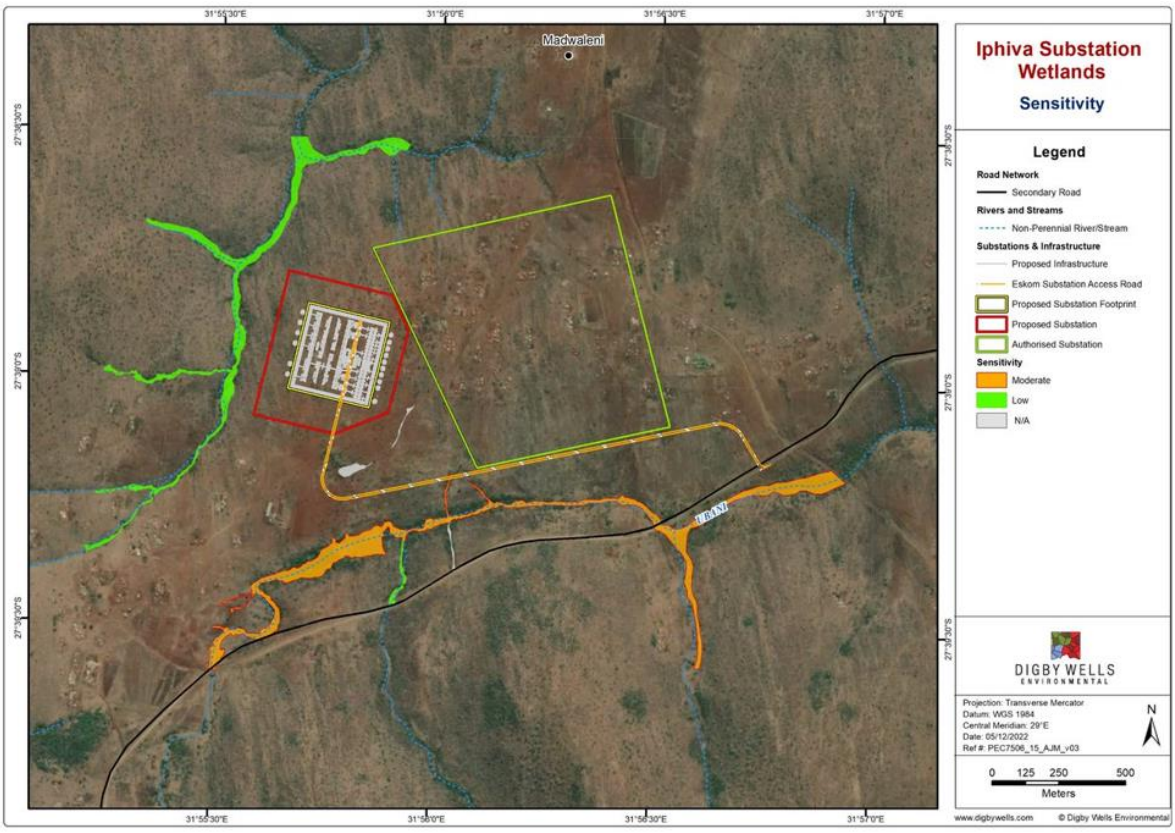

Figure 14: Wetland Sensitivity

8.2 DESCRIPTION OF THE BIO-PHYSICAL ENVIRONMENT

8.2.1 Biodiversity (Fauna and Flora)

The proposed substation falls within the Maputaland-Pondoland Centre of Endemism, which is a biodiversity hotspot. There are two Important Bird Areas (IBAs) in close proximity to the proposed substation namely, Pongola Nature Reserve and the Mkuze Game Reserve which forms part of the Isimangaliso Wetland Park. Collectively these IBAs would constitute some of the most avifaunal rich and diverse areas in South Africa. Many of the areas outside these IBAs will have similar habitat and species will not be restricted to the protected areas.

8.2.1.1 Description of the vegetation communities

The site visits identified various vegetation communities within the Project area. The vegetation communities are described in detail in tabular formats below with accompanying representative photographs.

Most of the immediate area within the proposed substation has already incurred transformation from the surrounding community and is not representative of the regional vegetation. However, the immediate surroundings of the proposed substation sustain unique geological (such as drainage lines and surrounding undulating hills), geographical or topographical features of potential importance. A total of 63 floral species were recorded during the assessment and are presented in below.

Table 14: Recorded Floral Species

Family	Species	Habitat Type	Conservation
Acanthaceae	*Baleria elegans orientalis*	Tree Savanna & Riparian	LC
Acanthaceae	*Justicia flava*	Tree Savanna	LC
Amaryllidaceae	***Ammocharis coranica***	**Tree Savanna**	**Protected**
Amaryllidaceae	***Crinum macowanii***	**Tree Savanna & Riparian**	**Protected**
Anacardiaceae	***Sclerocarya birrea subsp caffra***	**Tree Savanna & Riparian**	**Protected**
Anacardiaceae	*Ozoroa engleri*	Tree Savanna & Riparian	LC
Apocynaceae	*Cynanchum viminale*	Riparian	LC
Apocynaceae	***Stapelia gigantea***	**Tree Savanna & Riparian**	**Protected**
Asparagaceae	*Asparagus densiflorus*	Tree Savanna	LC
Asparagaceae	*Sanservia hyacinthoides*	Riparian	LC
Asphodelaceae	*Aloe marlothii*	Tree Savanna	LC
Asteracea	*Parthenium hysterophorus*	All	AIP
Asteracea	*Zinnia peruviana**	Tree Savanna	LC
Bignoniaceae	*Tecomaria capensis*	Tree Savanna & Riparian	LC
Boraginaceae	*Ehretia rigida*	Riparian	LC

Family	Species	Habitat Type	Conservation
Burseraceae	*Commiphora pyracanthoides*	Riparian	LC
Cactaceae	*Cereus jamacaru**	Tree Savanna	1b
Cactaceae	*Opuntia ficus-indica**	Tree Savanna	LC
Caesalpiniaceae	*Schotia brachypetala*	Riparian	LC
Caesalpiniaceae	*Schotia capitata*	Riparian	LC
Cannabaceae	*Celtis africana*	Riparian	LC
Celastraceae	*Gymnosporia buxifolia*	Riparian	LC
Convolvulaceae	*Ipomoea carnea ssp. fistulosa**	Riparian	LC
Cyperacea	*Cyperus articulatus*	Riparian	LC
Ebenaceae	*Euclea daphinoides*	Riparian	LC
Euphorbiaceae	*Euphorbia cooperi*	Tree Savanna	LC
Euphorbiaceae	*Euphorbia ingens*	Tree Savanna	LC
Euphorbiaceae	*Euphorbia tirucalli*	Tree Savanna	LC
Euphorbiaceae	***Spirostachys africana***	**Riparian**	**Protected**
Fabaceae	*Bolusanthus speciosus*	Riparian	LC
Fabaceae	*Dichrostachys cinerea*	Tree Savanna & Riparian	LC
Fabaceae	*Gleditsia triacanthos**	Tree Savanna	AIP
Fabaceae	*Indigofera velutina*	Tree Savanna	LC
Fabaceae	*Peltophorum africanum*	Tree Savanna & Riparian	LC
Fabaceae	*Senegalia burkei*	Tree Savanna	LC
Fabaceae	*Senna didymobotrya**	All	AIP
Fabaceae	*Vachellia nilotica*	Tree Savanna	LC
Fabaceae	*Vachellia tortilis*	Tree Savanna	LC
Fabaceae	*Vachellia xanthophloea*	Riparian	LC
Malvaceae	*Abutilon austro-africanum*	Riparian	LC
Malvaceae	*Hibiscus calyphyllus*	Riparian	LC
Malvaceae	*Melhania forbesii*	Tree Savanna	LC
Mimosaceae	*Senegalia nigrescens*	Riparian	LC
Moraceae	*Ficus albutilifolia*	Riparian	LC
Moraceae	*Ficus sycamorus*	Riparian	LC
Poaceae	*Aristida congesta*	Tree Savanna & Riparian	LC
Poaceae	*Cenchrus ciliaris*	Riparian	LC
Poaceae	*Eragrostis capensis*	Riparian	LC
Poaceae	*Melinis repens*	Tree Savanna & Riparian	LC
Poaceae	*Panicum eckloni*	Riparian	LC
Poaceae	*Panicum maximum*	Riparian	LC
Poaceae	*Urochloa mosambicensis*	Riparian	LC
Rhamnaceae	*Ziziphus mucronata*	Tree Savanna & Riparian	LC
Sapindaceae	*Hippobromus pauciflorus*	Riparian	LC

Family	Species	Habitat Type	Conservation
Sapindaceae	*Pappea capensis*	Riparian	LC
Tiliaceae	*Grewia flavescens*	Riparian	LC
Tiliaceae	*Grewia hexamita*	Riparian	LC
Tiliaceae	*Grewia lasiocarpa*	Riparian	LC
Verbenaceae	*Lantana camara**	Tree Savanna & Riparian	AIP
Vitacea	*Cissus quadrangularis*	Riparian	LC
Vitacea	*Cissus rotundifolia*	Riparian	LC
Poaceae	*Pennisetum clandestium**	Riparian	AIP

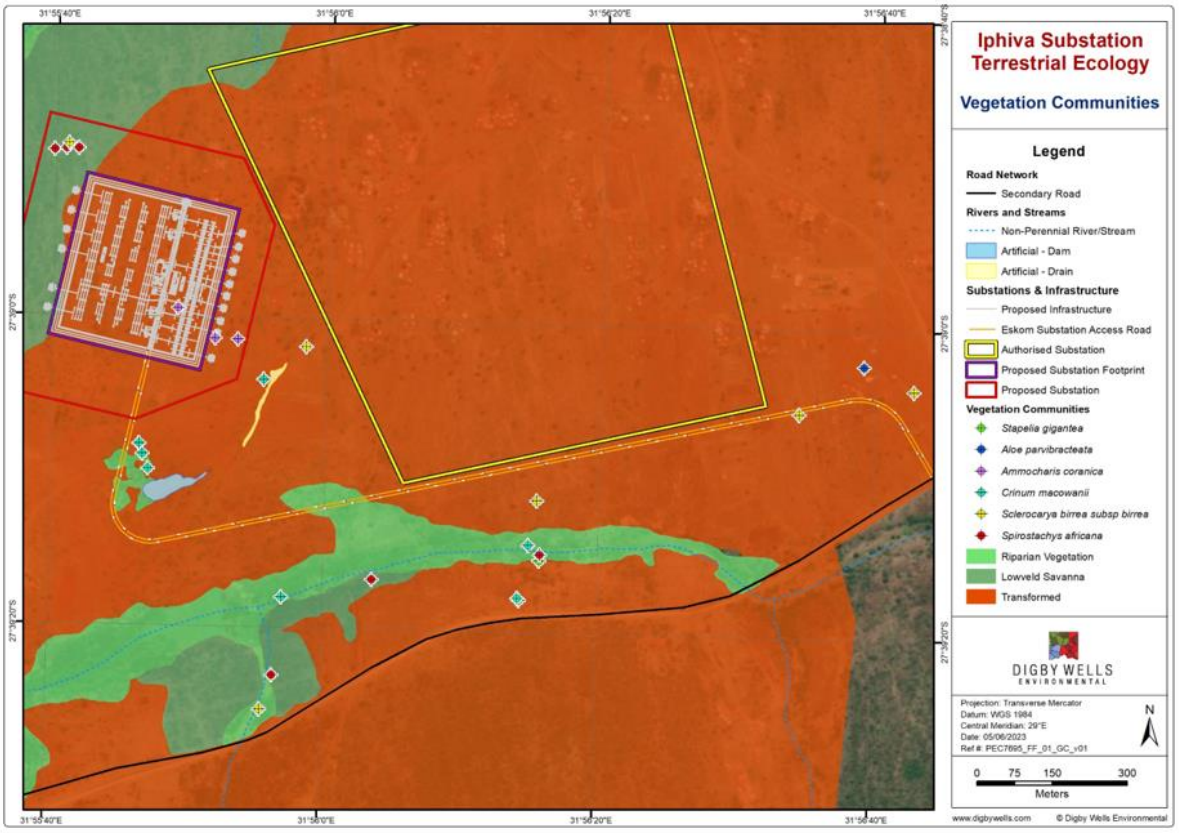

Figure 15: Vegetation communities

8.2.1.2 Regional Vegetation

The Iphiva Substation Project Area falls within the Zululand Lowveld of the Savanna Biome (Mucina and Rutherford 2012. The Savanna Biome is one of the nine South African biomes and is found across South Africa, excluding the Western Cape. The Zululand Lowveld vegetation type is found in KwaZulu-Natal, Mpumalanga and Swaziland. Cultivation is the main threat to this biome and the vegetation type.

The Zululand Lowveld vegetation consists of various bushveld units: dense thickets of Dichrostachys cinerea, Vachellia and Senegalia species; park-like savanna with Vachellia tortilis; and tree-dominated woodland with broad-leaved open bushveld with Sclerocarya birrea subsp. caffra and Senegalia nigrescens. Overall, the vegetation occurs on extensively flat or slightly undulating landscapes.

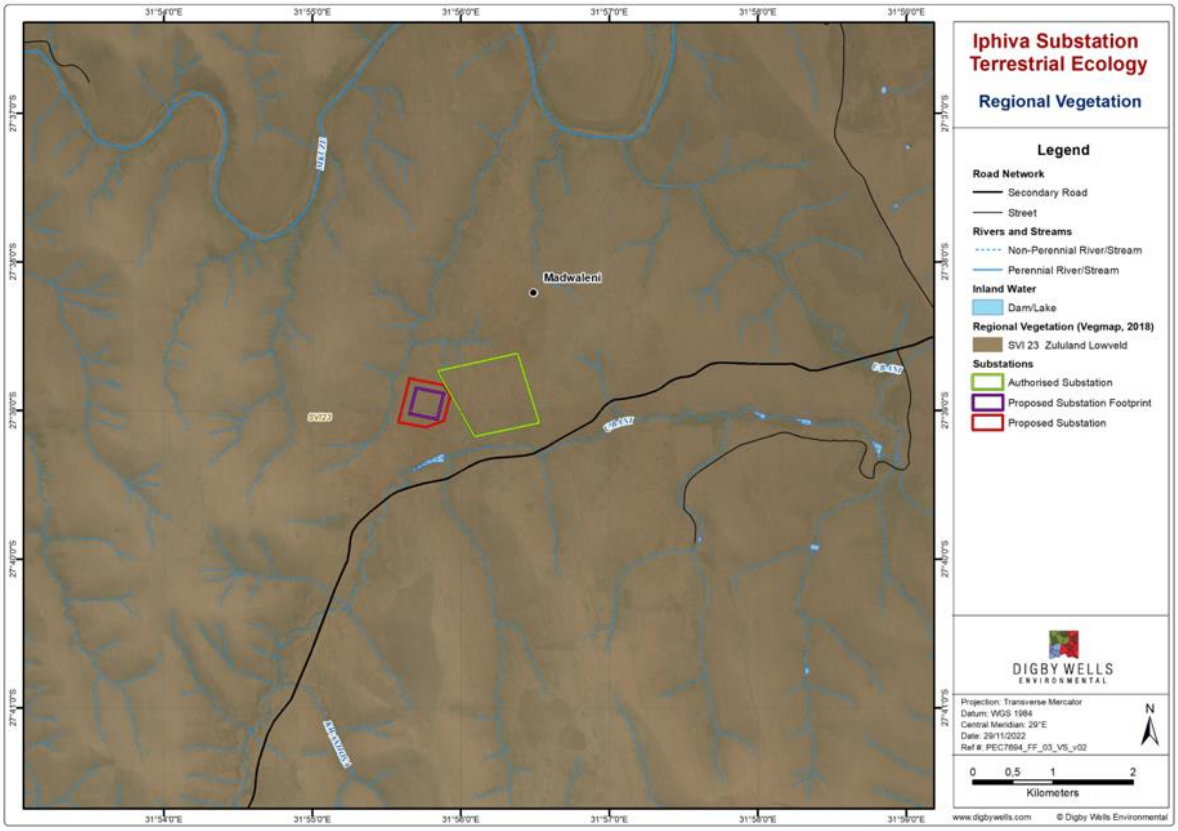

Figure 16: Regional Vegetation Map of the Iphiva Substation Project Area

8.2.1.3 Protected Flora

Of the potentially occurring species (shown in Appendix B), four floral SCC are expected to occur and are listed in Table 7 2. While these species are not listed on the SANBI Red List they are provincially protected under the seventh schedule of protected Indigenous plants of the KwaZulu-Natal Nature Conservation Management Amendment Act of 1999 (Act No. 5 of 1999). *Ammocharis coranica* is an herbaceous species found across South Africa in sunny and well-drained areas and was subsequently confirmed on site. The species is a slow grower and mature bulbs can be as much as 50 years old.

Table 15: Flora SCC that may occur within the Project Area

Family	Scientific Name	Red List Category	Provincially Protected Species
Amaryllidaceae	*Ammocharis coranica*	LC	Protected

Family	Scientific Name	Red List Category	Provincially Protected Species
Hyacinthaceae	*Albuca abyssinica*	LC	Protected
Hyacinthaceae	*Albuca* sp.	Not Evaluated	Protected
Hyacinthaceae	*Ledebouria humifusa*	LC	Protected

Several floral SCC were confirmed during the site visits and are listed in table below. Two trees, namely Sclerocarya birrea subsp caffra and Spirostachys africana are protected under the National Forestry Act of 1998 (Act No. 84 of 1998) (NFA) and two bulbous species, Crinum macowanii and Ammocharis coranica and two Aloes, Aloe marlothii and Aloe parvibracteata were recorded within the various vegetation communities. Figure 16, Figure 17 and Figure 18 exhibit the floral SCC recorded during the site visit.

The additional site visit confirmed the presence of an additional floral SCC, namely Stapelia gigantea. This species was confirmed in close proximity to the proposed road (Figure 19). The locality of the few recorded floral SCC can be viewed in the vegetation communities' maps.

Table 16: Confirmed Floral SCC

Family	Scientific Name	NFA	Provincially Protected Species
Amaryllidaceae	*Crinum macowanii*	-	Protected
Amaryllidaceae	*Ammocharis coranica*	-	Protected
Asphodelaceae	*Aloe marlothii*	-	Protected
Asphodelaceae	*Aloe parvibracteata*	-	Protected
Anacardiaceae	*Sclerocarya birrea subsp caffra*	Protected	-
Euphorbiaceae	*Spirostachys africana*	Protected	-
Apocynaceae	*Stapelia gigantea*	-	Protected

Removal or damage of the species listed under the NFA would requires a license for the removal (*Sclerocarya birrea subsp caffra* and *Spirostachys africana*). Similarly, *Aloe parvibracteata*, *Aloe marlothii*, *Crinum macowanii*, *Stapelia gigantea* and *Ammocharis coranica* are specially protected in terms of the KZN Nature Conservation Management Act and will require a permit in terms of the above Ordinance for the disturbance or removal of the plants. These permits are required prior to any development activities commence.

Figure 17: Left: *Ammocharis coranica*. Right: *Crinum macowanii*

Figure 18: Left: *Spirostachys africana*. Right: *Sclerocarya birrea subsp caffra*

Figure 19: Left: *Aloe parvibracteata*. Right: *Aloe marlothii*

Figure 20: *Stapelia gigantea*

8.2.1.4 Alien Invasive Species

Ten recorded species have a NEM:BA category listing 1b, which will require controlled management. These species were prominent within the transformed and disturbed areas throughout the Project area. They were seen along roadsides, riverbanks and drainage lines, and on the edges of the homesteads, kraals and fences. The recorded AIPs are listed in table below and species photographed during site visit are presented in Figure 20.

Table 17: Recorded AIPs

Family	Species	Habitat	Category
Asteracea	*Parthenium hysterophorus*	All	Invasive
Agave	*Agave sisalana*	Transformed	2
Apocynaceae	*Catharanthus roseus*	Transformed	1b
Cactaceae	*Opuntia ficus-inidca*	Transformed	1b
Cactaceae	*Opuntia aurantiaca*	Transformed	1b
Asteracea	*Zinnia peruviana*	Transformed	Invasive
Cactaceae	*Cereus jamacaru*	Tree Savanna	1b
Convolvulaceae	*Ipomoea carnea ssp. fistulosa*	Riparian	1b
Fabaceae	*Gleditsia triacanthos*	Tree Savanna	1b
Fabaceae	*Senna didymobotrya*	All	1b
Verbenaceae	*Lantana camara*	Tree Savanna & Riparian	1b
Poaceae	*Pennisetum clandestium*	Riparian	1b
Asteraceae	*Xanthium strumarium*	Riparian	1b

Figure 21: from left to right (*Opuntia aurantiaca*, *O. ficus-indica, Agave sisalana*, and *Xanthium strumarium*

8.2.1.1 Sensitivity Findings

After identifying vegetation communities and delineating their respective boundaries, the various vegetation communities defined for the study site were further assessed qualitatively in terms of their ecological condition in order to estimate relative habitat sensitivity.

The majority of the Project Area which consists of the Transformed Habitat, has been assessed as being of Low sensitivity from a fauna and flora perspective. This is due to the transformation of the landscape and the current agropastoral activities, such as livestock rearing and presence of home dwellings. Many of the recorded AIPs were found within this unit and were associated with the surrounding housing dwellings. The land had been subjected to intense grazing by the communities' livestock and have subsequently endured signs of trampling, which has exacerbated erosion is some of the areas.

Although majority of the existing bushveld has been removed or cut down, several floral SCC have flourished in the cleared areas, such as *Ammocharis coranica* and *Aloe Marlothii*. A few lone-standing large *Scelrocary birrea subsp caffra* have been left to sustain the surrounding community and are apparent in the Project boundary. However, the area does not resemble the regional vegetation and is characterised with habitat transformation and low fauna and flora diversity and abundance, as well as dominated by pioneering AIPs.

Moderate sensitivity can be observed in the Tree Savanna (Lowveld Bushveld) and the Artificial Dam within the Transformed area. This is fairly limited in extent and can be observed in isolated patches along the peripheries of the Project boundary. They are extensions of surrounding bushveld which are connected to more unique and sensitive habitats (i.e. Riparian Habitat). They provide shelter and provide niche habitat for numerous cryptic faunal species. The relative abundance and diversity of species was higher than that of the transformed areas. The Artificial Dam provides water for the livestock among other faunal species, it sustains the animals within the area and provides foraging for all domains of species. The combination of its connection to sensitive habitats and the structural vegetative composition warrants the Moderate sensitivity rating.

High sensitivity has been attributed to the Riparian areas along the boundaries of the Project Area and the peripheries of the woody vegetation found in the Lowveld Bushveld. Riparian habitats offer unique features for all faunal species due to its ability to provide sustenance and shelter for all domains of animals. The Riparian Habitat experiences fluctuating water levels altering the vegetation composition and species flow. Deep-rooted tall trees become well established along the banks and offer nesting, roosting and perching sites for numerous raptors and piscivorous birds. Additionally, two (2) nationally protected trees were identified within this habitat, namely *Spirostachys africana* and *Sclerocarya birrea subsp caffra*, as well as a higher floral species abundance and diversity was recorded within the adjacent riparian areas next to the Project area.

From the described sensitive areas and the location of the proposed development footprint area (according to the proposed facility layout) relative to these areas, it can be concluded that the majority of the proposed development will occur within a Low sensitivity area with some encroachment into Medium sensitive areas. However, the development within these medium areas is regarded as acceptable, as this will not have a significant impact on local habitat diversity with most of these species encountered within

these medium sensitivity areas, moving into adjacent similar habitats. Overall, it was concluded that with the necessary mitigation measures implemented in this development will have little impact on the terrestrial biodiversity character of the area with minimal loss due to habitat destruction, and disturbance.

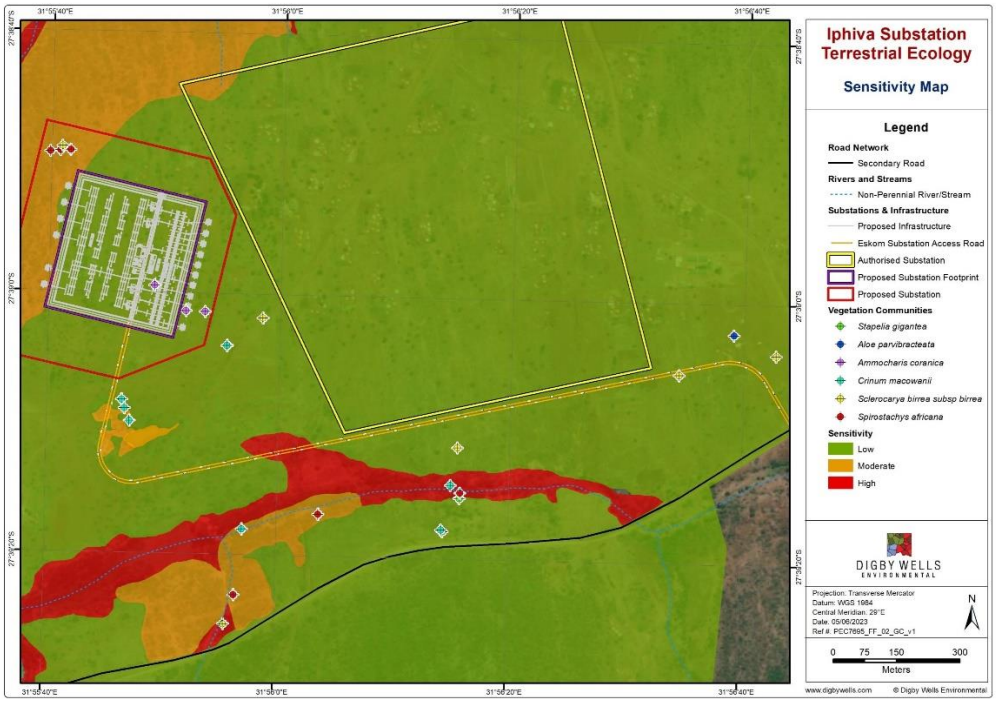

Figure 22: Sensitivity Map

8.2.2 Fauna

The proposed project is located within 2731CB Quarter Degree Square (QDS) in South Africa. South African National Biodiversity Institute (SANBI) datasets were overlaid on the QDS to determine the availability of Red Data species or species of conservation concern (SCC). The Virtual Museum (http://vmus.adu.org.za/) has generated potential SCC that may occur within the region and the relevant species are discussed below in the succeeding headings.

8.2.2.1 Mammals

Within the identified QDS of the Project Area (2731CB), the Virtual Museum (http://vmus.adu.org.za/) identified 15 mammal SCC that may potentially occur on site. Of these SCC, three are considered Endangered species, including the Roan Antelope (*Hippotragus equinus*), Oribi (*Ourebia ourebi*) and African Wild Dog (*Lycaon pictus*). However, these species are most likely to be present only in the protected areas that are in the surrounding areas.

Mammals form a vital component of ecosystems. Not only are they important for nutrient cycling, habitat modification, consumers of plants and seed dispersal but they're also a considerable component of predators in healthy ecosystems.

The site visit in 2022 recorded a low species count, which was limited to only Grey Duiker (*Sylvicarpa grimmia*), Scrub Hare (*Lepus saxatilis*) and African Civet (*Civettictis civetta*). Similarly, the site visit in 2023 recorded additional mammal species including Slender Mongoose (*Herpestes sanguineus*), single-striped grass mouse (*Lemniscomys rosalia*), and Vervet monkey (*Chlorocebus pygerythus*). Impala (*Aepyceros melampus*) were noted on a neighbouring property and within close proximity to the Project.

8.2.2.2 Reptiles

Reptiles are ectothermic (cold-blooded) meaning their internal basal temperature is influenced by their surrounding external environment and as a result, reptiles are dependent on environmental heat sources. Thus, many reptiles regulate their body temperatures by basking in the sun, or warmer surfaces (or substrates). Substrates are an important determining factor for identifying which habitats are suitable for which species of reptile. The weather conditions during the site assessment were not conducive for successful reptile sampling as it was overcast and raining. This most likely impacted the sample collection and as a result, no reptile species were recorded. Additionally, majority of the Project boundary is within a previously disturbed area with very little to no basal vegetation, this inherently means that there is no adequate cover for small terrestrial reptiles.

While no reptiles were recorded in 2022, the 2023 site visit recorded an African striped skink (Trachylepsis striata), tropical house gecko (Hemidactylus mabouia) and variable skink (Trachylepsis varia) (see Figure 22). There is suitable habitat present for reptile species in the immediate surrounds and within the riparian areas providing arboreal habitat for numerous reptile species. Of the potentially occurring vulnerable species. The ADU has listed two reptile SCC that may occur within the region, namely the large-scaled grass lizard and Nile crocodile.

Table 18: Recorded AIPs

Species	Conservation Status	Habitat Requirements	Potential of Occurrence
Chamaesaura macrolepis (large-scaled grass lizard)	NT	It is commonly found amongst grasslands, including the Highveld Grasslands.	Unlikely
Crocodylus niloticus (Nile crocodile)	VU	Nile crocodiles may be able to tolerate an extremely broad range of habitat types, including small brackish streams, fast flowing rivers, swamps, dams, and tidal lakes and estuaries. They are often found in waters adjacent to various open habitats such as savanna or even semi-desert but can also acclimate to well-wooded	Unlikely

Species	Conservation Status	Habitat Requirements	Potential of Occurrence
		swamps, extensively wooded riparian zones, waterways of other woodlands and the perimeter of forests	

Figure 23: from left to right (*Trachylepsis striata*, and *Hemidactylus mabouia*

8.2.2.3 Amphibians

According to Carruthers (2009), frogs occur throughout southern Africa. A number of factors influence their distribution, and they are generally restricted to the habitat type they prefer, especially in their choice of breeding site. The choices available of these habitats coincide with different biomes, these biomes in turn, are distinguished by means of biotic and abiotic features prevalent within them. Therefore, a collection of amphibians associated with the Grassland and Bushveld biome will all choose to breed under the prevailing biotic and abiotic features present. Furthermore, niche differentiation is encountered by means of geographic location within the biome, this differentiation includes, banks of pans, open water, inundated grasses, reed beds, trees, rivers and open ground, all of which are present within the area of interest.

Two amphibians were recorded within the artificial dam within the Project area, African clawed frog (*Xenopus laevis*) and grey foam-nest tree frog (*Chiromantis xerampelina*), common synanthropic species that copes well in modified anthropogenic habitats and areas. Amphibians expected to occur on site are listed in the Appendix E (http://sarca.adu.org.za/). No protected amphibian species are expected to occur on site.

8.2.2.4 Invertebrates

There are 88 invertebrate species recorded from various databases that could occur within the Project site. No invertebrate SCC are expected to occur, however, there is existing information regarding the distribution of a rare butterfly that was recorded in the area in 2007. This information was obtained from a survey conducted by the Lepidopterist's Society of Southern Africa on properties associated with the Manyoni Private Nature Reserve. It is not well understood if the species will be impacted by the Project

as the complete distribution is not well known or verified yet. The rare butterfly is the Anthene minima. The species was listed as rare in the Red Data Book published by CSIR in 1989 (Mecenero, Edge and Staude, Southern African Lepidoptera Conservation Assessment (SALCA) 2015).

No invertebrate SCC were recorded. Images of the recorded invertebrates are presented below.

Figure 24: Left to right: Redwart milkweed locust, harvester termites, Funnel spider nest, ground beetle, Giant Blonde Snail, Millipede, and Redleg Orbweaver

8.2.3 Avifauna

The proposed substation falls within the Maputaland-Pondoland Centre of Endemism, which is a biodiversity hotspot. There are two Important Bird Areas (IBAs) in close proximity to the proposed substation namely, Pongola Nature Reserve and the Mkuze Game Reserve which forms part of the Isimangaliso Wetland Park. Collectively these IBAs would constitute some of the most avifaunal rich and diverse areas in South Africa. Many of the areas outside these IBAs will have similar habitat and species will not be restricted to the protected areas.

The Pongola Nature Reserve IBA is located 30 km south-east of Pongola town. The Pongola River flows in from the north-west and only a small section of the river lies inside the reserve. The vegetation predominantly consists of Zululand Lowveld (Mucina and Rutherford 2006). The associated wetlands are important for wetland-dependent birds such as the Pink-backed Pelican (*Pelecanus rufescens*) which has bred in the past, making this one of only two sites in South Africa where it does so.

Globally threatened species include the endangered vulture species such as Lappet-faced Vulture (*Torgos tracheliotos*), White-headed Vulture (*Trigonoceps occipitalis*), White-backed Vulture (*Gyps africanus*) and Martial Eagle (*Polemaetus bellicosus*). Regionally threatened species are Marabou Stork (*Leptoptilos crumeniferus*), African Marsh Harrier (*Circus ranivorus*), African Grass Owl (*Tyto capensis*) and Tawny Eagle (*Aquila rapax*).

There are two privately protected game reserves in close proximity to the proposed substation, namely the Manyoni Private Game Reserve and the Somkhanda Game Reserve. The Somkhanda Game Reserve is a community-owned game reserve that is run and managed in partnership by the Gumbi Community Wildlands Conservation Trust, Africa for Africa, Africa4 Wild and Pamco. Other partners involved in the reserve's conservation projects are Wildlife Act Fund, KZN Wildlife and WWF. The Somkhanda Game Reserve also became the first community owned land to become a partner in the WWF/Ezemvelo Black Rhino Range Expansion Programme, and a population of endangered Black Rhino were introduced in 2007. Furthermore, Manyoni Private Game Reserve was formally proclaimed by the government as a Nature Reserve under the Protected Areas Act. Since the establishment of the reserve, we have seen the reintroduction of Lions, making Manyoni a Big 5 Reserve, and the reintroduction of endangered Cheetahs and African Wild Dogs. In addition to endangered species conservation, Manyoni Private Game Reserve has a strong focus on conserving biodiversity, this includes the landscapes, ecosystems and processes upon which this biodiversity depends.

Not only do the reserves play host to globally listed Big 5 species, but they also sustain viable populations of listed birds of prey such as Lappet-faced Vulture (*Torgos tracheliotos*), White-headed Vulture (*Trigonoceps occipitalis*), White-backed Vulture (*Gyps africanus*) Martial Eagle (*Polemaetus bellicosus*), Bateluer (*Terathopius ecaudatus*), Tawny Eagle (*Aquila rapax*), Crowned Eagle (*Lophaetus occipitalis*), Secretarybird (*Sagittarius serpentarius*) and Marabou Stork (*Leptoptilos crumeniferus*). Congruently, the vicinity of the said protected areas in the relation to the proposed substation provide corridors and important habitat for restricted range and biome restricted species.

Four (4) major bird habitats have been identified in the Project Area and in the immediate surrounds:

- Riparian Habitat;
- Artificial Dam with Woody Periphery;
- Tree Savanna (Lowveld Bushveld); and
- Transformed Areas.

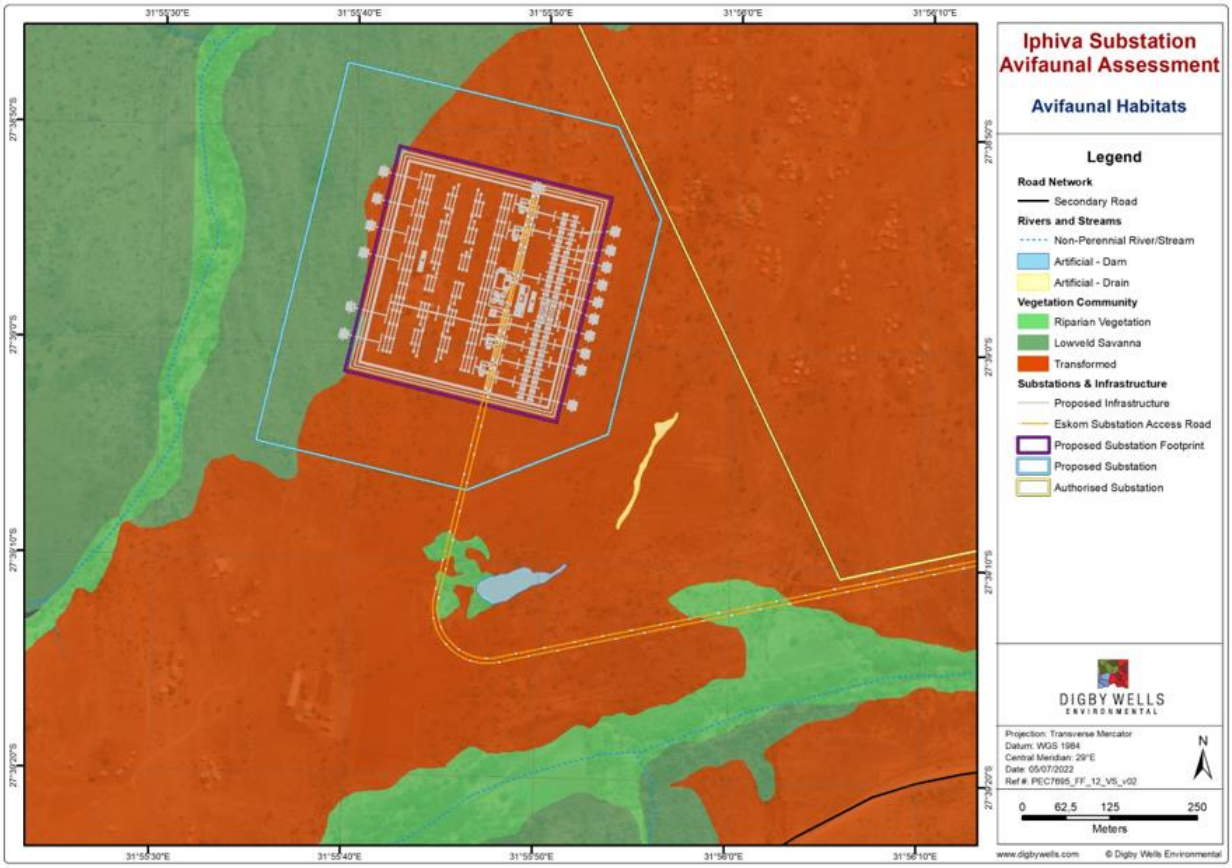

Figure 25: Avian Habitats within the Project Area

The Project Area supports a relatively low diversity and abundance of avifauna, which is to be expected in an area that is predominantly transformed. A total of 78 species were recorded in 2022 survey. The 2018 survey, which covered a much larger range of area recorded 170 avifaunal species. The low species count may be attributed to the extensive land transformation seen within the proposed substation area and the smaller area of interest in comparison to the 2018 survey. Highest avian diversity was recorded within the Riparian Habitat, followed by the Tree Savanna. The unique vegetative structural composition of the Riparian Habitat provides habitat for an array of avifaunal species. It must be noted that stochastic high rainfall events and other atypical prevailing influences (persistent cold) may have influenced the local avifaunal assemblages.

According to the South African Bird Atlas Project 2 (SABAP2), 218 species have been identified in the area. Of these, twelve (12) species have been assigned an IUCN Red List Category and SANBI Red List Category (Taylor, Peacock and Wanless 2015). The proposed substation is situated in close proximity to protected areas (namely the Manyoni Private Game Reserve and Somkhanda Game Reserve). Subsequently, 12km south of the Project Area, several White-backed Vultures and a Tawny Eagle were seen perched among dead *Vachellia xanthophloea* and numerous sightings of Bateleur scanning the area. This showcases the sensitivity of the entire area in relation to the Projects locality. Although

recorded outside of the Project Area, their transient nature may bring them into contact with the future development.

The most commonly recorded species within the Project Area during the 2022 assessment included passerine species such as Southern Grey-headed Sparrow, Fork-tailed Drongo, Blue Waxbill, Croaking Cisticola and Yellow-fronted Canary. Common non-passerine species included Common Myna, Sabota Lark, Cape Turtle Dove, Crowned Lapwing and Cape Glossy Starling. Raptors were not common within the Project Area, although few Dark Chanting Goshawk, Black-winged Kites were sighted perching on the telephone poles along the main road and an African Harrier Hawk was encountered with the Project Area.

Three avian SCC were recorded in close proximity to the Project area. The 2018 assessment recorded eleven (11) avian SCC for the entire development footprint, and the 2022/23 assessment recorded three (3) of the previously identified SCC for the substation alone.

On the basis of the observations recorded during the 2022 and 2023 site visit, and with due consideration of previously recorded avifauna information of the Project Area, twelve (12) priority species should be considered in this avifaunal impact study. These threatened species are known to occur or could occur in the Project Area and the broader impact zone of the development and which may be negatively impacted by the Project.

8.2.3.1Sensitivity Findings

It is important to delineate sensitive avian habitats within the project site in order to ensure the development does not have a long-term negative impact on these habitats. Important avian habitats play an integral role in their persistence within a landscape providing nesting, foraging and reproductive benefits.

The majority of the Project area which consists of the Transformed Habitat, has been assessed as being of Low sensitivity from an avifaunal perspective. This is due to the transformation of the landscape and lack of habitable trees and shrubs for avifaunal species. The transformed areas are characterised with habitat transformation and low avifaunal diversity and abundance.

Moderate sensitivity can be observed in the Lowveld Bushveld Tree Savanna and Artificial Waterbody. This is fairly limited in extent and can be observed in isolated patches along the peripheries of the Project boundary. They are extensions of surrounding bushveld which are connected to more unique and sensitive habitats (i.e Riparian Habitat). They provide shelter and provide niched habitat for numerous cryptic avifaunal species. The relative abundance and diversity of species was higher than that of the transformed areas. The combination of its connection to sensitive habitats and the structural vegetative composition warrants the Moderate sensitivity rating.

High sensitivity has been attributed to the Riparian areas along the boundaries of the Project area and the peripheries of the woody vegetation found in the Lowveld Bushveld. Riparian habitats offer unique features for all faunal species due to its ability to provide sustenance and shelter for all domains of animals. Regarding avian species, the Riparian Habitat experiences fluctuating water levels altering the

vegetation composition and species flow. Deep-rooted tall trees become well established along the banks and offer nesting, roosting and perching sites for numerous raptors and piscivorous birds. Additionally, the tall trees generally associated with Riparian areas are fruit bearing (i.e. Ficus sycamorous, Diospyrous lycioides, Pappea capensis) and provide foraging for frugivorous avian species. Furthermore, high avian species abundance and diversity was recorded within the adjacent Riparian areas next to the Project area.

From the described sensitive areas and the location of the proposed development footprint area (according to the proposed facility layout) relative to these areas, it can be concluded that the majority of the proposed development will occur within a Low sensitivity avifaunal area with some encroachment into Medium sensitive areas. However, the development within these medium areas is regarded as acceptable as this will not have a significant impact on local habitat diversity and avifaunal populations with most of these species, encountered within these medium sensitivity areas, moving into adjacent similar habitats. According to the proposed layout of the substation, no Highly Sensitive areas will be impacted by the proposed development.

Overall, it was concluded that with the necessary mitigation measures implemented in this development will have little impact on the avifaunal character of the area with minimal loss due to habitat destruction, and disturbance.

8.3 DESCRIPTION OF THE SOCIO-ECONOMIC CHARACTERISTICS

All the land that was owned or belonged to the KwaZulu Natal Government, is held by the Ingonyama Trust (www.ingonyamatrust.co.za) since 1994. The mandate of the trust is to hold the land for “the benefit, material welfare and social well-being of the members of the tribes and communities” living on the land. The Zulu King is the sole trustee of the land. The Ingonyama Trust Board administers the affairs of the Trust and the Trust land. Most, if not all, the land in KZN that is under traditional authority belongs to the Ingonyama Trust.

Settlement patterns in the study area are scattered and dwellings consist mostly of brick structures or traditional structures. Most people have isiZulu as home language.

Basic and social infrastructure is limited and does not meet the needs of the entire population in the area. Municipalities in the area are faced with challenges that urban municipalities do not have. The settlement patterns make it extremely challenging to provide infrastructure such as piped water and sanitation. Road infrastructure in general needs some upgrading, and the conditions of the roads make it challenging to reach the communities that need to be served. In some areas relationships with traditional leadership provides an additional challenge. As there are few employment opportunities in these areas, many males have migrated to urban areas in search of employment, resulting in a community that stays behind with more females than males, as well as a very young population group. Other challenges include poverty, unemployment, illiteracy and skills levels and crime. Most of the municipal areas have shown an increase both in the number of people as well as the number of households. In most areas the household sizes

have decreased. This can be due to children leaving their parents' house to stay on their own and start families of their own.

The area is characterised by high levels of poverty as well as deprivation on a number of dimensions which mostly related to access to basic services. Education levels are low and there are very few employment opportunities. In areas under traditional leadership, subsistence farming is a very important livelihood strategy and informal trading plays a much greater role in survival than in urban areas.

The detailed description of the area highlights the following important aspects for Eskom:

- Documentation used for communicating about the project should be available in English and isiZulu;
- High levels of illiteracy means that written word will not in all cases be the best way to communicate with some of the communities. Additional ways to communicate with the communities that are culturally appropriate must be found;
- Traditional leadership and the Ingonyama Trust are key stakeholders that need to be consulted. Sufficient time should be allowed for doing this in the correct way, meeting the cultural requirements;
- Basic infrastructure in the area varies and Eskom should take into consideration the characteristics of the specific area when planning the project, as there might, for example, not be water available in the area;
- Areas where there is a low incidence of access to electricity may have expectations in terms of getting access to electricity as one of the benefits of the project;
- Finding the required skills in the area might be a challenge and using local labour might be a challenge. This must be taken into consideration when planning the project and it may be necessary to include a skills development component;
- There might be greater expectations in terms of job opportunities in poorer, more deprived areas and there is also greater potential for social unrest in these areas as there might be greater competition for a scarce resource like a job;
- Opportunistic theft of materials might be a challenge, and the safety of materials and stock must be considered in planning;

8.3.1 Zululand District Municipality

Zululand District Municipality is one of the ten district municipalities in the province, making up a third of its geographical area and covering an area of 39 073.1 km^2 in 2016. It is located to the north-west of the province approximately 250 kilometres north of the eThekwini Metropolitan Municipality along the border with the Kingdom of Eswatini. The ZDM shares a border the Gert Sibande District Municipality (in the Mpumalanga Province) to the north-west; Amajuba and uMzinyathi District Municipalities to the west; King Cetshwayo District Municipality to the south and the uMkhanyakude District Municipality to the north, respectively.

The District Municipality is comprised of the following five local municipalities:

- Nongoma Local Municipality
- Ulundi Local Municipality

- eDumbe Local Municipality
- uPhongolo Local Municipality
- Abaqulusi Local Municipality

The following cities/towns are also located within the Zululand district.

- Vryheid
- Ulundi
- Nongoma
- Babanango
- Paulpietersburg

The main economic sectors of the district are:

- Community services (32.5%)
- Trade (15.9%)
- Finance and business services (14.9%)
- Agriculture (8.4%)

With a population of approximately 892 310 people, the Zululand district has a population density of 0.6/km^2. The district is characterised by a largely rural population (77%) with high levels of unemployment (56%) and low levels of education.

8.3.2 Nongoma Local Municipality

The Nongoma Local Municipality covers a geographical area of 2,185.5/km^2 making it the second largest of the five municipalities in the district. The following towns and areas are within the municipal area:

- Nongoma
- Maduma
- Thokazi and
- Mahlombe.

With a population of approximately 211 892 people, the Nongoma LM has a population density of 89/km^2. According to StatSa, Community Survey 2016, the area has a youthful population with 42,5% of the population being under 15 years; 38.5% being between 15 and 34 years; 12,8% being between 35 and 64 years and 6,2% being over 65 years of age.

8.4 DESCRIPTION OF THE CULTURAL AND HERITAGE CHARACTERISTICS

8.4.1 Cultural / Historical Environment

According to the Cultural Landscape Assessment undertaken by Digby Wells Environmental the cultural landscape is a composition of a series of natural layers that have both informed and been formed by the

patterns of human use and habitation on that place over time. The nature and shape of the landscape has informed the way in which it has been used, in turn ascribing cultural values to these place-specific features. Through unpacking the layers, landscape character units can be identified which need to be carefully considered in proposed alterations to the landscape.

Cultural landscapes are a significant factor in the evaluation of the impact of proposed development on cultural heritage resources, tangible (e.g. Historic settlements, landscapes, technological) and intangible (e.g. language, indigenous knowledge systems, oral traditions). The area investigated for the proposed Iphiva 400/132 kV Substation is considered as having a high cultural landscape heritage significance.

The Iphiva 400/132 kV Substation site can be divided into landscape character areas with cultural heritage resource types. These include Palaeontological, Archaeological – MSA, Archaeological – LFC, Archaeological – Undefined, Battlefield, Burial Grounds & Graves, Monuments & Memorials, Historical Built Environment, Intangible/Living, Place and Natural. These units were determined by taking the larger landscape context into consideration in order to understand the character and cultural heritage values that underpin the proposed development site.

8.4.2 Visual Character

The study area is characterised by a rolling topography with mountains located to the south and the west of the study site and smaller koppies to the east of the study site. The vegetation is a combination of grassland and bushveld trees with a medium height. In some sections the vegetation cover is dense but the vegetation cover surrounding the site is not as dense and is more a combination of grassland with a few trees. This could mainly be due to the small villages surrounding the study site. The non-perennial Ubani River flows along the southern boundary of the study site.

8.4.3 Visual Receptors

The sensitivity of the visual receptors/ viewers is determined by looking at the susceptibility of the visual receptors to the change that the proposed Project will bring to their views.

Table 19: Potential Sensitivity of Visual Receptors – the Project

Value	Type of viewer	Potential Sensitive Receptors
High	Residents staying within the villages that surround the study site.	Residents bordering the project site are considered to be more sensitive since the project will be in their foreground view. Other potential sensitive viewers include viewers from neighbouring farms.
	Tourist View 1 and 2 – Figure 4	People visiting the Somkhanda Game Resrve and the Zululand Rhino Reserve, as well as lodges such as the Manyoni Private Game Reserve, Zimanga Game Lodge, Buffalo Hill Safari Lodge and Hlekani Homestead.

Moderate	Locals and visitors travelling through the study area on the local roads.	
Low	People working within the study area and travelling along local roads whose attention may be focused on their work or activity and who therefore may be potentially less susceptible to changes in the view.	

8.4.4 Sensitive Viewers and Locations

The most prominent views to the Project site would be from the villages that surround the Project site, this would include Madwaleni (both east and west of the site) and KwaGudlintaba (south of the site). Views from Madwaleni would be foreground views which is mostly open and unobstructed. Potential Sensitive Viewer and Viewpoints, which illustrates the view sites of the panoramas and the nature of potentially sensitive viewing areas. Views from Kwagudlintaba will mostly be middle-ground views with some obstruction of the substation due to the topography of the area.

Other viewers with a potentially high sensitivity toward the Project include people visiting the area due to the aesthetic beauty of the area, this would include tourist destinations such as the lodges and the nature/ game reserves in the area. Although these viewers are sensitive viewers it should be noted that the Project would be mostly obstructed and will fall in the background of their views.

8.4.5 Visual Exposure

Visual exposure is determined by qualifying the visibility with a distance rating to indicate the degree of intrusion and visual acuity. The following criteria was used to describe the visual exposure:

- Highly visible – dominant or clearly noticeable, foreground view (0 – 0.8km)
- Moderately visible – recognisable to the viewer, middle-ground view (0.8km – 2km)
- Marginally visible – not particularly noticeable to the viewer, background view (2km – 5km)

Table below indicates the exposure of the various sensitive viewing areas.

Table 20: Sensitive Receptors – Visual Exposure

	Foreground view i.e. 0 – 800m from Project Site	**Middle-ground view i.e.800m to – 2km from Project Site**	**Background view i.e. 2km - 5km from Project Site and beyond**
Residential – Madwaleni (east of site)	**X clear to partially obstructed**	**X clear to partially obstructed**	
Residential – Madwaleni (west of site)	**X clear to partially obstructed**		
Residential – KwaGudlintaba (south of site)		**X clear to partially obstructed**	

	Foreground view i.e. 0 – 800m from Project Site	Middle-ground view i.e.800m to – 2km from Project Site	Background view i.e. 2km - 5km from Project Site and beyond
Somkhanda Game Reserve (Zimanga Game Lodge)			**X screened view**
Zululand Rhino Reserve (Buffalo Hill Safari Lodge and Hlekani Homestead)			**X partially obstructed to screened view**
Manyoni Private Game Reserve,			**X partially obstructed to screened view**
Local roads	**X clear to partially obstructed**	**X clear to partially obstructed**	**X clear to partially obstructed**

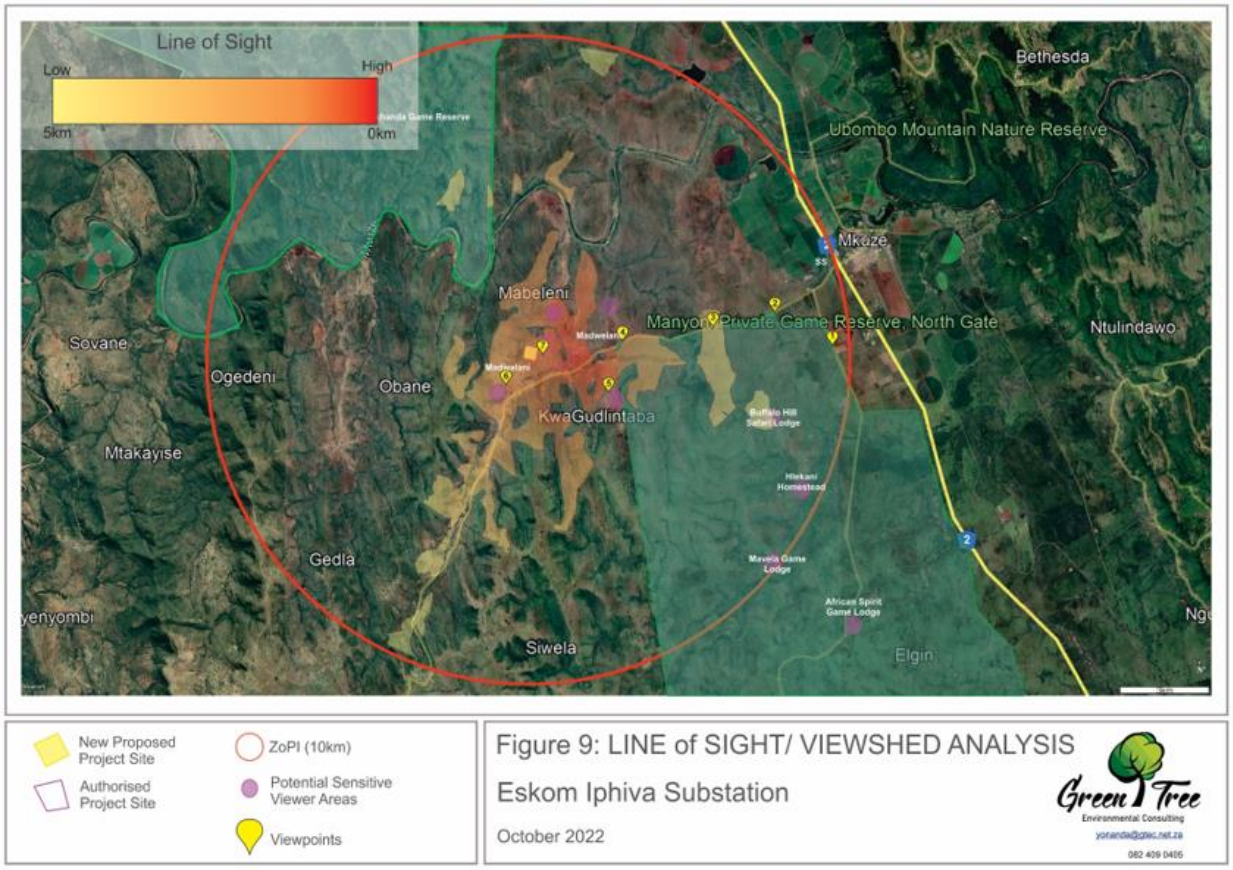

Figure 26: Line of sight/viewshed analysis

The study areas scenic quality has been rated moderate within the context of the sub-region and sensitive viewing areas and landscape types identified and mapped indicating potential sensitivity to the proposed development within a 10 km radius of the project site (Zone of potential Influence).

8.5 NATIONAL WEB-BASED SCREENING TOOL

The National Web based Environmental Screening Tool is a geographically based web-enabled application which allows a proponent intending to submit an application for environmental authorisation in terms of the Environmental Impact Assessment (EIA) Regulations 2014, as amended to screen their proposed site for any environmental sensitivity.

According to the DFFE Screening Tool Report (attached in **Appendix G**), the following themes described in **Table 21** below are applicable to the proposed development:

Table 21: DFFE Screening Tool Environmental Sensitivity

Theme	Sensitivity	Comment
Agriculture Theme	High	The Agricultural Potential Impact Assessment undertaken by ECO SOIL in June 2018 is still applicable to the proposed site. The soils of the proposed site are marginal and disturbed.
Animal Species Theme	High	The Fauna and Flora Screening Assessment, as prepared by Digby Wells Environmental (March 2018) was verified and updated. Based on findings of a desktop and in-field survey the site is disturbed by rural housing, bush clearing or informal roads, with little natural habitat remaining. No faunal Species of Conservation of Concern (SCC) were recorded during the field investigations; however the Avifauna Impact Assessment (Digby Wells Environmental 2022) has recorded an IUCN and Red Listed avifaunal species (namely White-backed Vulture (CR), Bateleur (EN) and Tawny Eagle (VU)) approximately 12 km south of the site resulting into the high sensitivity rating.
Aquatic Biodiversity Theme	Low	The Fauna and Flora Screening Assessment (March 2018) and the Wetland Assessment (July 2018), as prepared by Digby Wells Environmental was verified and updated. Based on findings of a desktop and in-field survey the site is already heavily degraded and the wetland functionality, ecosystem service and importance and sensitivities are low.
Archaeological and Cultural Heritage Theme	Low	The Heritage Screening Assessment as prepared by Digby Wells Environmental (December 2017) was verified and updated.

Theme	Sensitivity	Comment
		Digby Wells assessed the proposed 1 km by 1 km study area within which the proposed substation, road and associated infrastructures will be located through a pre-disturbance survey. During this survey, ten additional heritage resources were identified. These include five burial grounds and graves and five archaeological findspots. The proposed study area has now been shifted to include a more suitable area for the proposed infrastructure.
Civil Aviation Theme	Medium	The Mkuze Airport is located approximately 12 km north-east from the site.
Defence Theme	Low	The entire site has a low sensitivity in terms of the defence theme. No further specialist study is required.
Palaeontology Theme	Very High	The Heritage Screening Assessment as prepared by Digby Wells Environmental (December 2017) was verified and updated. Digby Wells assessed the proposed 1 km by 1 km study area within which the proposed substation, road and associated infrastructures will be located through a pre-disturbance survey. During this survey, ten additional heritage resources were identified. These include five burial grounds and graves and five archaeological findspots. The proposed study area has now been shifted to include a more suitable area for the proposed infrastructure.
Plant Species Theme	Medium	The Fauna and Flora Screening Assessment (March 2018) and the Wetland Assessment (July 2018), as prepared by Digby Wells Environmental was verified and updated. Six (6) floral Species of Conservation of Concern (SCC) were identified within the Project boundary or within its immediate surroundings. Four (4) provincially protected species under the KwaZulu-Natal Nature Conservation Management Amendment Act of 1999 (Act No. 5 of 1999), namely Crinum macowanii, Ammocharis coranica, Aloe marlothii and Aloe parvibracteata were recorded in various locations. Additionally, two (2) nationally protected tree species under the National Forestry Act of 1998 (Act No. 84 of 1998), namely

Theme	Sensitivity	Comment
		Sclerocarya birrea subsp caffra and Spirostachys africana were recorded.
Terrestrial Biodiversity Theme	Very High	The Fauna and Flora Screening Assessment (March 2018) and the Wetland Assessment (July 2018), as prepared by Digby Wells Environmental was verified and updated. Six (6) floral Species of Conservation of Concern (SCC) were identified within the Project boundary or within its immediate surroundings. Four (4) provincially protected species under the KwaZulu-Natal Nature Conservation Management Amendment Act of 1999 (Act No. 5 of 1999), namely Crinum macowanii, Ammocharis coranica, Aloe marlothii and Aloe parvibracteata were recorded in various locations. Additionally, two (2) nationally protected tree species under the National Forestry Act of 1998 (Act No. 84 of 1998), namely Sclerocarya birrea subsp caffra and Spirostachys africana were recorded.

9. IMPACT ASSESSMENT

This section aims to rate the significance of the identified potential impacts pre-mitigation and post-mitigation. The potential impacts identified in this section are a result of both the environment in which the proposed project activities take place, as well as the actual activities. The potential impacts are discussed per aspect and per each phase of the Project, i.e., the Construction Phase, Operational and Rehabilitation/Closure Phases, where applicable.

The Impact Assessment considered both direct and indirect impacts. In accordance with the mitigation hierarchy, the preferred mitigatory measure is to avoid impacts by considering alternative options in project location, sitting, scale, layout, technology and phasing to avoid impacts. The aim of the Impact Assessment is to strive to avoid damage to, or loss of, ecosystems and services that they provide, and where they cannot be avoided, to reduce and mitigate these impacts. Offsets to compensate for the loss of habitat are regarded as a last resort after all efforts have been made to avoid, reduce and mitigate the impacts (Department of Environmental Affairs, Department of Mineral Resources, Chamber of Mines, South African Mining and Biodiversity Forum, & South African National Biodiversity Institute, 2013).

Rating System Used to Classify Impacts

The rating system is applied to the potential impact on the receiving environment and includes an objective evaluation of the possible mitigation of the impact. Impacts have been consolidated into one (1) rating. In assessing the significance of each issue, the following criteria (including an allocated point system) is used:

Rating	Intensity/Replicability		Extent	Duration/Reversibility	Probability
	Negative Impacts (Nature = -1)	**Positive Impacts (Nature = +1)**			
7	**Irreplaceable loss** or damage to biological or physical resources or **highly sensitive** environments. Irreplaceable damage to **highly sensitive** cultural/social resources.	Noticeable, on-going natural and/or social benefits which have improved the overall conditions of the baseline.	International The effect will occur across international borders.	Permanent: The impact is irreversible, even with management, and will remain after the life of the Project.	Definite: There are sound scientific reasons to expect that the impact will definitely occur. >80% probability.
6	**Irreplaceable loss** or damage to biological or physical resources or **moderate to highly** sensitive environments. Irreplaceable damage to cultural/social resources of **moderate to highly** sensitivity.	Great improvement to the overall conditions of a large percentage of the baseline.	National Will affect the entire country.	Beyond Project Life: The impact will remain for some time after the life of the Project and is potentially irreversible even with management.	Almost Certain/Highly Probable: It is most likely that the impact will occur. > 65 but < 80% probability.
5	**Serious loss** and/or damage to physical or biological resources or **highly sensitive** environments, limiting ecosystem function. Very serious widespread social impacts. Irreparable damage to highly valued items.	On-going and widespread benefits to local communities and natural features of the landscape.	Province/Regio Will affect the entire province or region.	Project Life (> 15 years): The impact will cease after the operational life span of the Project and can be reversed with sufficient management.	Likely: The impact may occur. < 65% probability.

Rating	Intensity/Replicability		Extent	Duration/Reversibility	Probability
	Negative Impacts (Nature = -1)	**Positive Impacts (Nature = +1)**			
4	**Serious loss** and/or damage to physical or biological resources or **moderately sensitive** environments, limiting ecosystem function. On-going serious social issues. Significant damage to structures/items of cultural significance.	Average to intense natural and/or social benefits to some elements of the baseline.	Municipal Area Will affect the whole municipal area.	Long Term: 6-15 years and impact can be reversed with management.	Probable: Has occurred here or elsewhere and could therefore occur. < 50% probability.
3	**Moderate loss** and/or damage to biological or physical resources of **low to moderately** sensitive environments and, limiting ecosystem function. On-going social issues. Damage to items of cultural significance.	Average, on-going positive benefits, not widespread but felt by some elements of the baseline.	Local Local including the site and its immediate surrounding area.	Medium Term: 1-5 years and impact can be reversed with minimal management.	Unlikely: Has not happened yet but could happen once in the lifetime of the Project, therefore there is a possibility that the impact will occur. < 25% probability.
2	**Minor loss and/or effects** to biological or physical resources or **low sensitive** environments, not affecting ecosystem functioning. Minor medium-term social impacts on local population. Mostly repairable. Cultural functions and processes not affected.	Low positive impacts experience by a small percentage of the baseline.	Limited Limited extending only as far as the development site area.	Short Term: Less than 1 year and is reversible.	Rare/Improbable: Conceivable, but only in extreme circumstances. The possibility of the impact materialising is very low as a result of design, historic experience or implementation of adequate mitigation measures. < 10% probability.

Rating	Intensity/Replicability		Extent	Duration/Reversibility	Probability
	Negative Impacts (Nature = -1)	Positive Impacts (Nature = +1)			
1	**Minimal to no loss** and/or effect to biological or physical resources, not affecting ecosystem functioning. Minimal social impacts, low-level repairable damage to commonplace structures.	Some low-level natural and/or social benefits felt by a very small percentage of the baseline.	Very Limited/Isolated Limited to specific isolated parts of the site.	Immediate: Less than 1 month and is completely reversible without management.	Highly Unlikely/None: Expected never to happen. < 1% probability.

Significance rating

Score	Description	Rating
109 to 147	A very beneficial impact that may be sufficient by itself to justify implementation of the Project. The impact may result in permanent positive change.	Major (positive) (+)
73 to 108	A beneficial impact which may help to justify the implementation of the Project. These impacts would be considered by society as constituting a major and usually a long-term positive change to the (natural and/or social) environment.	Moderate (positive) (+)
36 to 72	A positive impact. These impacts will usually result in positive medium to long-term effect on the natural and/or social environment.	Minor (positive) (+)
3 to 35	A small positive impact. The impact will result in medium to short term effects on the natural and/or social environment.	Negligible (positive) (+)
-3 to -35	An acceptable negative impact for which mitigation is desirable. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved. These impacts will result in negative medium to short term effects on the natural and/or social environment.	Negligible (negative) (-)
-36 to -72	A minor negative impact requires mitigation. The impact is insufficient by itself to prevent the implementation of the Project but which in conjunction with other impacts may prevent its implementation. These impacts will usually result in negative medium to long-term effect on the natural and/or social environment.	Minor (negative) (-)

Score	Description	Rating
-73 to -108	A moderate negative impact may prevent the implementation of the Project. These impacts would be considered as constituting a major and usually a long-term change to the (natural and/or social) environment and result in severe changes.	Moderate (negative) (-)
-109 to -147	A major negative impact may be sufficient by itself to prevent implementation of the Project. The impact may result in permanent change. Very often these impacts are immitigable and usually result in very severe effects. The impacts are likely to be irreversible and/or irreplaceable.	Major (negative) (-)

The potential impacts for the identified environmental aspects have been assessed and mitigation measures identified below.

9.1.1 Construction Phase

Wetland

PRE-MITIGATION							
Project Activity	**Impact**	**Duration/ Reversibility**	**Extent**	**Intensity/ Replicability**	**Probability**	**Nature**	**Significance**
Vegetation clearing.	• Increased runoff and creation of preferential flow paths through erosion. • Sedimentation and increased sediment load into the adjacent freshwater ecosystems. • Potential spillage of hydrocarbons such as oils, fuels and grease, entering the surface and groundwater and entering the freshwater ecosystems. • Alien Invasive Plant (AIP) infestation due to disturbance; and • Soil compaction from moving machinery leads to decreased soil depth for root/water	Permanent (7)	Limited (2)	Minimal Loss (1)	Rare (2)	Negative	Negligible (-20)
Surface clearing, levelling and terracing.		Permanent (7)	Limited (2)	Minimal Loss (1)	Minimal Loss (1)	Negative	Negligible (-20)
Laying of concrete foundations and other applicable works such as storm water drainage pipes, slabs, bund walls, masts, control room and storage facilities**.**		Permanent (7)	Very Limited (1)	Minimal Loss (1)	Rare (2)	Negative	Negligible (-18)
Erection of steelworks.		Short Term (2)	Very Limited (1)	Minimal Loss (1)	Rare (2)	Negative	Negligible (-8)
Delivery and installations of transformers.		Short Term (2)	Very Limited (1)	Minimal Loss (1)	Rare (2)	Negative	Negligible (-8)
Construction of access roads		Permanent (7)	Limited (2)	Moderate Loss (3)	Unlikely (3)	Negative	Minor (-36)

PRE-MITIGATION							
Project Activity	**Impact**	**Duration/ Reversibility**	**Extent**	**Intensity/ Replicability**	**Probability**	**Nature**	**Significance**
	penetration and increased runoff from hardened surfaces.						

MITIGATION

- Environmental Practitioner to be present during vegetation clearing to prevent unnecessary clearing of extensive areas not part of the direct footprint area.
- Limit vegetation removal activities to the infrastructure footprint area only, where removed or damaged vegetation areas should be revegetated as soon as possible with a suitable mix of plant species as determined by a qualified botanist.
- No vehicles or heavy machinery should be allowed to drive indiscriminately within any wetland areas. All vehicles must remain on demarcated roads and within the footprint and access roads.
- Bare land surfaces must be vegetated to limit erosion from surface runoff associated with infrastructure areas. Revegetate disturbed areas immediately after construction.
- At areas where road crossings have been designed, these roads should cross wetland or river features at the narrowest point and a 90-degree angle with suitable drainage designed into the relevant bridge/culvert crossing.
- Ensure a soil management programme is implemented and maintained to minimize erosion and sedimentation.
- Stripped topsoil stockpiles and bare land surfaces must be vegetated to limit erosion from surface runoff associated with infrastructure areas. Revegetate disturbed areas immediately after construction.
- All areas of increased ecological sensitivity should be designated as “No-Go” areas and be off-limits to all unauthorised vehicles and personnel.
- Implement a Storm Water Management Plan (SWMP).
- Implement concurrent rehabilitation to prevent and minimise impacts to the freshwater systems.

POST MITIGATION							
Project Activity	**Impact**	**Duration/ Reversibility**	**Extent**	**Intensity/ Replicability**	**Probability**	**Nature**	**Significance**
Vegetation clearing.	• Increased runoff and creation of preferential flow paths through	Permanent (7)	Very Limited (1)	Minimal Loss (1)	Highly Unlikely (1)	Negative	Negligible (-9)
Surface clearing, levelling and		Long Term (4)	Very Limited	Minimal Loss (1)	Highly Unlikely (1)	Negative	Negligible (-6)

POST MITIGATION							
Project Activity	**Impact**	**Duration/ Reversibility**	**Extent**	**Intensity/ Replicability**	**Probability**	**Nature**	**Significance**
terracing.	erosion. • Sedimentation and increased sediment load into the adjacent freshwater ecosystems. • Potential spillage of hydrocarbons such as oils, fuels and grease, entering the surface and groundwater and entering the freshwater ecosystems. • Alien Invasive Plant (AIP) infestation due to disturbance; and • Soil compaction from moving machinery leads to decreased soil depth for root/water penetration and increased runoff from hardened surfaces.		(1)				
Laying of concrete foundations and other applicable works such as storm water drainage pipes, slabs, bund walls, control room and storage facilities**.**		Long Term (4)	Very Limited (1)	Minimal Loss (1)	Highly Unlikely (1)	Negative	Negligible (-6)
Erection of steelworks.		Short Term (2)	Very Limited (1)	Minimal Loss (1)	Highly Unlikely (1)	Negative	Negligible (-4)
Delivery and installations of transformers.		Short Term (2)	Very Limited (1)	Minimal Loss (1)	Highly Unlikely (1)	Negative	Negligible (-4)
Upgrade of access roads, and where applicable, water crossings.		Permanent (7)	Very Limited (1	Minor Loss (2)	Rare (2)	Negative	Negligible (-10)

Terrestrial

Activity, and Interaction: Vegetation clearing and infrastructure construction and loss of habitat for fauna.			
• Direct loss of vegetation cover, biodiversity and habitats; • Alien invasive proliferation; • Loss of faunal habitat. • Increased risk of injury or mortality from collision with vehicles due to increased traffic. • Increased risk of illegal hunting, poaching, persecution or harvesting of fauna.			
PRE-MITIGATION			
Dimension	Rating	Motivation	Significance
Duration	Permanent (7)	A permanent and total loss of 33 ha of largely low sensitivity habitat will occur.	Moderate (negative) - 84
Extent	Limited (2)	Vegetation clearance and habitat loss is limited to the proposed substation area only	
Severity	Moderate Loss (3)	Majority of the area proposed for clearing is within already transformed habitat, yet floral SCC are present.	
Probability	Definite (7)	The clearing of the vegetation is definite	
Nature	Negative		

Mitigation measures

Loss of vegetation:

- Limit degradation and destruction of natural environment to designated Project area by keeping the footprint of the disturbed areas to the minimum and within designated areas only. Re-vegetate open areas to limit erosion, which will also aid in water infiltration and flood attenuation.
- Avoid other sensitive landscapes, such as wetland areas that were encountered on the site. See Digby Wells Wetland Impact Assessment 2022 for the delineation of the Hydro-Geomorphic (HGM) units.
- Manage nationally restricted AIP species by ensuring the removal of vegetation during construction and operation are controlled so that no open areas occur.

Loss of habitat:

- All construction vehicles should adhere to clearly defined and demarcated roads, no off-road driving should be allowed.
- All construction vehicles should adhere to a low-speed limit (30km/h) to avoid collisions with susceptible species.

- Night driving must be avoided where possible.
- Site access should be controlled, and no unauthorized persons should be allowed onto the site.
- All personnel should undergo an initial environmental induction with regards to fauna and in particular awareness about not harming or collecting species such as snakes or tortoises.
- The illegal collection, hunting or harvesting of animals at the site should be strictly forbidden.
- No animals such as dogs or cats to be allowed on site other than those of the landowners.
- Personnel should not be allowed to wander off the construction site.
- No open fires should be permitted outside of designated areas.
- Any fauna directly threatened by the construction activities should be removed to a safe location by the environmental control officer or other suitably qualified person.

Post-Mitigation			
Dimension	**Rating**	**Motivation**	**Significance**
Duration	**Permanent (7)**	Vegetation within the demarcated unit will be removed.	**Minor (negative) - 44**
Extent	**Limited (2)**	Interactions and impacts can be limited with mitigation measures	
Probability	**Probable (4)**	The area demarcated for clearing is already transformed, so no major losses of indigenous vegetation types.	
Nature	**Negative**	Habitats will be removed however the scale of the activity is small and can be easily mitigated to prevent negative impacts.	

Activity, and Interaction: Loss of SCC (protected species)			
• Loss of floral SCC			
PRE-MITIGATION			
Dimension	**Rating**	**Motivation**	**Significance**
Duration	Permanent (7)	A permanent and total loss of 33 ha of largely low sensitivity habitat will occur.	Moderate (negative) - 91
Extent	Limited (2)	Vegetation clearance and habitat loss is limited to the proposed substation	

		area only	
Severity	Serious Loss (4)	Majority of the area proposed for clearing is within already transformed habitat, yet floral SCC are present.	
Probability	Definite (7)	The clearing of the vegetation is definite	
Nature	Negative		

Mitigation measures

- Limit degradation and destruction of natural environment to designated Project area by keeping the footprint of the disturbed areas to the minimum and within designated areas only. Re-vegetate open areas to limit erosion, which will also aid in water infiltration and flood attenuation. Avoid sensitive landscapes such as Riparian Vegetation. See Digby Wells Wetland Impact Assessment 2023, for HGM unit delineations.
- Applications for permits for removal of certain plants, where required by provincial authorities. If plant SSC are to be removed, they should be either translocated to a similar habitat to the donor site or relocated to a nursery, i.e. a Rescue and Relocation Plan should be implemented prior to construction.

Post-Mitigation			
Dimension	**Rating**	**Motivation**	**Significance**
Duration	**Permanent (7)**	The vegetation within the footprint will be lost and SCC will be removed.	**Moderate (negative) - 84**
Extent	**Limited (2)**	If contractors adhere to mitigation such as to limit the footprint of disturbance to only essential areas.	
Intensity	**Moderate loss (3)**	Mitigation can lessen the impact and relocation of SCC can offset the loss.	
Probability	**Definite (7)**	The are floral SCC within the proposed substation.	
Nature	**Negative**		

Avifauna

Activity, and Interaction: Vegetation clearing and infrastructure construction;			
• Direct loss of biodiversity and avian habitats. • Loss of potential avian SCC			
PRE-MITIGATION			
Dimension	**Rating**	**Motivation**	**Significance**

Duration	Permanent (7)	A permanent and total loss of 33 ha of largely low sensitivity habitat will occur.	Moderate (negative) - 77
Extent	Limited (2)	Vegetation clearance and habitat loss is limited to the proposed substation area only	
Severity	Serious Loss (4)	Majority of the area proposed for clearing is within already transformed habitat	
Probability	Definite (7)	The clearing of the vegetation is definite	
Nature	Negative		

- A suitable qualified avifauna specialist must undertake a walk through of the servitudes once the tower positions have been identified in order to determine the presence of any nesting sites of bird species of special concern within or in close proximity to the towers.
- The avifauna specialist should identify the stretches of the powerlines that require bird diverters. These must be added to the profiles in the EMPr.
- Reflectors with LED lights are recommended particularly close to nesting sites and in areas in relatively close proximity to water or wetlands;
- Where powerlines are constructed in parallel, pylons should preferably be positioned so as to alternate with those of the existing power line (i.e. out- of-step) and not be placed opposite one another (in-step). This mitigation will increase the visibility of both sets of power lines to flying large raptors and the birds may then be in a better position to take timely collision avoidance action;
- Where the possibility or risk of a 'flash-over' occurs additional mitigation measures that increase the visibility of the powerline should be instituted.
- Ensure tower design and type is best for preventing the electrocution of birds and discourages the roosting of birds on the structures; and
- Suitable bird repelling structures (anti-roosting spikes) must be considered in the design, particularly for the cross arms of the tower structures in areas of heavy bird activity (such as wetlands and nesting grounds and vulture restaurants).

Post-Mitigation			
Dimension	**Rating**	**Motivation**	**Significance**
Duration	**Project Life (5)**	The potential for collisions and electrocution will be for the life of the project.	**Minor (negative) - 72**
Extent	**Limited (2)**	Bird interactions with substations can be limited with mitigation measures	
Intensity	**High (4)**	The home ranges of protected bird species coincide with this substation.	
Probability	**High (6)**	It is likely that loss of species due to collisions will occur.	
Nature	**Negative**		

Heritage

IMPACT DESCRIPTION: Direct impact to PEC7505-002, PEC7505-008 and PEC7505-009				
Dimension	**Rating**	**Motivation**		
PRE-MITIGATION				
Duration	Permanent (7)	Unmitigated change will result in permanent damage to the heritage resource.	Consequence: Extremely detrimental (-21)	Significance: Moderate – negative (-84)
Extent	International	Damage to these resources could potentially have an international effect in terms of reputational risk for Eskom, service providers and/or subcontractors working on the project. Next-of-Kin could potentially reside outside South Africa.		
Intensity x type of impact	Extremely high - negative (-7)	Destruction would constitute a major change to resource of Very High significance.		
Probability	Probable (4)	Given the location of these heritage resources in relation to the proposed Project footprint, it is possible that this risk will manifest during the construction phase.		
MITIGATION:				

The project related mitigation must aim to amend the project design to avoid the potential negative impact to heritage resources and implement a 30 m no-go buffer zone around these heritage resources. Digby Wells recommends a heritage practitioner or Environmental Control Officer (ECO) (or equivalent responsible person) be present at the time of vegetation clearing and excavation of land and installation of infrastructure occurs within a 50 m buffer of the identified heritage resources to ensure no damage occurs to these heritage resources.

Additionally, these heritage resources must be incorporated into an HSMP for implementation. Should Eskom have an existing HSMP, the affected heritage resources must be incorporated into the existing HSMP and be subject to the same requirements encapsulated therein.

Where Project design (or redesign) and *in situ* conservation is not feasible based on the Project design and layout requirements, heritage related mitigations must be employed. Heritage related mitigations will need to be undertaken in accordance with the requirements of the KZNARIA, NHRA and the associated regulations will be required. Such mitigations may include a Burial Grounds and Graves Consultation to assess whether a GRP is feasible. A GRP must be undertaken in accordance with:

- Section 39 of the KZNARIA and the KZNARIA Regulations (2018); and

• Section 36 of the NHRA and Chapter IX and XI of the NHRA Regulations. Digby Wells assumes that Project design amendment to include a buffer is the preferred alternative, and the post-mitigation impact assessment considers this mitigation strategy.				
POST-MITIGATION				
Duration	Beyond project life (6)	If the mitigation measures are put into place, specifically the *in situ* conservation and management of the resource through an HSMP, the benefits may continue after the Project is complete.	Consequence: Highly beneficial (14)	Significance: Minor – positive (70)
Extent	Local (3)	The proposed mitigation measures will apply to the specific heritage resources.		
Intensity x type of impact	High - positive (5)	*In situ* conservation and management would constitute a minor change to a resource of Very High significance.		
Probability	Likely (5)	Should Eskom implement the mitigations effectively, it is highly probable that the anticipated positive impact will manifest.		

Visual

Potential Visual Impact	**ENVIRONMENTAL SIGNIFICANCE**							
	Before mitigation				**After mitigation**			
	C	**x**	**P**	**SIG**	**C**	**x**	**P**	**SIG**
Proposed Project – Construction								
Alteration to the visual quality of the residents staying in the villages surrounding the study site, due to the physical presence and construction activities. The Project and its associated infrastructure will have a high impact on key residential areas such as the bordering villages. Mitigation measures are difficult to implement but good housekeeping measures would result in a reduction in impacts that could cause a nuisance, such as dust, proper waste collection and a clean and	M		H	**Medium**	M		H	**Medium**

neat site camp/office.								

9.1.2 Operation Phase

Wetland

PRE-MITIGATION							
Project Activity	**Impact**	**Duration/ Reversibility**	**Extent**	**Intensity/ Replicability**	**Probability**	**Nature**	**Significance**
Maintenance of substation and associated infrastructure (including the access road).	• Vehicle movement in the area, leading to soil compaction and increased runoff and erosion potential; and • Increased AIPs.	Project Life (5)	Limited (2)	Minimal Loss (1)	Rare (2)	Negative	Negligible (-16)

MITIGATION

- Ensure that sound environmental management is in place during the proposed operational phase.
- Ensure that as far as possible all operational activities take place outside of wetland/riparian areas and their associated buffers.
- Ensure that no incision and canalisation of the wetland features present takes place as a result of the proposed operational activities.
- All erosion noted within and in the vicinity of the area footprint should be remedied immediately and included as part of the ongoing rehabilitation plan.
- All soil compacted as a result of operational activities should be ripped and profiled.
- A suitable AIP control programme must be put in place so as to prevent further encroachment as a result of disturbance to the surrounding terrestrial zones.
- Permit only essential personnel within the buffers for all wetland features identified.
- All areas of increased ecological sensitivity should be designated as "No-Go" areas and be off limits to all unauthorised vehicles and personnel.
- No crossing of the wetland features and their associated buffers should take place and the substrate conditions of the wetlands and downstream stream connectivity must be maintained.
- No material may be dumped or stockpiled within any wetland areas in the vicinity of the proposed footprint.
- No vehicles or heavy machinery may be allowed to drive indiscriminately within any wetland areas and their associated 500m regulated area. All vehicles must remain on demarcated roads and within the Project area footprint.
- All vehicles must be regularly inspected for leaks and re-fueling must take place on a sealed surface area to prevent ingress of hydrocarbons into topsoil.
- All spills should be immediately cleaned up and treated accordingly.
- Appropriate sanitary facilities must be provided for the duration of the operational activities and all waste must be removed to an appropriate waste facility.

POST-MITIGATION							
Project Activity	**Impact**	**Duration/ Reversibility**	**Extent**	**Intensity/ Replicability**	**Probability**	**Nature**	**Significance**
Maintenance of substation.	• Vehicle movement in the area, leading to soil compaction and increased runoff and erosion potential; and • Increased AIPs.	Long Term (4)	Very Limited (1)	Minimal Loss (1)	Highly Unlikely (1)	Negative	Negligible (-6)

Terrestrial

Project Activity	Impact	Duration/ Reversibility	Extent	Intensity/ Replicability	Probability	Nature	Significance
N/A							

Avifauna

Activity, and Interaction: Disturbance During Operation;

- Displacement and disturbance of avian species due to habitat transformation of the substation.
- Maintenance and activity within the substation area.

PRE-MITIGATION

Dimension	Rating	Motivation	Significance
Duration	Medium term (3)	A permanent and total loss of 33 ha of habitat will occur.	Negligible (negative) - 28
Extent	Limited (2)	Disturbances are only limited to the proposed substation area only	
Severity	Minor Loss (2)	Majority of the area proposed for clearing is within already transformed habitat	
Probability	Probable (4)	The transformation of the habitat is definite	
Nature	Negative		

Mitigation

- If birds are nesting on the infrastructure of the facility and cannot be tolerated due to operational risks of fire, electrical short, soiling of panels or other problems, birds must be prevented from accessing nesting sites by using mesh or other manner of excluding them. Birds must not be shot, poisoned or harmed as this is not an effective control method and has negative ecological consequences. Birds already with eggs and chicks must be allowed to fledge their chicks before nests are removed.
- The clearing of vegetation should be limited to areas only essential for the development.
- If there are any persistent problems with avifauna, then an avifaunal specialist should be consulted for advice on further mitigation.
- Working staff must stay within the development area and movement outside these areas especially into avian habitats must be restricted.
- Driving must take place on existing and new access roads and a speed limit of 30km/h must be implemented on all roads running through the project site during the operation phase.

Post-Mitigation

Dimension	Rating	Motivation		Significance
Duration	Short Term (2)	The potential for collisions and		**Negligible (negative) - 24**

		electrocution will be for the life of the project.	
Extent	Limited (2)	Bird/ power station interactions can be limited with mitigation measures	
Intensity	Moderate (3)	The home ranges of protected bird species coincide with this substation.	
Probability	Unlikely (3)	It is likely that loss of species due to collisions will occur.	
Nature	Negative		

Activity, and Interaction: Loss of avian SCC			
• Loss of potential avian SCC due to collisions with overhead powerlines and electrocutions.			
PRE-MITIGATION			
Dimension	Rating	**Motivation**	**Significance**
Duration	Project life (5)	Can occur long term (>15 yrs) may be reversed through mitigation.	Moderate (negative) - 70
Extent	Local (3)	Impact from the substation and powerlines is localised in the area.	
Severity	Significant (6)	There is a risk for SCC collisions	
Probability	Likely (5)	The is a high probability that mortalities may occur (<65%)	
Nature	Negative		
Mitigation • A “Bird Friendly” structure, with a bird perch (as per standard Eskom guidelines) must be used for the mast infrastructure. • All relevant perching surfaces should be fitted with bird guards and perch guards as deterrents. • Installation of artificial bird space perches and nesting platforms, at a safe distance from energised components. • Monitoring of the powerlines to detect any faults in the deterrent mechanisms as well as monitoring potential mortality rates of birds.			
Post-Mitigation			
Dimension	**Rating**	**Motivation**	**Significance**
Duration	Project Life (5)	The potential for collisions and electrocution will be for the life of the project.	Negligible (negative) - 30
Extent	Limited (2)	Bird/ power station interactions can be limited with mitigation measures	

Intensity	Moderate (3)	The home ranges of protected bird species coincide with this substation.	
Probability	Unlikely (3)	It is likely that loss of species due to collisions will occur.	
Nature	Negative		

Heritage

Project Activity	Impact	Duration/ Reversibility	Extent	Intensity/ Replicability	Probability	Nature	Significance
N/A							

Visual

Potential Visual Impact	ENVIRONMENTAL SIGNIFICANCE							
	Before mitigation				After mitigation			
	C	x	P	SIG	C	x	P	SIG
Proposed Project – Construction								
Alteration to the visual quality of the residents staying in the villages surrounding the study site, due to the physical presence of the substation. Mitigation measures are possible but will not be able to hide/screen the proposed activities completely. Although mitigation is possible it will be expensive and it should be remembered that the upper levels of Project structures break the horizon, which makes it more visible. The project will be bordering a residential area (villages) and will therefore be intrusive for residents from that villages.	M		H	Medium	M		H	Medium

9.1.3 Decommission/Rehabilitation Phase

Decommissioning can take many, and there is no decision on this, at this stage, since the project is still at pre-construction. When decommissioning becomes due, Eskom will ascertain the scope and undertake appropriate permitting processes.

Wetland

PRE-MITIGATION							
Project Activity	**Impact**	**Duration/ Reversibility**	**Extent**	**Intensity/ Replicability**	**Probability**	**Nature**	**Significance**
Rehabilitation around areas disturbed from construction activities.	Negative Impacts: • Vehicle movement in the area, leading to soil compaction and increased runoff and erosion potential; and • Increased AIPs. Positive Impacts: • Increased natural flow pathways; • Increase vegetation cover; • Remediation of potentially contaminated wetlands; and • Reducing the risk of erosion, sedimentation and loss of the soil resource.	Medium Term (3)	Limited (2)	Minimal Loss (1)	Rare (2)	Negative	Negligible (-12)
Vegetation management around substation.		Project Life (5)	Limited (2)	Minimal Loss (1)	Rare (2)	Negative	Negligible (-16)
MITIGATION							

- Wetland monitoring must be carried out during both the construction and rehabilitation phases to ensure no unnecessary impacts to wetlands takes place. Monitoring should take place on an annual basis during the summer/wet season and carried out by an independent consultant for the duration of the rehabilitation phase. Monitoring should continue to take place every two years until the systems are considered stable.
- Wetlands and their associated 100 m buffer, to be clearly demarcated and avoided.
- An AIP management plan to be implemented and managed for the life of the proposed rehabilitation phase of the Project.
- As much vegetation growth as possible should be promoted within the proposed development area during all phases. In order to protect soils and vegetation, clearance should be kept to a minimum as the biomass in the area is not very high and so therefore plants will not grow quickly.
- All areas where active erosion is observed should be ripped, re-profiled and seeded with indigenous grasses.
- Preventative measures such as hessian sheeting should be used in steep re-seeded areas where high erosion potentials exist.
- No vehicles or heavy machinery may be allowed to drive indiscriminately within any wetland areas and their associated 500m regulated area. All vehicles must remain on demarcated roads and within the project area footprint.
- All vehicles must be regularly inspected for leaks and re-fueling must take place on a sealed surface area to prevent ingress of hydrocarbons into topsoil.
- All spills should be immediately cleaned up and treated accordingly.

Terrestrial

Activity and Interaction:

- Impact Description:
- AIP establishment and proliferation.
- Faunal causalities; and
- Loss of natural vegetation**.**

Prior Mitigation

Dimension	Rating	Motivation	Significance
Duration	4	Impacts can be managed during the Operation Phase.	Minor (negative) – 55
Extent	3	Impacts could extend beyond the site	
Intensity	4	The spread of AIPs and death of animals can lead to the loss of important species and lower ecosystem function.	
Probability	5	These impacts have been observed in other cases	
Nature	Negative	Negative impact (-)	

Mitigation measures

- Enforce health and safety protocols, such as speed limits, to minimise faunal casualties;
- Prohibit heavy vehicles or machinery from driving in undisturbed vegetation units. All vehicles must remain on demarcated roads within the Project footprint;
- Prohibit any staff from driving at night;
- Rehabilitate disturbed areas concurrently to minimise AIP proliferation and erosion;
- Restrict the footprint of the Project Area to essential areas from a design perspective; and
- Vegetate bare land surfaces to limit erosion from surface runoff associated with infrastructure areas. Revegetate disturbed areas immediately after construction.

Post-Mitigation

Dimension	Rating	Motivation	Significance
Duration	2	The impact will occur on a small scale, specifically during rehabilitation and monitoring.	Negligible (negative) - 28
Extent	1	The impact is limited only to specific areas, provided that mitigation measures are implemented.	
Intensity	2	Minor loss, and/or effects to biological or physical resources not affecting ecosystem functioning.	
Probability	4	There is a probability that the impact will occur if mitigation measures are not implemented.	
Nature	Negative	Negative impact (-)	

Rehabilitation of disturbed areas

Impact Description: Change in vegetation community and the faunal and floral diversity of the area.

Prior Mitigation

Dimension	Rating	Motivation	Significance
Duration	7	Impacts would be indefinite.	Minor (negative) – 50
Extent	2	Impacts would be limited to the immediate surroundings.	
Intensity	3	Erosion and the use of wrong plants could harm communities.	
Probability	5	These impacts have been observed in other cases	
Nature	Negative	Negative impact (-)	
Mitigation measures			
• Prohibit any disturbance of areas being rehabilitated; • Implement AIP monitoring and removal; and • Use plant species that are indigenous to the vegetation communities of the Project Area and that were found there before the construction process.			
Post-Mitigation			
Dimension	**Rating**	**Motivation**	**Significance**
Duration	5	Vegetation communities may return to their original state over time should mitigation measures be implemented.	Minor (negative) -36
Extent	2	The impact will be limited to the site.	
Intensity	2	Changes in the vegetation community will be minor if mitigation measures are implemented.	
Probability	4	There is a <50% probability that rehabilitation will be successful	
Nature	Negative	Negative impact (-)	

Avifauna

Project Activity	Impact	Duration/ Reversibility	Extent	Intensity/ Replicability	Probability	Nature	Significance
N/A							

Heritage

Project Activity	Impact	Duration/ Reversibility	Extent	Intensity/ Replicability	Probability	Nature	Significance
N/A							

Visual

Project Activity	Impact	Duration/ Reversibility	Extent	Intensity/ Replicability	Probability	Nature	Significance
N/A							

9.1.4 Cumulative Phase

Wetland

Project Activity	Impact	Duration/ Reversibility	Extent	Intensity/ Replicability	Probability	Nature	Significance
N/A							

Terrestrial

Project Activity	Impact	Duration/ Reversibility	Extent	Intensity/ Replicability	Probability	Nature	Significance
N/A							

Avifauna

Project Activity	Impact	Duration/ Reversibility	Extent	Intensity/ Replicability	Probability	Nature	Significance
N/A							

Heritage

Type	Cumulative Impact	Direction of Impact	Extent of Impact

Type	Cumulative Impact	Direction of Impact	Extent of Impact
Space-crowding	The proposed infrastructure will add to the existing infrastructure associated with activities characterising the area immediately surrounding the proposed Project area and further afield. This installation of this infrastructure will result in a loss of the area within which heritage resources can exist. The area earmarked for the proposed infrastructure does, however, occur within an area approved for mining activities.	Negative	Local Cultural Heritage Landscape

Visual

Project Activity	Impact	Duration/ Reversibility	Extent	Intensity/ Replicability	Probability	Nature	Significance
The construction of the Iphiva substation will have a negative impact on the visual quality of the study area. The substation forms part of the Eskom Northern Kwa-Zulu Natal Strengthening Project and will therefore contribute to the negative impact of the overall Eskom Project on the landscape aesthetics of the area.							

10. CUMULATIVE

Cumulative effects are commonly understood to be impacts from different projects that combine to result in significant change in an area, which could be larger than the sum of all the individual impacts. The assessment of cumulative effects therefore needs to consider all similar projects within a 35 km radius that have received an EA or are in process at the time of starting the environmental impact process, as well as the proposed Iphiva Substation.

SiVEST undertook every effort to obtain the information (including specialist studies, BA / EIA / Scoping and EMPr Reports) for the surrounding developments, however, many of the documents are not currently publicly available to download. The information that could be obtained for the surrounding planned Electricity Grid Infrastructures (EGI) developments was taken into account as part of the cumulative impact assessment. This will be further assessed in the EIA phase.

The EGI developments that were considered are indicated in the figure below:

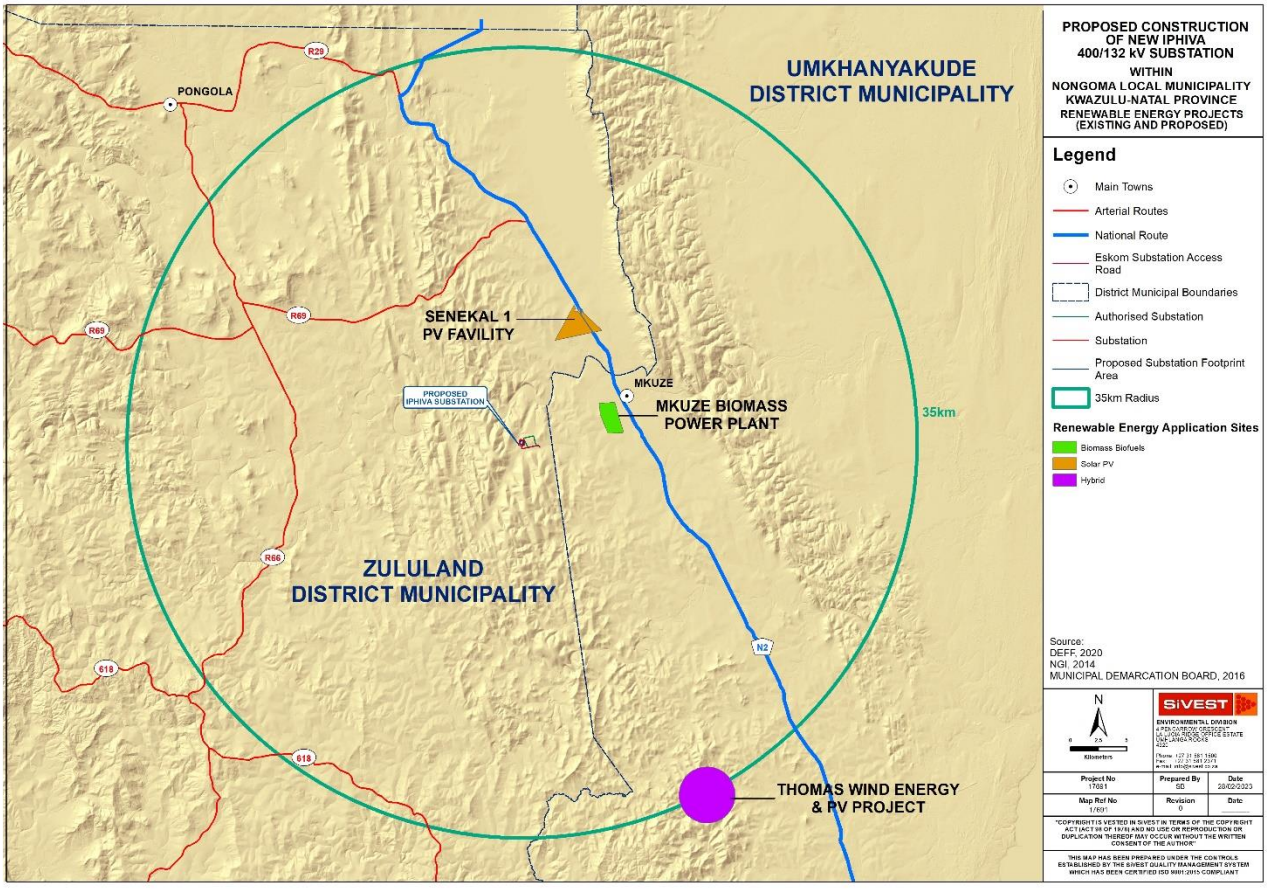

Figure 27: The EGI developments within a 35km radius around the proposed Iphiva Substation

11. ENVIRONMENTAL IMPACT STATEMENT

Eskom Holdings SOC Ltd is proposing to construct the 400/132kV substation and associated infrastructure. The overall objective of the proposed development is to strengthen the supply of electricity in northern KwaZulu-Natal (KZN). The northern KZN network is currently fed at 132 kV by the Normandie and Impala Main Transmission Substations. The major load centres are Pongola and the Makhathini Flats. The Normandie Substation is situated approximately 80km northwest of Pongola and the Impala Substation is situated approximately 180 km south of Makhathini Flats. High voltage drops are experienced in the 132 kV network and the voltages are approaching unacceptable low voltage levels as the demand increases. Contingencies on the main 132 kV supplies also lead to thermal overloading of the remaining network. A layout of the development and the environmental site sensitivities is included below:

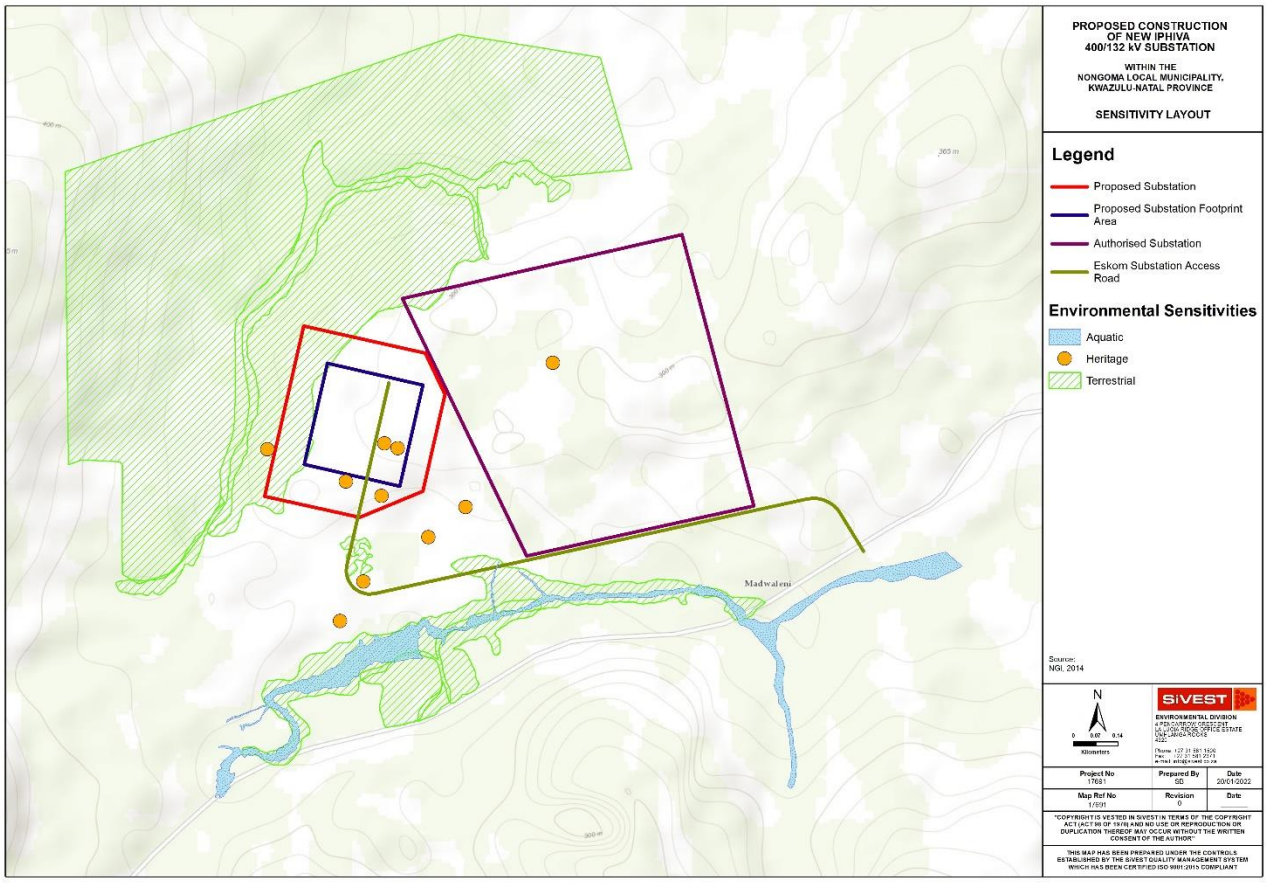

Figure 28: Final proposed layout with site sensitivities

The specialist assessments were conducted to address the potential impacts relating to the proposed development in order to ascertain the level of each identified impact, as well as mitigation measures which may be required.

The **Wetland assessment** (refer to **Appendix D**) concluded that no wetlands were identified within the direct footprint of the infrastructure (Project Area), however, artificial wetlands (dam and drain) and four wetland Hydrogeomorphic (HGM) units were identified within the 500 m regulated area of the Project Area (Area of Influence (AoI)).
The dam is however not connected to a natural watercourse and fills up via re-directed surface runoff using an artificial drain and precipitation. The dam dries up in the dry season. The dam is an artificial wetland system/watercourse, however, has the same legal status as natural wetland systems/water courses in South Africa. The wetlands were categorised into the following HGM units:

- Two Unchannelled Valley Bottom Wetlands (UVB) with a distinct Riparian Zone.
- Two Channelled Valley Bottom Wetlands (CVB) with a distinct Riparian Zone; and
- Artificial wetlands, including a dam and drain.

The natural wetlands cover approximately 9.96 hectares (ha) of the AoI, and the Artificial wet areas (dam and drain) cover approximately 0.6 ha. The infrastructure is not proposed within any delineated wetland/watercourse, however, falls within the 500 meters (m) regulated area.

The overall impacts of the Project on the natural wetlands within the AoI were determined to be minor to negligible prior mitigation and largely negligible significance following the implementation of the proposed mitigation measures. It is the opinion of the specialist that should the proposed mitigation measures and monitoring programme be implemented correctly; the impacts on the natural wetlands will be insignificant. The following actions are recommended to reduce adverse effects on the wetlands within the proposed Project Area:

- Limit infrastructure within wetlands as far as practically possible to avoid and minimise impacts on adjacent and downstream wetlands (e.g., sedimentation, erosion and contamination);
- Establish at least a 15 m buffer around the CVB wetlands and a 16 m buffer around the UVB wetlands to protect wetland areas from infrastructure that may lead to erosion and sedimentation of the receiving watercourses;
- Rehabilitate impacted wetlands within the AoI (only when impacted by the proposed activities);
- Monitor and mitigate wetlands affected by the activities;
- Ensure rehabilitation with special attention to reshaping the impacted areas, re-vegetating and mitigating potential contamination;
- A protective barrier/ no-go buffer against cattle should be implemented around the rehabilitated areas, during the rehabilitation phase only, to ensure the re-establishment of vegetation as soon as possible to maintain the wetland functionality and prevent erosion, sedimentation and creation of preferential flow paths;
- Promote the natural diffuse flow of water through the landscape from the infrastructure areas to prevent erosion (or channelisation), sedimentation and formation of preferential flow paths;
- Implement the recommended monitoring program to detect impacts to the wetlands within the AoI early on and implement remediation/remedies as soon as impacts are observed; and
- Reduce the risk of erosion, compaction, and the creation of preferential flow paths by re-vegetating exposed areas, maintaining linear infrastructure and culverts and installing sediment traps and erosion berms.

The **Terrestrial assessment** (refer to **Appendix D**) concluded that the development footprint does overlap with ESAs, CBAs and NPAES Focus Areas, however, the proposed substation is situated in an area that has been

completely transformed. This means that the development would not compromise the ecological functioning or the long-term conservation value of the area. Vegetation types are not intact within the proposed substation footprint; however, the surrounding vegetation types are largely intact with very little prospect of long-term transformation through the current land-use practises, the species and habitats found within them are therefore fairly widespread and not unique to the Project site. The impact of the proposed substation is considered to be low and acceptable following mitigation. The following actions are recommended to reduce potential impacts to fauna and flora of the proposed Project area:

- The area must be screened before construction activities. If potential fauna SCC are recorded prior to construction, the faunal SCC species must be located and relocated, if possible, before the construction phase.
- The field survey recorded five (5) provincially protected and two (2) nationally protected flora species within the Project area and in its immediate surrounds. A Pre-screening assessment will need to take place prior to construction in order to map and quantify the protected flora that will require permits.
- It is recommended that a rescue and relocation of the flora and protected flora within the development footprint be undertaken. Where possible avoid large trees and replant the removed vegetation within the nearby vicinity of the area.
- Restriction of vehicle movement over sensitive areas to reduce degradation of untouched areas, if any.
- Ensure earth moving equipment contain no soil or vegetative material before entering the site as a means to prevent AIP sprawl.
- Minimise unnecessary removal of the natural vegetation cover outside the development footprint.
- After rehabilitation the area must be fenced, and animals (cattle and goats) should be kept off the area until the vegetation is self-sustaining and established.
- Creating biodiversity awareness around the surrounding local communities will help prevent further degradation of the habitat and the loss of flora SCC.

The **Avifauna assessment** (refer to **Appendix D**) concluded that no avian SCC were recorded within the Project boundary during the 2022/23 assessment however, three (3) species were recorded in close proximity to the proposed substation, namely Bateleur, White-back Vulture and Tawny Eagle recorded approximately 12 km south of the site. The proximity of the proposed substation in relation to the surrounding protected areas gives rise to one major concern regarding the bird community, the potential of bird collisions with sensitive raptors and other avian SCC. If the mitigation measures and recommendations are implemented throughout the project life correctly and timeously, there is no severe negative impacts anticipated for the development of this substation and its associated electrical components.

The **Heritage assessment** (refer to **Appendix D**) concluded that based on the understanding of the Project while considering the results of this assessment, Digby Wells does not object to the Project. The following actions are recommended to reduce potential identified impacts:

- Eskom must avoid impacts to PEC7505-002, PEC7505-008, PEC7505-009 and PEC7505-012 through Project design or redesign to avoid these heritage resources and implement a 30 m no-go buffer zone around these heritage resources.
- Eskom must appoint a suitably qualified heritage specialist to be present when any construction activities occur within 50 m of the identified heritage resources. Alternatively, an ECO (or similar responsible person) may complete this oversight to ensure that the heritage resources are not impacted.

- Where Project design amendments are not feasible, Eskom will need to embark on a consultation process to assess whether a GRP is feasible.
- Burial Grounds and Graves as well the identified agricultural plot (Living Cultural Heritage) occur within or adjacent to households and/or yards due to traditional practices of burying within properties. A social consultative process with communities is recommended to ensure where graves are present and where they will need to be relocated to avoid impact; and
- Eskom develop and implement a CFP as part of the EMP, if this has not been done as part of the previous process in support of the approved substation layout (and associated powerlines). If this document has been developed, it must be amended to include this Project.

The **Visual assessment** (refer to **Appendix D**) concluded that the are no objection to the project provided that mitigations measures are implemented.

12. ENVIRONMENTAL MANAGEMENT PROGRAMME AND CONDITIONS TO BE INCLUDED IN ENVIRONMENTAL AUTHORISATION

In accordance with Appendix 4 of the EIA Regulations, 2014 (as amended), an EMPr has been included within the EIA. The EMPr includes the impact management measures formulated by the various specialists and the recording of the proposed impact management outcomes for the development have also been included in the EMPr (**Appendix E**).

The EMPr provides 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. The relevant management plans have also been incorporated into the EMPr (where required), which will assist in this regard. Taking into account the potential negative and significant positive impacts that the proposed development could have on the biophysical and social environment, it is the opinion of the EAP that the proposed development should be authorised subject to the following conditions of authorisation:

All of the mitigation measures identified in this EIA Report must be made conditions of the authorisation.

- All feasible and practical mitigation measures recommended by the various specialists must be incorporated into the Final EMPr and implemented, where applicable.
- Where applicable, monitoring should be undertaken to evaluate the success of the mitigation measures recommended by the various specialists.
- The activity-specific construction EMPr must be adhered to.
- An independent Environmental Control Officer (ECO) must be appointed by the applicant to monitor the implementation of the construction EMP. The ECO should undertake regular site inspections and compile an environmental audit report.

13. FINAL PROPOSED ALTERNATIVE WHICH RESPONDS TO THE IMPACT MANAGEMENT MEASURES, AVOIDANCE, AND MITIGATION MEASURES IDENTIFIED THROUGH THE ASSESSMENT

The final proposed alternative is the layout that has been assessed in this report.

14. ASPECTS WHICH WERE CONDITIONAL TO THE FINDINGS OF THE ASSESSMENT EITHER BY THE EAP OR SPECIALIST WHICH ARE TO BE INCLUDED AS CONDITIONS OF AUTHORISATION

None identified.

15. UNCERTAINTIES, ASSUMPTIONS AND GAPS IN KNOWLEDGE

The assessment has been based by SiVEST on information sourced and provided by the Applicant, site visits conducted, specialist findings and the application of the SiVEST assessment criteria. The EAP is of the opinion that the assessment method applied is acceptable. SiVEST assumes that:

- All the information provided by the Applicant is accurate and unbiased.
- The available data, including Topocadastral maps, Orthophotographs, geological maps and Google Earth images, are reasonably accurate.
- All information contained in the specialist studies provided is accurate and unbiased.
- Refer to specialist studies for their specific assumptions and limitations.
- It is not always possible to involve all Interested and/or Affected Parties (I&APs) individually, however, every effort has/will be made to involve as many interested parties as possible. It is also assumed that individuals representing various associations or parties convey the necessary information to these associations / parties.

16. AUTHORISATION OF THE PROPOSED IPHIVA SUBSTATION

The layout for the Iphiva substation has been designed to avoid no-go features on site that have been identified through the various specialist studies that have been undertaken. No fatal flaws were identified by the specialists who have undertaken their respective assessment for the project. Whilst it is acknowledged that the project will result in negative impacts, these can be mitigated to acceptable levels.

Based on the findings of the specialist studies and this assessment and comments received during the public participation process, the EAP has no reason to recommend that the project not be authorised, provided that the mitigation measures are adhered to. The conditions to be included in the Environmental Authorisation for the construction phase are listed in the conclusion section below.

The environmental authorization should be valid for a period of 10 years.

17. EAP DECLARATION

The EAP declarations, CV's and qualifications for the EAP's responsible for the preparation of this report have been attached in **Appendix A**.

18. DEVIATIONS FROM THE APPROVED SCOPING REPORT

There are no deviations from the accepted Scoping Report. This EIA report has been prepared in line with the plan of study that was approved as part of the Scoping Report.

19. INFORMATION REQUIRED BY CA (IF APPLICABLE)

Currently n/a.

20. CONCLUSION

This EIA Report has covered activities and findings related to the scoping and EIA process for the proposed Iphiva Project. Professional experience, specialist knowledge, relevant literature and local knowledge of the area have all been used to identify the potential issues associated with the proposed project. No fatal flaws were identified during the EIA Phase. In conclusion, SiVEST, as the independent EAP, is therefore of the view that:

- The site location and project description can be authorised based on the findings of the suite of specialist assessments.
- A cumulative impact assessment of similar developments in the area was undertaken by the respective specialists. Based on their findings, the majority of the cumulative impacts associated with the proposed development will be low.
- Through the implementation of mitigation measures, together with adequate compliance monitoring, auditing and enforcement thereof by the appointed Environmental Control Officer (ECO) as well as the competent authority, the potential detrimental negative impacts associated with the proposed development can be mitigated to acceptable levels.

21. WAY FORWARD

The Draft Environmental Impact Assessment Report is currently being circulated for public participation for a period of 30 days (excluding public holidays) from **23rd June 2023** until **24th July 2023.**

All comments received will be responded to in a C&RR, which will be included prior to submission of the FEIAR to the decision-making authority, namely the DFFE. Comments received on the report will be taken into consideration, incorporated into the report (where applicable) and will be used when compiling the FEIAR.

Once the FEIAR has been submitted and the DFFE has acknowledged receipt thereof, a decision to either grant or refuse the EA for the proposed development will be made by the DFFE. In addition, once a decision

regarding the EA has been received from the DFFE, it will be made available to the public and all registered I&APs, stakeholders and OoS / authorities will be notified accordingly and provided details regarding the appeal process. The EIA process will thus come to an end once appeals (if any) have been dealt with adequately and the appeal process closes.

All I&APs and key stakeholders are invited to register as I&APs in order to be kept informed throughout the process. To register as an I&AP / stakeholder and/or to obtain additional information, please submit your name, contact details (telephone number, postal address and email address) and the interest which you have in the application to the below contact details:

Name: Margen Industrial Service
Contact Person: Moses Mahlangu
Email: delno@telkomsa.net
Phone: 013 656 1212

APPENDIX A:

EAP CV AND DECLARATION

APPENDIX B:
PROOF OF PUBLIC PARTICIPATION

APPENDIX C:

PHOTOGRAPHS

APPENDIX D:
SPECIALIST STUDIES

APPENDIX E:

EMPR

APPENDIX F:
MAPS

APPENDIX G:
SCREENING TOOL REPORT

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