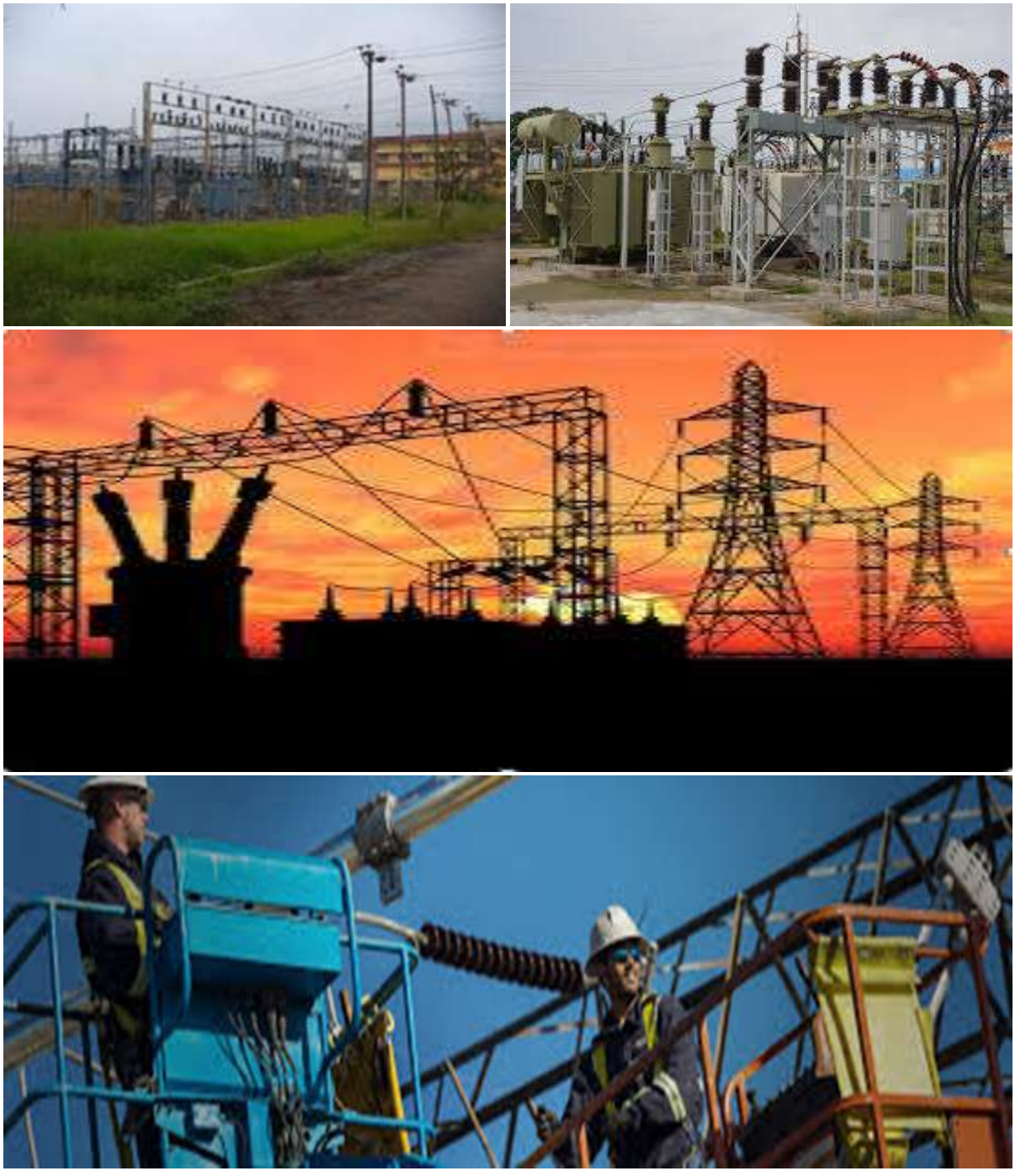
GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE DEVELOPMENT AND EXPANSION OF SUBSTATION INFRASTRUCTURE FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY



environmental affairs
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INTRODUCTION

1. Background

The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment (EIA) has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation (EA). The content of an EMPr must either contain the information set out in Appendix 4 of the Environmental Impact Assessment Regulations, 2014, as amended (EIA Regulations) or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including but not limited to the applicant and the competent authority (CA).

2. Purpose

This document constitutes a generic EMPr relevant to applications for the development or expansion of substation infrastructure for the transmission and distribution of electricity, and all listed and specified activities necessary for the realisation of such infrastructure.

3. Objective

The objective of this generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and impact management actions, which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of substation infrastructure for the transmission and distribution of electricity. The use of a generic EMPr is intended to reduce the need to prepare and review individual EMPrs for applications of a similar nature.

4. Scope

The scope of this generic EMPr applies to the development or expansion of substation infrastructure for the transmission and distribution of electricity requiring EA in terms of NEMA. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, as amended, and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, as amended, and all associated listed or specified activities necessary for the realization of such infrastructure.

5. Structure of this document

This document is structured in three parts with an Appendix as indicated in the table below:

Part	Section	Heading	Content
A		Provides general guidance and information and is **not legally binding**	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved generic EMPr template	Contains generally accepted impact management outcomes and impact management actions required for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of substation infrastructure for the transmission and distribution of electricity, which are presented in the form of a template that has been pre-approved. The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to commencement of the activity. Where an impact management outcome is not relevant, the words "not applicable" can be inserted in the template under the "responsible persons" column. Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template **is not required** to be submitted to the CA as once the generic EMPr is gazetted for implementation, it has been approved by the CA. To allow interested and affected parties access to the pre-approved EMPr template for consideration through the decision-making process, the EAP on behalf of the applicant /proponent must make the hard copy of this EMPr available at a public location and where the applicant has a website, the EMPr should also be made available on such publicly accessible website.
	2	Site specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA

Part	Section	Heading	Content
			will comply with the pre-approved generic EMPr template contained in Part B: Section 1, and understands that the impact management outcomes and impact management actions are **legally binding**. The preliminary infrastructure layout must be finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management outcomes and impact management actions have been either pre-approved or approved in terms of Part C. This section **must be** submitted to the CA together with the final BAR or EIAR. The information submitted to the CA will be considered to be incomplete should a signed copy of Part B: section 2 not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.
C		Site specific sensitivities/ attributes	If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr, to manage impacts, these specific impact management outcomes and impact management actions must be included in this section. These specific environmental attributes must be referenced spatially and impact management outcomes and impact management actions must be provided. These specific impact management outcomes and impact management actions must be presented in the format of the pre-approved EMPr template (Part B: section 1) This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if Part C is applicable to the site, it **is required** to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. Once

Part	Section	Heading	Content
			approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only **to additional** impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in Part B: section 1.
Appendix 1			Contains the method statements to be prepared prior to commencement of the activity. The method statements are **not required** to be submitted to the competent authority.

6. Completion of part B: section 1: the pre-approved generic EMPr template

The template is to be completed prior to commencement of the activity, by providing the following information for each environmental impact management action:

- For implementation
  - a 'responsible person',
  - a method for implementation,
  - a timeframe for implementation
- For monitoring
  - a responsible person
  - frequency
  - evidence of compliance.

The completed template must be signed and dated by the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must be signed and dated on each page by the holder of the EA. This template once signed and dated is legally binding. The holder of the EA will remain responsible for its implementation.

7. Amendments of the impact management outcomes and impact management actions

Once the activity has commenced, a holder of an EA may make amendments to the impact management outcomes and impact management actions in the following manner:

- Amendment of the impact management outcomes: in line with the process contemplated in Regulation 37 of the EIA Regulations; and
- Amendment of the impact management actions: in line with the process contemplated in Regulation 36 of the EIA Regulations.

8. Documents to be submitted as part of part B: section 2 site specific information and declaration

Part B: Section 2 has three distinct sub-sections. The first and third sub-sections are in a template format. Sub-section two requires a map to be produced.

Sub-section 1 contains the project name, the applicant's name and contact details, the site information, which includes coordinates of the property or farm in which the proposed substation infrastructure is proposed as well as the 21-digit Surveyor General code of each cadastral land parcel and, where available, the farm name.

Sub-section 2 is to be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout using the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g. threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features and within 50 m from the development footprint.

Sub-section 3 is the declaration that the applicant (s)/proponent (s) or holder of the EA in the case of a change of ownership must complete which confirms that the applicant/EA holder will comply with the pre-approved 'generic EMPr' template in Section 1 and understands that the impact management outcomes and impact management actions are legally binding.

(a) Amendments to Part B: Section 2 – site specific information and declaration

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant/proponent and submitted with the application for an amendment of the EA in terms of regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted as part of such an application for an amendment to an EA will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

PART A – GENERAL INFORMATION

1. DEFINITIONS

In this EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA Regulations has that meaning, and unless the context requires otherwise –

"clearing" means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified;

"construction camp" is the area designated for key construction infrastructure and services, including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;

"contractor" - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described.

"**hazardous substance**" is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995;

"method statement" means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and ECO. The method statement must set out the equipment, materials, labour and method(s) the Contractor proposes using to carry out an activity identified by the Project Manager when requesting the Method Statement. This must be done in such detail that the Project Manager and ECO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification;

The method statement must cover as a minimum applicable details with regard to:

(i) Construction procedures;
(ii) Plant, materials and equipment to be used;
(iii) Transporting the equipment to and from site;
(iv) How the plant/ material/ equipment will be moved while on site;
(v) How and where the plant/ material/ equipment will be stored;
(vi) The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
(vii) Timing and location of activities;
(viii) Compliance/ non-compliance; and
(ix) Any other information deemed necessary by the Project Manager.

"slope" means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units;

"solid waste" means all solid waste, including construction debris, hazardous waste, excess cement/ concrete, wrapping materials, timber, cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers);

"spoil" means excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works;

"topsoil" means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility, appearance, structure, agricultural potential, fertility and composition of the soil;

"works" means the works to be executed in terms of the Contract

2. ACRONYMS and ABBREVIATIONS

CA	Competent Authority
cEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
EAR	Environmental Audit Report
ECA	Environmental Conservation Act No. 73 of 1989
ECO	Environmental Control Officer
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
MSDS	Material Safety Data Sheet
RI&AP's	Registered Interested and affected parties

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION

The effective implementation of this generic EMPr is dependent on established and clear roles, responsibilities and reporting lines within an institutional framework. This section of the EMPr gives guidance to the various environmental roles and reporting lines, however, project specific requirements will ultimately determine the need for the appointment of specific person(s) to undertake specific roles and or responsibilities. As such, it must be noted that in the event that no specific person, for example, an environmental control officer (ECO) is appointed, the holder of the EA remains responsible for ensuring that the duties indicated in this document for action by the ECO are undertaken.

Table 1: *Guide to roles and responsibilities for implementation of an EMPr*

Responsible Person(s)	**Role and Responsibilities**
Developer's Project Manager (DPM)	<u>Role</u> The Project Developer is accountable for ensuring compliance with the EMPr and any conditions of approval from the competent authority (CA). Where required, an environmental control officer (ECO) must be contracted by the Project Developer to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of the environmental authorisation (EA). The Project Developer is further responsible for providing and giving mandate to enable the ECO to perform responsibilities, and he must ensure that the ECO is integrated as part of the project team while remaining independent. <u>Responsibilities</u> - Be fully conversant with the conditions of the EA; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s); - Issuing of site instructions to the Contractor for corrective actions required; - Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings. Overall management of the project and EMPr implementation; and - Ensure that periodic environmental performance audits are undertaken on the project implementation.

Responsible Person(s)	Role and Responsibilities
Developer Site Supervisor (DSS)	Role The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO. The DSS is responsible for the day to day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr. Responsibilities - Ensure that all contractors identify a contractor's Environmental Officer (cEO); - Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO; - Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO; - Issuing of site instructions to the Contractor for corrective actions required; - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	Role The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non-compliance with the Performance Specifications as set out in the EA and EMPr. The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested &Affected Parties' (RI&AP's), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager, and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the

Responsible Person(s)	Role and Responsibilities
	Performance Specification) must be endorsed by the Project Manager. The ECO must also, as specified by the EA, report to the relevant CA as and when required. <u>Responsibilities</u> The responsibilities of the ECO will include the following: - Be aware of the findings and conclusions of all EA related to the development; - Be familiar with the recommendations and mitigation measures of this EMPr; - Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them; - Undertake regular and comprehensive site inspections / audits of the construction site according to the generic EMPr and applicable licenses in order to monitor compliance as required; - Educate the construction team about the management measures contained in the EMPr and environmental licenses; - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective; - Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements; - In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licenses; - Liaison between the DPM, Contractors, authorities and other lead stakeholders on all environmental concerns; - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr; - Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO); - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken; - Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken;

Responsible Person(s)	Role and Responsibilities
	- Assisting in the resolution of conflicts; - Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor; - In case of non-compliances, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; - Maintenance, update and review of the EMPr; - Communication of all modifications to the EMPr to the relevant stakeholders.
developer Environmental Officer (dEO)	<u>Role</u> The dEOs will report to the Project Manager and are responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities. <u>Responsibilities</u> - Be fully conversant with the EMPr; - Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) ; - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared; - Assist the contractor in investigating environmental incidents and compile investigation reports; - Follow-up on pre-warnings, defects, non-conformance reports;

Responsible Person(s)	Role and Responsibilities
	- Measure and communicate environmental performance to the Contractor; - Conduct environmental awareness training on site together with ECO and cEO; - Ensure that the necessary legal permits and / or licenses are in place and up to date; - Acting as Developer's Environmental Representative on site and work together with the ECO and contractor;
Contractor	Role The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development or expansion of substation infrastructure for the transmission and distribution of electricity activities. Responsibilities - project delivery and quality control for the development services as per appointment; - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period; - ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely; - attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones; - ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO.

Responsible Person(s)	Role and Responsibilities
contractor Environmental Officer (cEO)	<u>Role</u> Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr). The Contractor's representative can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the Environmental Control Officer and the public. As a minimum the cEO shall meet the following criteria: <u>Responsibilities</u> - Be on site throughout the duration of the project and be dedicated to the project; - Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site; - Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements; - Attend the Environmental Site Meeting; - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; - Report back formally on the completion of corrective actions; - Assist the ECO in maintaining all the site documentation; - Prepare the site inspection reports and corrective action reports for submission to the ECO; - Assist the ECO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all substation infrastructure projects as a minimum requirement.

4.1 Document control/Filing system

The holder of the EA is solely responsible for the upkeep and management of the EMPr file. As a minimum, all documentation detailed below will be stored in the EMPr file. A hard copy of all documentation shall be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the DSS (where applicable). This duplicate file must remain current and up-to-date. The filing system must be updated and relevant documents added as required. The EMPr file must be made available at all times on request by the CA or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

4.2 Documentation to be available

At the outset of the project the following preliminary list of documents shall be placed in the filing system and be accessible at all times:

- Full copy of the signed EA from the CA in terms of NEMA, granting approval for the development or expansion;
- Copy of the generic and site specific EMPr as well as any amendments thereof;
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof;
- All method statements;
- Completed environmental checklists;
- Minutes and attendance register of environmental site meetings;
- An up-to-date environmental incident log;
- A copy of all instructions or directives issued;
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record;
- Complaints register.

4.3 Weekly Environmental Checklist

The ECOs are required to complete a Weekly Environmental Checklist, the format of which is to be agreed prior to commencement of the activity. The ECOs are required to sign and date the checklist, retain a copy in the EMPr file and submit a copy of the completed checklist to the DSS on a weekly basis.

The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the Environmental Audit Report as required in terms of the EIA Regulations.

4.4 Environmental site meetings

Minutes of the environmental site meetings shall be kept. The minutes must include an attendance register and will be attached to the Monthly Report that is distributed to attendees. Each set of minutes must clearly record "Matters for Attention" that will be reviewed at the next meeting.

4.5 Required Method Statements

The method statement will be done in such detail that the ECOs are enabled to assess whether the contractor's proposal is in accordance with the EMPr.

The method statement must cover applicable details with regard to:

- development procedures;
- materials and equipment to be used;
- getting the equipment to and from site;
- how the equipment/ material will be moved while on site;
- how and where material will be stored;
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- timing and location of activities;
- compliance/ non-compliance with the EMPr; and
- any other information deemed necessary by the ECOs.

Unless indicated otherwise by the Project Manager, the Contractor shall provide the following method statements to the Project Manager no less than 14 days prior to the commencement date of the activity:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure;
- Batch plants;
- Workshop or plant servicing;
- Handling, transport and storage of Hazardous Chemical Substance's;
- Vegetation management – Protected, clearing, aliens, felling;
- Access management – Roads, gates, crossings etc.;
- Fire plan;
- Waste management – transport, storage, segregation, classification, disposal (all waste streams);
- Social interaction – complaints management, compensation claims, access to properties etc.;
- Water – use (source, abstraction and disposal), access and all related information, crossings and mitigation;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Dust and noise management methodologies;
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The ECOs shall monitor and ensure that the contractors perform in accordance with these method statements. Completed and agreed method statements between the holder of the EA and the contractor shall be captured in Appendix 1.

4.6 Environmental Incident Log (Diary)

The ECOs are required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a means to record all environmental incidents and/or all non-compliance notice would not be issued. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this EMPr) that may be addressed immediately by the ECOs. (For example a contractor's staff member littering or a drip tray that has not been emptied);
- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the EMPr which as a single event would have a minor impact but which if cumulative and continuous would have a significant effect (for example no toilet paper available in the ablutions for an afternoon); and
- General environmental information such as road kills or injured wildlife.

The ECOs are to record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the Developer. The Log is to be kept in the EMPr file and at a minimum the following will be recorded for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The name of the Contractor responsible;
- The incident must be listed as significant or minor;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log;
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

The Environmental Incident Log will be captured in the EAR.

4.7 Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECOs via the DSS or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the EMPr file and will at a minimum include the following:

- Time and date of the non-compliance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;
- Recommended / required corrective action; and
- Date by which the corrective action to be completed.
- The contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the development site pertaining to the environment shall be

recorded in a dedicated register and the response noted with the date and action taken. The ECO should be made aware of any complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. Failure to redress the cause shall be reported to the relevant CA for them to deal with the transgression, as it deems fit. The contractor is deemed not to have complied with the EMPr if, inter alia, There is a deviation from the environmental conditions, impact management outcomes and impact management actions activities, as approved in generic and site specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause, an environmental impact.

4.8 Corrective action records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the DSS, the contractor's cEO will ensure that the corrective actions required take place within the stipulated timeframe. On completion of the corrective action the cEO is to issue a Corrective Action Report in writing to the ECOs. If satisfied that the corrective action has been completed, the ECOs are to sign-off on the Corrective Action Report, and attach the report to the non-compliance notice in the EMPr file. A corrective action is considered complete once the report has signed off by the ECOs.

4.9 Photographic record

A digital photographic record will be kept. The photographic record will be used to show before, during and post rehabilitation evidence of the project as well used in cases of damages claims if they arise. Each image must be dated and a brief description note attached.

The Contractor shall:

1. Allow the ECOs access to take photographs of all areas, activities and actions.

The ECOs shall keep an electronic database of photographic records which will include:

1. Pictures of all areas designated as work areas, camp areas, development sites and storage areas taken before these areas are set up;
2. All bunding and fencing;
3. Road conditions and road verges;
4. Condition of all farm fences;
5. Topsoil storage areas;
6. All areas to be cordoned off during construction;
7. Waste management sites;
8. Ablution facilities (inside and out);
9. Any non-conformances deemed to be "significant";
10. All completed corrective actions for non-compliances;
11. All required signage;
12. Photographic recordings of incidents;
13. All areas before, during and post rehabilitation; and
14. Include relevant photographs in the Final Environmental Audit Report.

4.10 Complaints register

The ECOs shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders and individuals. The Complaints Record shall:

1. Record the name and contact details of the complainant;
2. Record the time and date of the complaint;
3. Contain a detailed description of the complaint;
4. Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
5. Contain a copy of the ECOs written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO's written response will include a description of any corrective action to be taken and must be signed by the Contractor, ECO and affected party. Where a damage claim is issued by the complainant, the ECOs shall respond as described in (**section 4.11**) below.

4.11 Claims for damages

In the event that a Claim for Damages is submitted by a community, landowner or individual, the ECOs shall:

1. Record the full detail of the complaint as described in (**section 4.10**) above;
2. The DPM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
3. Following consideration by the DPM, the claim is to be resolved and settled immediately, or the reason for not accepting the claim communicated in writing to the claimant. Should the claimant not accept this, the ECO shall, in writing report the incident to the Developer's negotiator and legal department; and
4. A formal record of the response by the ECOs to the claimant as well as the rectification of the method of making payments not amount will be recorded in the EMPr file.

4.12 Interactions with affected parties

Open, transparent and good relations with affected landowners, communities and regional staff are an essential aspect to the successful management and mitigation of environmental impacts.

The ECOs shall:

1. Ensure that all queries, complaints and claims are dealt within an agreed timeframe;
2. Ensure that any or all agreements are documented, signed by all parties and a record of the agreement kept in the EMPr file;
3. Ensure that a complaints telephone numbers are made available to all landowners and affected parties; and
4. Ensure that contact with affected parties is courteous at all times;

4.13 Environmental audits

Internal environmental audits of the activity and implementation of the EMPr must be undertaken. The findings and outcomes included in the EMPr file and submitted to the CA at intervals as indicated in the EA.

The ECOs must prepare a monthly EAR. The report will be tabled as the key point on the agenda of the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the Project Manager and filed in the EMPr file. At a frequency determined by the EA, the ECOs shall submit the monthly reports to the CA. At a minimum the monthly report is to cover the following:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists;
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the Bi-monthly Environmental Site Meetings.

4.14 Final environmental audits

On final completion of the rehabilitation and/or requirements of the EA a final EAR is to be prepared and submitted to the CA. The EAR must comply with Appendix 7 of the EIA Regulations.

PART B: SECTION 1: Pre-approved generic EMPr template

5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS

This section provides a pre-approved generic EMPr template with aspects that are common to the development of substation infrastructure for the transmission and distribution of electricity. There is a list of aspects identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity, and for each aspect a set of prescribed impact management outcomes and associated impact management actions have been identified. Holders of EAs are responsible to ensure the implementation of these outcomes and actions for all projects as a minimum requirement, in order to mitigate the impact of such aspects identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity.

The template provided below is to be completed by providing the information under each heading for each environmental impact management action.

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must also be duly signed and dated on each page by the contactor and the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

In order to construct the substation (subject of this EMPr), a construction camp will be required. The construction camp proposed for the Oya Energy facility will be used in the construction of the Oya substation. There will therefore be two EMPr governing the use of the construction camp. Where there's any discrepancies between the two EMPr on the use of the construction camp, then the Oya Energy facility EMPr shall prevail.

5.1 Environmental awareness training

Impact management outcome: All onsite staff are aware and understands the individual responsibilities in terms of this EMPr.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All staff must receive environmental awareness training prior to commencement of the activities; – The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course; – Refresher environmental awareness training is available as and when required; – All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr; – The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: a) Safety notifications; and b) No littering. – Environmental awareness training must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities;	**ECO and cEO**	**Environmental Induction training; Toolbox talks; other pertinent training aids**	**Initially prior to construction commencing ECO to induct Construction Management and cEO, and thereafter repeated for all new employees and yearly. Toolbox talks to be presented weekly**	**ECO**	**Monthly**	**Signed induction and toolbox talk, or training registers**

b) Mitigation measures to be implemented when carrying out specific activities; c) Emergency preparedness and response procedures; d) Emergency procedures; e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures; g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures; j) Fire prevention; and k) Disease prevention. – A record of all environmental awareness training courses undertaken as part of the EMPr must be available; – Educate workers on the dangers of open and/or unattended fires; – A staff attendance register of all staff to have received environmental awareness training must be available. – Course material must be available and presented in appropriate languages that all staff can understand.						

5.2 Site Establishment development

Impact management outcome: Impacts on the environment are minimised during site establishment and the development footprint are kept to demarcated development area.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management; – Location of camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through; – Sites must be located where possible on previously disturbed areas; – The camp must be fenced in accordance with ***Section 5.5: Fencing and gate installation***; and – The use of existing accommodation for contractor staff, where possible, is encouraged.	**Contractor**	**Method Statement compilation and communication of Method Statements to employees. Use of EIA and Specialist Studies to locate site camps**	**Prior to construction**	**ECO**	**Monthly**	**Signed Method Statements; signed proof of communication register; Liaison with ECO regarding site camp placement**

5.3 Access restricted areas

Impact management outcome: Access to restricted areas prevented.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identification of access restricted areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development; – Erect, demarcate and maintain a temporary barrier with clear signage around the perimeter of any access restricted area, colour coding could be used if appropriate; and – Unauthorised access and development related activity inside access restricted areas is prohibited.	**Contractor**	**Use of EIA and Specialist Studies to locate sensitive areas and 'no-go' areas**	**Prior to construction in new areas**	**ECO**	**Monthly**	**Contractor compliance with sensitive areas and 'no-go' areas identified in EIA and Specialist Studies**

5.4 Access roads

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

– An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities; – All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition – All contractors must be made aware of all these access routes. – Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense; – Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads; – In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with ***section 4.9: photographic record***; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor; – Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands – Access roads must only be developed on a pre-planned and approved roads.	**Contractor**	**Implementation of mitigation measures**	**Ongoing.**	**ECO**	**Monthly**	**Signed access agreements and maintenance of access roads**

5.5 Fencing and Gate installation

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Use existing gates provided to gain access to all parts of the area authorised for development, where possible; – Existing and new gates to be recorded and documented in accordance with **section *4.9: photographic record***; – All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner; – At points where the line crosses a fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner; – Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground; – Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate; – Original tension must be maintained in the fence wires; – All gates installed in electrified fencing must be re-electrified; – All demarcation fencing and barriers must be maintained in good working order for the duration of the development activities;	**Contractor and Applicant**	**Implementation of the mitigation measures**	**Ongoing.**	**ECO**	**Monthly**	**Site observation; public complaints register**

– Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where applicable; – Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the land owner. – All fencing must be developed of high quality material bearing the SABS mark; – The use of razor wire as fencing must be avoided; – Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times; – On completion of the development phase all temporary fences are to be removed; – The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.						

5.6 Water Supply Management

Impact management outcome: Undertake responsible water usage**.**

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis; – The Contractor must ensure the following:	**Contractor and Applicant**	**Application to DWS where applicable. Implementation**	**Construction**	**ECO**	**Monthly**	**Proof of water source used; submission**

a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river; b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented. – Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training. d. The use of grey water is encouraged.		**of mitigation measures**				**of above proof to DWS**

5.7 Storm and waste water management

Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager; – All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility;	**Contractor**	**Employ methods to prevent water pollution**	**Construction**	**ECO**	**Weekly**	**Inspection of areas where construction takes place near watercourses**

– Natural storm water runoff not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO; – Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO.						

5.8 Solid and hazardous waste management

Impact management outcome: Wastes are appropriately stored, handled and safely disposed of at a recognised waste facility.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All measures regarding waste management must be undertaken using an integrated waste management approach; – Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided; – A suitably positioned and clearly demarcated waste collection site must be identified and provided; – The waste collection site must be maintained in a clean and orderly manner;	**Contractor**	**Following good waste management practices outlined in approved method statement**	**Construction**	**ECO**	**Weekly**	**Waste safe disposal slips; Service Level Agreements**

– Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal; – Staff must be trained in waste segregation; – Bins must be emptied regularly; – General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company; – Hazardous waste must be disposed of at a registered waste disposal site; – Certificates of safe disposal for general, hazardous and recycled waste must be maintained.						

5.9 Protection of watercourses and estuaries

Impact management outcome: Pollution and contamination of the watercourse environment and or estuary erosion are prevented.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities; – In the event of a spill, prompt action must be taken to clear the polluted or affected areas; – Where possible, no development equipment must traverse any seasonal or permanent wetland	**Contractor**	**Method statements; Stormwater Management Plan**	**Construction**	**ECO**	**Weekly**	**Method Statement compliance**

– No return flow into the estuaries must be allowed and no disturbance of the Estuarine functional Zone should occur; – Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available; – There must not be any impact on the long term morphological dynamics of watercourses or estuaries; – Existing crossing points must be favored over the creation of new crossings (including temporary access) – When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: a) Water levels during the period of construction; No altering of the bed, banks, course or characteristics of a watercourse b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must be implemented e.g. including ensuring that construction equipment is well maintained; c) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and d) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.						

5.10 Vegetation clearing

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
General: – Indigenous vegetation which does not interfere with the development must be left undisturbed; – Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species; – Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing; – Permits for removal must be obtained from the relevant CA prior to the cutting or clearing of the affected species, and they must be filed; – The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals; – Trees felled due to construction must be documented and form part of the Environmental Audit Report; – Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris;	**Contractor and Applicant**	**Specialist recommendations; Method statement; Search and Rescue Plan; Alien vegetation removal Plan (approved plans and strategies used by Eskom), site awareness**	**Pre-Construction and Construction and Operation**	**ECO**	**Pre-Construction and weekly during construction**	**Compliance to method statements and Search and Rescue Plan; Alien vegetation removal Plan. approved plans and strategies used by Eskom**

– Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained; – A daily register must be kept of all relevant details of herbicide usage; – No herbicides must be used in estuaries; – All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance to ***Section 5.3: Access restricted areas***. Alien invasive vegetation must be removed and disposed of at a licensed waste management facility.						

5.11 Protection of fauna

Impact management outcome: Disturbance to fauna is minimised.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present; – The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme;	**Contractor**	**Method statement and adherence to exclusion/no-go zones; site awareness**	**Construction**	**ECO**	**Weekly**	**Public complaints register; adherence to exclusion/no-go zones**

– Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present; – Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds; – No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas; – No deliberate or intentional killing of fauna is allowed; – In areas where snakes are abundant, snake deterrents to be deployed on the pylons to prevent snakes climbing up, being electrocuted and causing power outages; and – No Threatened or Protected species (ToPs) and/or protected fauna as listed according NEMBA (Act No. 10 of 2004) and relevant provincial ordinances may be removed and/or relocated without appropriate authorisations/permits.						**and method statements**

5.12 Protection of heritage resources

Impact management outcome: Impact to heritage resources is minimised.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in ***Section 5.3: Access restricted areas***;	**Constractor**	**Method Statement; Heritage**	**Pre-construction and construction**	**ECO**	**Weekly and daily for zones**	**Monitoring of construction**

– Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance; – All work must cease immediately, if any human remains and/or other archaeological, palaeontological and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/ palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time must be allowed to remove/collect such material before development recommences.		**management plan**			**highlighted by Heritage Specialist where potsherds were found**	**areas, adherence to management plan if change finds found.**

5.13 Safety of the public

Impact management outcome: All precautions are taken to minimise the risk of injury, harm or complaints.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.; – All unattended open excavations must be adequately fenced or demarcated; – Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding; – Ensure structures vulnerable to high winds are secured;	**Contractor**	**Landowner agreements; Method Statement**	**Construction**	**ECO**	**Weekly**	**Site works barricaded, safe working site maintained, public complaints register.**

– Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.						

5.14 Sanitation

Impact management outcome: Clean and well maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Mobile chemical toilets are installed onsite if no other ablution facilities are available; – The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances; – Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body; b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out;	**Contractor**	**Service level agreement with Service provider; Method statement; site awareness**	**Construction**	**ECO**	**Weekly**	**Service level agreement with service provider, proof of safe disposal of waste**

e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards; – A copy of the waste disposal certificates must be maintained.						

5.15 Prevention of disease

Impact Management outcome: All necessary precautions linked to the spread of disease are taken.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Undertake environmentally-friendly pest control in the camp area; – Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS; – The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area; – Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable; – Free condoms must be made available to all staff on site at central points; – Medical support must be made available; – Provide access to Voluntary HIV Testing and Counselling Services.	**Contractor**	**Method statement, awareness training**	**Construction**	**ECO**	**Monthly**	**Method statement, proof of awareness training**

5.16 Emergency procedures

Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; – The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation; – All staff must be made aware of emergency procedures as part of environmental awareness training; – The relevant local authority must be made aware of a fire as soon as it starts; – In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see ***Hazardous Substances section 5.17***).	**Contractor**	**Environmental Emergency Response Action Plan**	**Construction**	**ECO**	**Monthly**	**Adherence /compliance to ERAP**

5.17 Hazardous substances

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.

Impact Management Actions	**Implementation**	**Monitoring**

	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible; – All hazardous substances must be stored in suitable containers as defined in the Method Statement; – Containers must be clearly marked to indicate contents, quantities and safety requirements; – All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers; – Bunded areas to be suitably lined with a SABS approved liner; – An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis; – All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS); – All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet; – Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available; – The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers; – The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and	**Contractor**	**Method Statement, OHS requirements; adequate and responsible use and storage of Hazardous Substances, Hazardous Substances storage register**	**Construction**	**ECO**	**Weekly**	**Hazardous Substance Storage Register, MSDS, Method Statement**

the volume inside the bund must be 110% of the total capacity of all the storage tanks/ bowsers ; – The floor of the bund must be sloped, draining to an oil separator; – Provision must be made for refueling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained; – All empty externally dirty drums must be stored on a drip tray or within a bunded area; – No unauthorised access into the hazardous substances storage areas must be permitted; – No smoking must be allowed within the vicinity of the hazardous storage areas; – Adequate fire-fighting equipment must be made available at all hazardous storage areas; – Where refueling away from the dedicated refueling station is required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used; – An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times; – The responsible operator must have the required training to make use of the spill kit in emergency situations; – An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken; – In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to ***Section 5.7*** for procedures						

concerning ***storm and waste water management*** and ***5.8*** for ***solid and hazardous waste management.***						

5.18 Workshop, equipment maintenance and storage

Impact management outcome: Soil, surface water and groundwater contamination is minimised.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area; – During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts; – Leaking equipment must be repaired immediately or be removed from site to facilitate repair; – Workshop areas must be monitored for oil and fuel spills; – Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available; – The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed; – Water drainage from the workshop must be contained and managed in accordance Section ***5.7: Storm and waste water management***.	**Contractor**	**Method Statement, OHS requirements; Hazardous Substances storage register, vehicle daily checklist, vehicle service register**	**Construction**	**ECO**	**Weekly**	**Method Statement, Hazardous Substances storage register, vehicle daily checklist, vehicle service register**

5.19 Batching plants

Impact management outcome: Minimise spillages and contamination of soil, surface water and groundwater.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Concrete mixing must be carried out on an impermeable surface; – Batching plants areas must be fitted with a containment facility for the collection of cement laden water. – Dirty water from the batching plant must be contained to prevent soil and groundwater contamination – Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains; – A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted; – Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licenced disposal facility; – Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site; – Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to ***Section 5.20: Dust emissions***) – Any excess sand, stone and cement must be removed or reused from site on completion of construction period and disposed at a registered disposal facility;	**Contractor**	**Method Statement**	**Construction**	**ECO**	**Weekly**	**Compliance to mitigation and method statement**

– Temporary fencing must be erected around batching plants in accordance with Section ***5.5: Fencing and gate installation***.						

5.20 Dust emissions

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO; – Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re-vegetated or stabilised as soon as is practically possible; – Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present; – During high wind conditions, the ECO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level; – Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind;	**Contractor**	**Method Statement, Vehicle Speed limit, dust suppression**	**Construction**	**ECO**	**Monthly**	**Site observations, dust suppression register**

– Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO; – Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas; – Straw stabilisation must be applied at a rate of one bale/10 m² and harrowed into the top 100 mm of top material, for all completed earthworks; – For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.						

5.21 Blasting

Impact management outcome: Impact to the environment is minimised through a safe blasting practice.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Any blasting activity must be conducted by a suitably licensed blasting contractor; and – Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	**Contractor**	**Relevant legislation and regulation**	**Construction**	**ECO**	**Monthly**	**Public complaints register; proof of registration of blasting contractor**

5.22 Noise

Impact Management outcome: Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only; – All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained; – Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers; – Develop a Code of Conduct for the construction phase in terms of behaviour of construction staff. Operating hours as determined by the environmental authorisation are adhered to during the development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.	**Contractor**	**Restriction of site hours to working hours Monday to Friday**	**Construction**	**ECO**	**Monthly**	**Public Complaints Register**

5.23 Fire prevention

Impact management outcome: Prevention of uncontrollable fires.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Designate smoking areas where the fire hazard could be regarded as insignificant; – Firefighting equipment must be available on all vehicles located on site; – The local Fire Protection Agency (FPA) must be informed of construction activities; – Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site; – Two way swop of contact details between ECO and FPA.	**Contractor**	**Emergency Response Action Plan; Method Statement**	**Construction**	**ECO**	**Monthly**	**Public complaints register; compliance to ERAP**

5.24 Stockpiling and stockpile areas

Impact management outcome: Reduce erosion and sedimentation as a result of stockpiling.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

– All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses, watercourses and water bodies; – All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods; – Topsoil stockpiles must not exceed 2 m in height; – During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.); – Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.	**Contractor**	**Method Statement**	**Construction**	**ECO**	**Monthly**	**Method Statement and site observations**

5.25 Civil works

Impact management outcome: Impact to the environment minimised during civil works to create the substation terrace.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where terracing is required, topsoil must be collected and retained for the purpose of re-use later to rehabilitate disturbed areas not covered by yard stone; – Areas to be rehabilitated include terrace embankments and areas outside the high voltage yards; – Where required, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled;	**Contractor**	**Method Statement**	**Construction**	**ECO**	**Monthly**	**Site observation**

– These areas can be stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; – Rehabilitation of the disturbed areas must be managed in accordance with ***Section 5.35: Landscaping and rehabilitation***; – All excess spoil generated during terracing activities must be disposed of in an appropriate manner and at a recognised landfill site; and – Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes.						

5.26 Excavation of foundation, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs as a result of excavation of foundation, cable trenching and drainage systems.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a licensed landfill site, if not used for backfilling purposes; – Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes;	**Contractor**	**Method Statement and Engineering Drawings**	**Construction**	**ECO**	**Weekly**	**Adherence to method statements**

– Management of equipment for excavation purposes must be undertaken in accordance with ***Section 5.18: Workshop, equipment maintenance and storage***; and – Hazardous substances spills from equipment must be managed in accordance with ***Section 5.17: Hazardous substances***.						

5.27 Installation of foundations, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs during the installation of foundation, cable trenching and drainage system.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Batching of cement to be undertaken in accordance with **Section *5.19: Batching plants***; and – Residual solid waste must be disposed of in accordance with **Section *5.8: Solid waste and hazardous management***.	**Contractor**	**Method Statement**	**Construction**	**Contractor and ECO**	**Weekly**	**Method Statement and site observations**

5.28 Installation of equipment (circuit breakers, current Transformers, Isolators, Insulators, surge arresters, voltage transformers, earth switches)

Impact management outcome: No environmental degradation occurs as a result of installation of equipment.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

– Management of dust must be conducted in accordance with Section ***5. 20: Dust emissions***; – Management of equipment used for installation must be conducted in accordance with Section ***5.18: Workshop, equipment maintenance and storage***; – Management hazardous substances and any associated spills must be conducted in accordance with Section ***5.17: Hazardous substances***; and – Residual solid waste must be recycled or disposed of in accordance with ***Section 5.8: Solid waste and hazardous management***.	**Contractor**	**Method Statement**	**Construction**	**ECO**	**Weekly**	**Method Statement and site observation**

5.29 Steelwork Assembly and Erection

Impact management outcome: No environmental degradation occurs as a result of steelwork assembly and erection.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– During assembly, care must be taken to ensure that no wasted/unused materials are left on site e.g. bolts and nuts – Emergency repairs due to breakages of equipment must be managed in accordance with ***Section 5. 18: Workshop, equipment maintenance and storage*** and ***Section 5.16: Emergency procedures***.	**Contractor**	**Method Statement**	**Construction**	**ECO**	**Weekly**	**Site Observations**

5.30 Cabling and Stringing

Impact management outcome: No environmental degradation occurs as a result of stringing.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Residual solid waste (off cuts etc.) shall be recycled or disposed of in accordance with **Section *6.8: Solid waste and hazardous Management***; – Management of equipment used for installation shall be conducted in accordance with **Section *5.18: Workshop, equipment maintenance and storage***; – Management hazardous substances and any associated spills shall be conducted in accordance with ***Section 5.17: Hazardous substances***.	**Contractor**	**Method Statement, adherence to exclusion zones**	**Construction**	**ECO**	**Weekly**	**Site obsesrvations**

5.31 Testing and Commissioning (all equipment testing, earthing system, system integration)

Impact management outcome: No environmental degradation occurs as a result of Testing and Commissioning.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

– Residual solid waste must be recycled or disposed of in accordance with ***Section 5.8: Solid waste and hazardous management***.	**Contractor**	**Method Statement**	**Construction**	**ECO**	**Weekly**	**Site observation**

5.32 Socio-economic

Impact management outcome: enhanced socio-economic development.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Develop and implement communication strategies to facilitate public participation; – Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process; – Sustain continuous communication and liaison with neighboring owners and residents – Create work and training opportunities for local stakeholders; and – Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to local farmers.	**Contractor**	**Landowner Agreements; Issues and Complaints Register**	**Construction**	**ECO**	**Monthly**	**Landowner Agreement; Issues and Complaints Register**

5.33 Temporary closure of site

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in ***sections 5.17: Hazardous substances and 5.18: Workshop, equipment maintenance and storage***; – Hazardous storage areas must be well ventilated; – Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service; – Emergency and contact details displayed must be displayed; – Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel; – Night hazards such as reflectors, lighting, traffic signage etc. must have been checked; – Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.; – Structures vulnerable to high winds must be secured; – Wind and dust mitigation must be implemented; – Cement and materials stores must have been secured; – Toilets must have been emptied and secured; – Refuse bins must have been emptied and secured; – Drip trays must have been emptied and secured.	**Contractor**	**Method statement**	**Construction – when applicable**	**ECO**	**Monthly – when applicable**	**Method statement** **ECO reports**

5.34 Dismantling of old equipment

Impact management outcome: Impact to the environment to be minimised during the dismantling, storage and disposal of old equipment commissioning.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All old equipment removed during the project must be stored in such a way as to prevent pollution of the environment; – Oil containing equipment must be stored to prevent leaking or be stored on drip trays; – All scrap steel must be stacked neatly and any disused and broken insulators must be stored in containers; – Once material has been scrapped and the contract has been placed for removal, the disposal Contractor must ensure that any equipment containing pollution causing substances is dismantled and transported in such a way as to prevent spillage and pollution of the environment; – The Contractor must also be equipped to contain and clean up any pollution causing spills; and – Disposal of unusable material must be at a licensed waste disposal site.	**Contractor**	**Method statement**	**Construction and decommissioning**	**ECO**	**Monthly – when applicable**	**Site observation**

5.35 Landscaping and rehabilitation

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed of to a registered waste site; – All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983 – All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983; – Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition; – Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners; – Rehabilitation of access roads outside of farmland; – Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition; – Stockpiled topsoil must be used for rehabilitation (refer to ***Section 5.24: Stockpiling and stockpiled areas***);	**Contractor**	**Method Statements; erosion protection; alien eradication plan**	**Concurrent with Construction**	**ECO**	**Monthly**	**Adequately revegetated work areas; no erosion or invasive plant species**

– Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion; – Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed; – Subsoil must be ripped before topsoil is placed; – The rehabilitation must be timed so that rehabilitation can take place at the optimal time for vegetation establishment; – Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled; – Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; – Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150 mm of topsoil. – Where required, re-vegetation including hydro-seeding can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen; b) Pioneer species are included; c) Species chosen must be indigenous to the area with the seeds used coming from the area; d) Root systems must have a binding effect on the soil; e) The final product must not cause an ecological imbalance in the area						

6 ACCESS TO THE GENERIC EMPr

Once completed and signed, to allow the public access to the generic EMPr, the holder of the EA must make the EMPr available to the public in accordance with the requirements of Regulation 26(h) of the EIA Regulations.

PART B: SECTION 2

7 SITE SPECIFIC INFORMATION AND DECLARATION

7.1 Sub-section 1: contact details and description of the project

7.1.1 Details of the applicant: **Oya Energy (Pty) Ltd**

Name of applicant: **Dr Kilian Hagermann**

Tel No: **021 300 0613**

Fax No: **086 768 9830**

Postal Address: **5th Floor, 125 Buitengracht Street, Cape Town, 8001**

Physical Address: **5th Floor, 125 Buitengracht Street, Cape Town, 8001**

7.1.2 Details and expertise of the EAP:

Name of applicant: **SiVEST SA (Pty) Ltd**

Tel No: **033 347 1600**

Fax No: **033 347 5762**

E-mail address: **liandras@sivest.co.za**

Expertise of the EAP (Curriculum Vitae included): **Yes, included in the BA Application**

7.1.3 Project name:

PROPOSED DEVELOPMENT OF THE 132kV OYA POWER LINE NEAR MATJIESFONTEIN, WESTERN AND NORTHERN CAPE PROVINCES – SUBSTATION INFRASTRUCTURE EMPR

7.1.4 Description of the project:

Oya Energy (Pty) Ltd (hereafter referred to as "Oya Energy") is proposing to construct a 132kV overhead power line and 33/132kV substation near Matjiesfontein in the Western and Northern Cape Provinces (hereafter referred to as the "proposed development"). The overall objective of the proposed development is to feed the electricity generated by the proposed Oya Energy Facility (part of separate on-going EIA process with DEFF Ref No.: 14/12/16/3/3/2/2009) as well as potentially the nearby developments into the national grid. The grid connection and substation (this application) requires a separate Environmental Authorisation (EA), in order to allow the EA to be handed over to Eskom.

The proposed development is located approximately 50km north-west of the town of Matjiesfontein, within the Witzenberg and Karoo Hoogland Local Municipalities, in the Cape Winelands and Namakwa District Municipalities of the Western and Northern Cape Provinces. It should be noted that the entire extent of the proposed 132kV overhead power line and substations are located within one (1) of the Strategic Transmission Corridors as defined and in terms of the procedures laid out in Government Notice (GN) No. 113 of 16 February 2018, namely the Central Corridor.

The proposed development will include a 132kV power line and 33/132kV substations to feed electricity generated by the energy facilities owned by the applicant into the national grid at the Eskom Kappa substation. This EMPr forms part of the 132kV power line.

The type of power line towers being considered at this stage include both lattice and monopole towers and it is assumed that these towers will be located approximately 200m to 250m apart. The towers will be up to 45m in height, depending on the terrain, but will ensure minimum overhead line clearances from buildings and surrounding infrastructure.

Only one (1) route is possible for the section of the proposed power line which connects the Kudusberg substation to the Oya substation (i.e. Kudusberg to Oya route) and therefore no alternatives could be provided for this section of proposed power line route. five (5) power line corridor route alternatives for the section of the proposed power line which connects the Oya substation to the Kappa substation (i.e. Oya to Kappa route) were however assessed. The power line corridors provide different route alignments contained within an assessment corridor of up to approximately 300m wide (i.e. 150m on either side of power line). This is to allow for flexibility to route the power line within the authorised corridors.

The proposed substations will occupy areas of up to approximately 4 hectares (ha) each and will likely be single storey buildings, however, some components will be higher. The substations will be step-up substations which will contain transformers for voltage step-up from medium voltage to high voltage. Direct Current (DC) power will be converted into Alternating Current (AC) power in inverters and voltage will be stepped up to medium voltage in inverter transformers. Substations will connect proposed Oya Energy Facility as well as potentially nearby developments into Kappa Substation, from where electricity will be fed into the national grid.

7.1.5 Project location:

The proposed substation development will affect the following properties:

NO	FARM NAME (if applicable)	FARM NUMBER (if applicable)	PORTION NAME	PORTION NUMBER
1	Farm Baakens Rivier	155	Remainder	N/A
2	Farm Matjes Fontein	794	Remainder	N/A

7.2 Sub-section 2: Development footprint site map

This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. The sensitivity map must be prepared from the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g. threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features within 50 m from the development footprint.

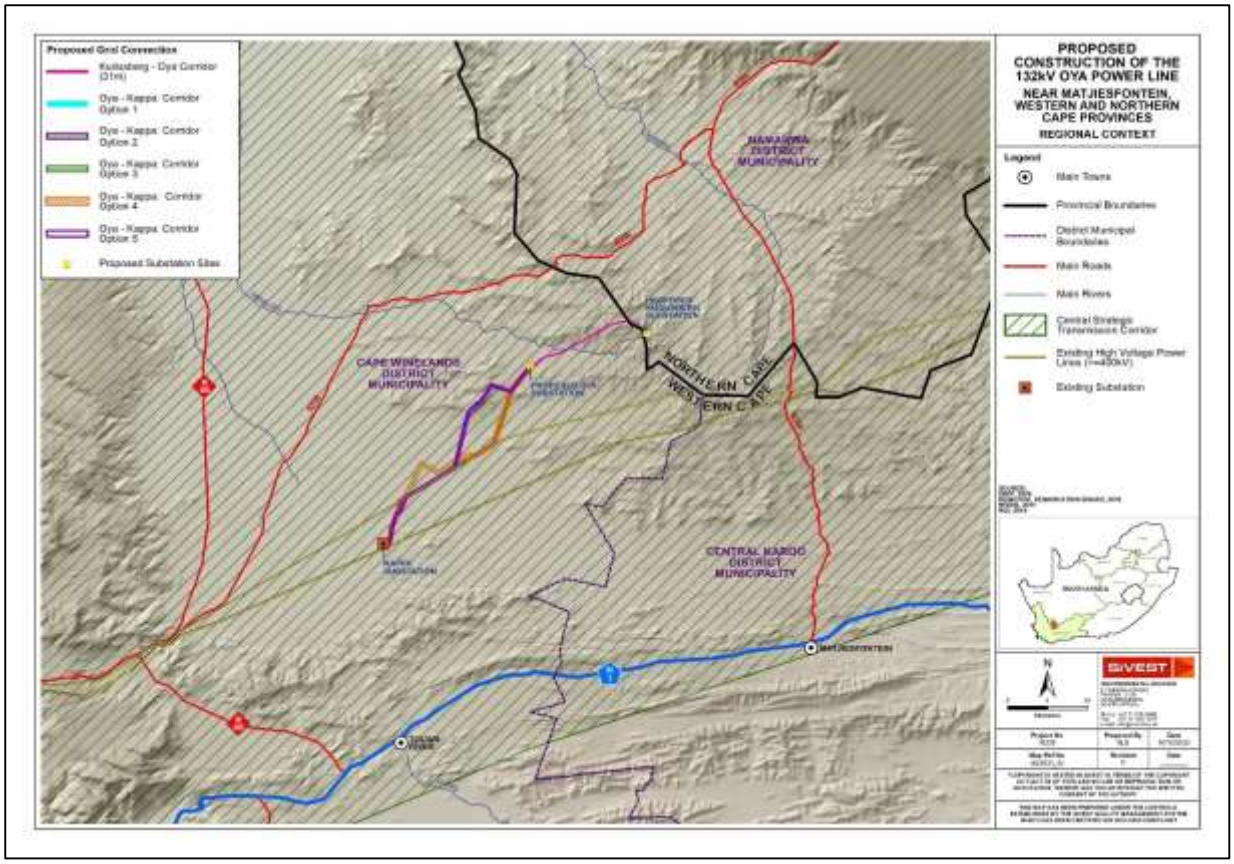

Figure 1: Regional Context of Oya Power Line and on-site substations

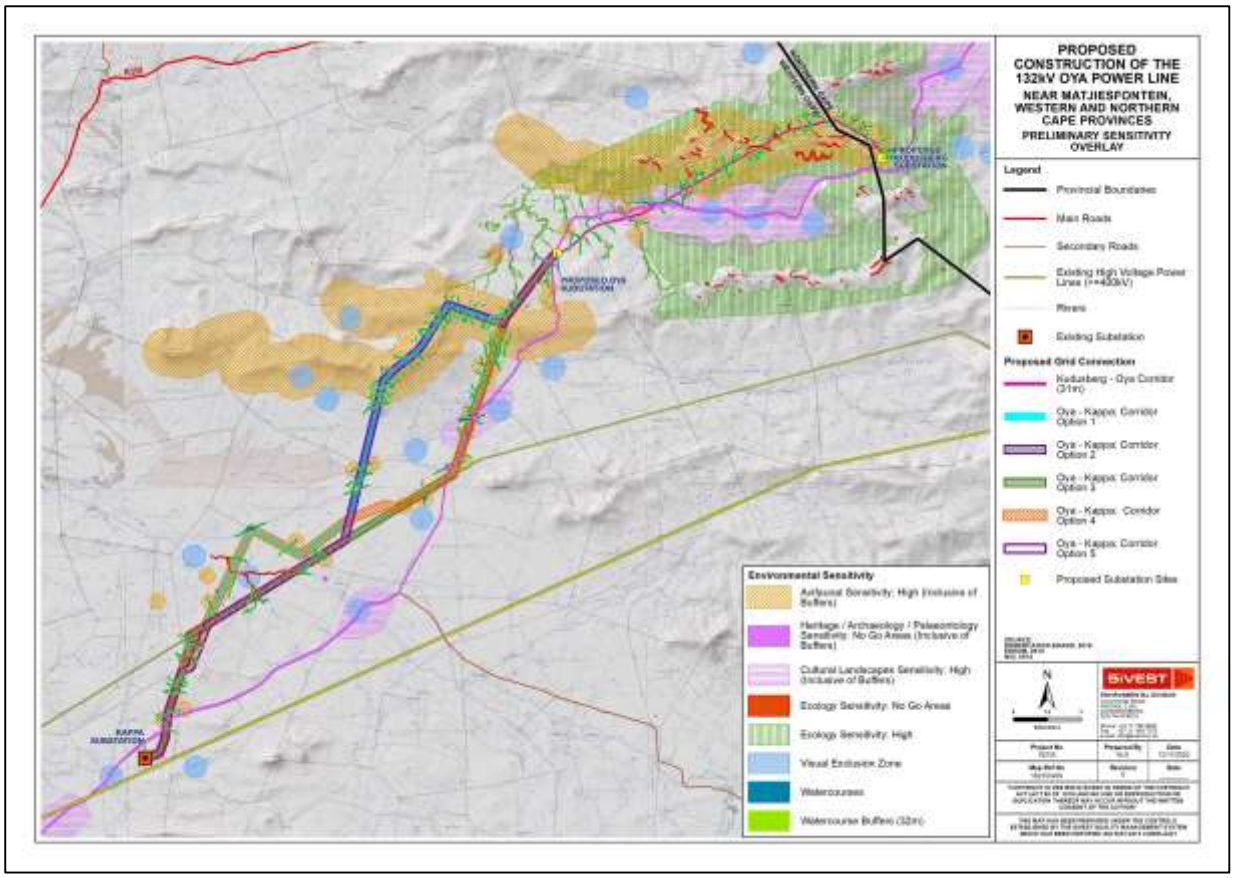

Figure 2: Sensitivity Overlay

7.3 Sub-section 3: Declaration

The proponent/applicant or holder of the EA affirms that he/she will abide and comply with the prescribed impact management outcomes and impact management actions as stipulated in part B: section 1 of the generic EMPr and have the understanding that the impact management outcomes and impact management actions are legally binding. The proponent/applicant or holder of the EA affirms that he/she will provide written notice to the CA 14 day prior to the date on which the activity will commence of commencement of construction to facilitate compliance inspections.

Signature Proponent/applicant/ holder of EA Date:

7.4 Sub-section 4: amendments to site specific information (Part B; section 2)

Should the EA be transferred to a new holder, Part B: Section 2 must be completed by the new holder and submitted with the application for an amendment of the EA in terms of Regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted for an amendment to an environmental authorisation will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

PART C

8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and actions, not included in the pre-approved generic EMPr template, to manage impacts, those impact management outcomes and impact management actions must be included in this section. These specific management controls must be referenced spatially, and must include impact management outcomes and impact management actions. The management controls including impact management outcomes and impact management actions must be presented in the format of the pre-approved generic EMPr template. This applies only to additional impact management outcomes and impact management actions that are necessary.

If Part C is applicable to the development as authorised in the EA, it is required to be submitted to the CA together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding.

This section will **not be required** should the site contain no specific environmental sensitivities or attributes.

The following specialist studies were undertaken as part of this project:

- Desktop Agricultural and Soils Impact Assessment;
- Surface Water Assessment;
- Avifauna Impact Assessment;
- Heritage Impact Assessment;
    - Archaeology;
    - Palaeontology;
    - Cultural Landscapes;
- Socio-Economic Impact Assessment;
- Terrestrial Ecology Impact Assessment;
- Visual Impact Assessment.

The mitigation measures provide by the Specialists through the Impact Assessment process are included below:

Agriculture:

There are no additional mitigation measures required, over and above what has already been included in the Generic EMPr for overhead electricity transmission and distribution infrastructure as per Government Notice 435, which was published in Government Gazette 42323 on 22 March 2019.

Freshwater Ecology:

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Construction Phase			
Watercourse drivers and receptors such as hydrology, water quality (when surface water is present), geomorphology, habitat and biota.	It is assumed that the proposed power line pylons and substations will be located outside of the watercourses and at least 32m from the delineated edge of a watercourses (thus outside the 32m NEMA ZoR) – this in itself is considered a mitigation measure, which entails no direct negative impacts from occurring on the watercourses. Nevertheless, the following mitigation measure must be implemented: ▪ It is imperative that all construction works (with specific mention of creating new watercourse crossings) be undertaken during the driest period of the year when the flow is very low in the watercourses and use of informal road crossings will have a limited impact; ▪ Due to the accessibility of the sites, no unnecessary crossing of the watercourses may be permitted. This will limit edge effects, erosion and sedimentation of the watercourses during the construction phase; ▪ New watercourse road crossings must be kept to a minimum, and may only be developed should existing road crossings not be feasible to use or to circumnavigate the watercourse. The road crossing must be kept as small as possible, only removing the required vegetation and preferably in an area	Holder of the EA	Key sensitive areas avoided Compliance to all legislative requirements. Storm Water Management Plan implemented. Water Management Plan Implemented Batching plant managed according to approved Method Statement All staff members are aware of the EMPr requirements relevant to them. All waste managed according to approved Method Statement Vehicles repaired as per the approved Method Statement for vehicles management

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
	where the channel is lined with solid bed rock (which will not erode); ▪ The reaches of the watercourses where no activities are planned (i.e. no pylons and no spanning of the power line over the watercourse) must be considered no-go areas; ▪ Contractor laydown areas, vehicle re-fuelling areas and material storage facilities to remain outside of the watercourses and their associated 32 m NEMA Zone of Regulation (ZoR); ▪ Removed vegetation must be stockpiled outside of the delineated boundary of the watercourse. The footprint areas and height of these stockpiles should be kept to a minimum. Should the vegetation not be suitable for reinstatement after the construction phase or be alien/invasive vegetation species, all material must be disposed of at a registered garden refuse site and may not be burned or mulched on site. ▪ It should be feasible to utilise existing roads to gain access to the proposed construction area. No indiscriminate crossing of the watercourses outside of the proposed crossing point or driving in unmarked areas through the buffer zones of the watercourses may be permitted. This will avoid any disturbance to the terrestrial vegetation; ▪ No other terrestrial vegetation areas may be disturbed by the proposed construction activities for the surface infrastructure, other than the approved proposed footprint areas; and ▪ After construction of the surface infrastructure, the area surrounding the surface infrastructure must be revegetated with suitable indigenous vegetation (terrestrial vegetation) to prevent the establishment of alien vegetation species and their potential spread into the watercourses.		Ensure the EMPr is adhered to. Ensure the conditions of the EA are adhered to. Implementation of Alien Invasive Species Management Impacts avoided or managed as per specialist recommendations. Erosion plan implemented and hydrological measures in place

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Watercourse drivers and receptors such as hydrology, water quality (when surface water is present) and geomorphology	▪ It should be feasible to utilise existing roads to gain access to the proposed construction area. No indiscriminate crossing of the watercourses outside of the proposed crossing point or driving in unmarked areas through the buffer zones of the watercourses may be permitted. This will avoid any disturbance to the terrestrial vegetation; ▪ No other terrestrial vegetation areas may be disturbed by the proposed construction activities for the surface infrastructure, other than the approved proposed footprint areas; and ▪ After construction of the surface infrastructure, the area surrounding the surface infrastructure must be revegetated with suitable indigenous vegetation (terrestrial vegetation) to prevent the establishment of alien vegetation species and their potential spread into the watercourses.		
Watercourse drivers and receptors such as vegetation, geomorphology and sediment balance.	▪ Excavation of pits for the pylon foundation may result in loose sediments within the landscape, specifically if works are taken during a period of rainfall (if applicable). As such, for activities specifically within close proximity to PFPs and upon recommendation of the ECO sediment traps should also be installed downstream/downgradient of the construction area. Sediment traps can be created by pegging an appropriate geotextile across the entire width of the work area at the specified pylon, held down by cobbles/boulders or by geotextile wrapped hay bales spanning the width of the work area and staked into position; ▪ *During excavation of the pits, soils must be stockpiled upgradient of the excavated pit. Mixture of the lower and upper layers of the excavated soil should be kept to a minimum. These soils must be used to close off the pits,		

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
	immediately after installation of the pylon. The stockpiles must remain as small; ▪ Material used as bedding material (at the bottom of the excavated pit) should be stockpiled outside of the 32m NEMA ZoR and as close as possible to the pylon footprint area. Once the pit has been excavated, the bedding material should directly be placed within the pit, rather than stockpiling it alongside the pit; ▪ When the power line is strung between the pylons, no vehicles my indiscriminately drive through the watercourses, use must be made of the dedicated access roads. <u>Control measures for concrete mixing on site:</u> ▪ No mixed concrete may be deposited outside of the designated construction footprint; ▪ As far as possible, concrete mixing should be restricted to the contractor laydown area. Additionally, batter / dagga board mixing trays and impermeable sumps should be provided, onto which any mixed concrete can be deposited while it awaits placing; and ▪ Concrete spilled outside of the demarcated area must be promptly removed and taken to a suitably licensed waste disposal site. <u>With regards to backfilling of the concrete encasing;</u> ▪ Soils removed for excavating the pit should be used as backfill material; ▪ All excavated pits must be compacted to natural soil compaction levels to prevent the formation of preferential surface flow paths and subsequent erosion. Conversely, areas		

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
	compacted as a result of construction activities (within the 5 m buffer zone) must be loosened to natural soil compaction levels; ▪ Any remaining soils following the completion of backfilling of the pits are to be spread out thinly surrounding the installed pylon (outside watercourses) to aid in the natural reclamation process; and ▪ The construction footprint must be limited to the pit area and an additional 5 m buffer (to allow for the stockpiling and movement of personnel). The area must be rehabilitated after the completion of the construction phase, including revegetation thereof with indigenous vegetation. In addition, alien vegetation eradication of the footprint area must be undertaken. <u>Pylons located within preferential flow paths (PFPs):</u> ▪ Should pylons be located in or near preferential flow paths, all mitigation measures as listed in this table is applicable; ▪ It is recommended that gabions be installed around the pylon footprint, as depicted in Figure 23 in Table 10 of the Surface Water Report. Figure 23 of the Surface Water Report depicts an existing power line (power line alternative 2/3/5 proposed to be constructed along this existing power line alignment) within an area hosting PFPs. This allows for surface water to freely drain through the landscape but also protects the base of the pylon from potential erosion.		
Operational Phase			
Watercourse drivers and receptors such	▪ Maintenance vehicles must make use of dedicated access roads and no indiscriminate movement in the watercourses may be permitted;	Holder of the EA	Key sensitive areas avoided

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
as vegetation, geomorphology and sediment balance.	▪ During periodic maintenance activities of the power line and substation, monitoring for erosion should be undertaken with specific mention investigating the pylons located near areas hosting preferential flow paths; ▪ Should erosion be noted at the base of the pylon that may potentially impact on a watercourse in the surrounding area, the area must be rehabilitated by infilling the erosion gully and revegetation thereof with suitable indigenous vegetation; ▪ Monitoring for the establishment for alien and invasive vegetation species must be undertaken, specifically for access roads through or along the watercourses used to service the power line and substation. Should alien and invasive plan species be identified, they must be removed and disposed of as per an alien and invasive species control plan and the area must be revegetated with suitable indigenous vegetation.		Impacts avoided or managed as per specialist recommendations Storm Water Management Plan Ensure the EMPr is adhered to Erosion plan implemented and hydrological measures in place
Decommissioning Phase			
Watercourse drivers and receptors such as hydrology, water quality (when surface water is present), geomorphology, habitat and biota.	▪ No indiscriminate movement of construction equipment in the watercourses and buffer zones surrounding the watercourses may be permitted. Use must be made of the existing roads during the decommissioning phase; ▪ All surface infrastructure must be decommissioned. All materials must be removed and may temporarily be stockpiled outside the watercourses and its 32 m NEMA ZoR, where after is must be removed from site and disposed of at a registered disposal facility; ▪ Should road crossings be decommissioned, road footprint areas within the watercourse must be levelled to the same level and shape as that of the upstream and downstream	Holder of the EA	All waste managed according to approved Method Statement Ensure the EMPr is adhered to Alien Plant Management Plan Implemented Plant Rehabilitation Implemented

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
	reaches. This will ensure a continuous bed level and prevent any concentration of surface flow from occurring; ▪ Watercourse embankments must be suitably rehabilitated (shaped and revegetated) to prevent any erosion from occurring; ▪ All infrastructure footprint areas must be ripped and be revegetated within suitable indigenous vegetation species; ▪ All areas revegetated must be monitored until suitable basal cover has been re-established. Follow up revegetation should take place in areas where initial revegetation is not successful; ▪ It is recommended that a Watercourse Rehabilitation and Management Plan be compiled and implemented once the layout plan has been finalised. Implementation must be overseen by a suitably qualified Environmental Control Officer (ECO) and the ECO must sign off the rehabilitation before the relevant contractors leave site; and ▪ Post-closure monitoring of the watercourses (for a period of 3 years), with specific mention of the invasion of alien vegetation species) is recommended to be undertaken.		
Cumulative			
Drainage system habitat integrity and hydrological functioning	▪ The mitigation measures pertaining to the grading roads or upgrading of existing informal roads must be adhered to, specifically to avoid erosion and only allow road crossings where authorised; ▪ Continuous and more frequent use of the roads and movement within the watercourses and surrounding buffer areas during the life of the proposed development may compromise the integrity of the watercourses. As such it is highly recommended that a Watercourse Maintenance and	Holder of the EA	Key sensitive areas avoided Watercourse Maintenance and Management Plan (WMMP) implemented Impacts avoided or managed as per specialist recommendations

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
	Management Plan (WMMP) be implemented, to avoid any unnecessary impacts and to ensure adequate mitigation of activities that may directly impact on the watercourses, in order to avoid extensive cumulative impacts from occurring. This WMMP must detail: o Alien and invasive plant species control; o Sediment and erosion control; and o Hydrological connectivity.		Storm Water Management Plan implemented Ensure the EMPr is adhered to Erosion plan implemented and hydrological measures in place Alien Plant Management Plan Implemented

Ecology:

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Pre-Construction / Design Phase			
Indigenous natural vegetation	▪ Select the route alignment that has the least impact on sensitive receptors. From an ecological perspective, this is considered to be Option 3. ▪ As far as possible, locate infrastructure within or near to areas that have been previously disturbed or in areas with lower sensitivity scores, taking the ecological sensitivity map into account. ▪ Where possible, access roads should be located along existing farm, access and district roads, even if these require upgrading. ▪ Wherever technically possible, avoid sensitive features and habitats when locating infrastructure. ▪ Maintain adequate buffer zones around hydrological features so that these do not become degraded from runoff and erosion. The width of these buffer zones should follow	Holder of the EA	The design fully responds to the recommendations of the specialists Pre-construction walk-through conducted, sensitive areas demarcated Erosion plan implemented and hydrological measures in place Layout takes into account the avifaunal sensitivities The final layout avoids protected plant species, as far as possible

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
	legal requirements and/or the recommendations of the hydrological specialist. ▪ Cross streams and other linear features at right angles, where possible, and also near their endpoints or where there are natural breaks in the feature of concern. ▪ Compile a Rehabilitation Plan prior to the commencement of construction. ▪ It is a legal requirement to obtain permits for individuals of protected species that will be lost. ▪ A Plant Rescue Plan must be compiled to be approved by the appropriate authorities. ▪ Compile and implement a Stormwater Management Plan, which highlights control priorities and areas and provides a programme for long-term control. ▪ Compile and implement an Alien Invasive Plant Management Plan, which highlights control priorities and areas and provides a programme for long-term control. **Monitoring** ▪ None proposed		Impacts to sensitive areas avoided or managed as per specialist recommendations. Equipment placement takes into account identified sensitive areas Storm Water Management Plan compiled Plant Rescue Plan compiled Alien Invasive Plant Management Plan compiled

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Construction Phase			
	▪ Keep construction footprint as small as possible and construction areas must be clearly demarcated and fenced prior to the commencement of construction activities. All construction activities must remain within the boundary of the development area, as demarcated at the start of construction. ▪ Restrict impact to development footprint only and limit disturbance spreading into surrounding areas. ▪ Footprints of laydown areas, construction sites, roads and substation sites should be clearly demarcated. ▪ Ensure all possible steps are taken to limit erosion of surfaces, including proper management of storm-water runoff. ▪ No additional clearing of vegetation should take place without a proper assessment of the environmental impacts and authorization from relevant authorities, unless for maintenance purposes, in which case all reasonable steps should be taken to limit damage to natural areas. ▪ No driving of vehicles off-road outside of construction areas. ▪ Speed limits should be set for all roads on site, as well as access roads to the site. Strict enforcement of speed limits should occur – install speed control measures, such as speed humps, if necessary. ▪ Night driving should be strictly limited and, where absolutely required, lower speed limits should apply for night driving. ▪ No dogs or other pets should be allowed on site, except those confined to landowners' dwellings. ▪ Personnel on site should undergo environmental induction training, including the need to abide by speed limits, the increased risk of collisions with wild animals on roads in rural	Holder of the EA	Impacts avoided or managed as per specialist recommendations Ensure the conditions of the EA are adhered to Compliance to all legislative requirements Ensure the EMPr is adhered to All staff members are aware of the EMPr requirements relevant to them Plant Rehabilitation Implemented Plant Rescue Plan Implemented Ecological Management Plan Alien Plant Management Plan Implemented Dust monitoring undertaken as per best practice guidelines Rehabilitation monitored

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
	areas, that the intentional killing of any animal is not permitted, that poaching or the intentional killing of animals (even snakes) is illegal and that it must be a condition of employment that any employee caught poaching will be dismissed. ▪ Construction areas must be swept for nests, dens and other habitats prior to construction taking place. ▪ All construction vehicles, equipment and construction material should be free of plant material. They should be thoroughly cleaned prior to access to the construction site, which must be verified by the ECO. ▪ No hunting or collecting of protected species. ▪ Report any illegal collection to conservation authorities. ▪ Report any mortality of protected species to conservation authorities ▪ Proper waste management must be implemented, ensuring no toxic or dangerous substances are accessible to wildlife. This should also apply to stockpiles of new and used materials to ensure that they do not become a hazard. ▪ Excessive dust must be controlled by using appropriate dust-control measures. ▪ Implement control measures on an ongoing basis, according to the Alien Management Plan. ▪ Appropriate lighting should be installed to minimize impacts on nocturnal animals, as per visual specialist assessment. ▪ Construction activities should not be undertaken at night. ▪ Do NOT use any alien plants during rehabilitation. **Monitoring** ▪ Dust monitoring, as per best practice guidelines.		

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
	▪ Rehabilitation must be monitored in order to determine whether methods implemented have been successful.		

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Operational Phase			

	▪ Ensure all possible steps are taken to limit erosion of surfaces, including proper management of storm-water runoff. ▪ No additional clearing of vegetation should take place without a proper assessment of the environmental impacts and authorization from relevant authorities, unless for maintenance purposes, in which case all reasonable steps should be taken to limit damage to natural areas. ▪ No driving of vehicles off-road outside of construction areas. ▪ Speed limits should be set for all roads on site, as well as access roads to the site. Strict enforcement of speed limits should occur – install speed control measures, such as speed humps, if necessary. ▪ Night driving should be strictly limited and, where absolutely required, lower speed limits should apply for night driving. ▪ No dogs or other pets should be allowed on site, except those confined to landowners' dwellings. ▪ Personnel on site should undergo environmental induction training, including the need to abide by speed limits, the increased risk of collisions with wild animals on roads in rural areas, that the intentional killing of any animal is not permitted, that poaching or the intentional killing of animals (even snakes) is illegal and that it must be a condition of employment that any employee caught poaching will be dismissed. ▪ Proper waste management must be implemented, ensuring no toxic or dangerous substances are accessible to wildlife. This should also apply to stockpiles of new and used materials to ensure that they do not become a hazard. ▪ No hunting or collecting of protected species. ▪ Report any illegal collection to conservation authorities.	Holder of the EA	Ensure the EMPr is adhered to Ensure the conditions of the EA are adhered to All staff members are aware of the EMPr requirements relevant to them Plant Rescue Plan Implemented Ecological Management Plan Impacts avoided or managed as per specialist recommendations Alien Plant Management Plan Implemented Plant Rehabilitation Implemented Erosion plan implemented and hydrological measures in place Storm Water Management Plan implemented Ecological Management Plan Implemented All waste managed according to approved Method Statement

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
	▪ Report any mortality of protected species to conservation authorities ▪ Excessive dust must be controlled by using appropriate dust-control measures. ▪ Implement control measures for alien invasive plants, as per the Alien Management Plan. **Monitoring** ▪ For any plants that are transplanted, annual monitoring should take place to assess survival. This should be undertaken for a period of three years after translocation and be undertaken by a qualified botanist. The monitoring programme must be designed prior to translocation of plants and should include control sites to evaluate mortality relative to wild populations. ▪ Undertake regular monitoring to detect erosion features early so that they can be controlled. ▪ Undertake regular monitoring to detect alien invasions early so that they can be controlled. This should include formal monitoring on an annual basis by a qualified botanist for up to five years. Information to be collected should include the identity of any alien invasive species, and the exact location of any individuals or populations/concentrations. Photographic evidence of species occurrences should be collected. Any control measures undertaken should be documented. ▪ Continue monitoring of construction phase rehabilitation.		

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Decommissioning Phase			
	▪ All construction phase measures should be implemented during decommissioning. **Monitoring** ▪ Undertake monitoring to detect alien invasions. This should include formal monitoring on an annual basis by a qualified botanist for up to five years. ▪ Continue monitoring of decommissioning phase rehabilitation.		All waste managed according to approved Method Statement Traffic management Strategy Implemented Ensure the EMPr is adhered to Monitoring to detect alien invasions undertaken Monitoring of decommissioning phase rehabilitation undertaken
Cumulative Impacts			
▪ Indigenous natural vegetation ▪ Listed or protected plant species	▪ Adhere to the site-specific recommendations of the ecologists to ensure that all facilities mitigate impacts where possible. The following buffer(s) must be applied: ▪ The width of buffer zones around hydrological features should follow legal requirements and/or the recommendations of the hydrological specialist. ▪ Buffer zones of a minimum of 20m should be observed around other identified sensitive features.	Holder of the EA	Site-specific recommendations of ecologist adhered to Buffer zones around hydrological features applied and follow legal requirements and/or recommendations of hydrological specialist Min. buffer zones of 20m around identified sensitive features adhered to

Avifauna

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Construction Phase			
Displacement of priority species due to habitat destruction in the substation footprint	▪ Adherence to this CEMPr and should apply good environmental practice during construction. ▪ The minimum footprint areas for infrastructure should be used; ▪ Following construction, rehabilitation of all areas disturbed (e.g. temporary access tracks) must be undertaken and to this end a habitat restoration plan is to be developed by a rehabilitation specialist and implemented accordingly.	Holder of the EA	Impacts avoided or managed as per specialist recommendations Ensure the conditions of the EA are adhered to Compliance to all legislative requirements and best practice guidelines Adherence to the EMPr Noise and lighting managed according to approved Method Statement
Displacement of priority species due to disturbance associated with the construction activities	▪ No off-road driving; ▪ Maximum use of existing roads; ▪ Measures to control noise; ▪ Restricted access to the rest of the property; ▪ Should Corridor Option 3 or 4 be utilised, the avifaunal specialist should conduct an inspection to see if the Martial Eagle nest on Tower 667 of the Droërivier – Kappa 2 400kV transmission line is active. If the nest is not active, the construction activities can proceed without delay. If the nest is occupied, the avifaunal specialist must consult with the contractor to find ways of minimising the potential disturbance to the breeding pair of eagles during the construction period.		
Operation Phase			
Mortality of priority species due to electrocutions in the substation yard	The hardware within the proposed transmission substation yard is too complex to warrant any mitigation for electrocution at this stage. It is recommended that if on-going impacts are recorded once operational, site specific mitigation be applied reactively. This is an acceptable approach because priority avifauna, especially Red Data species, is unlikely to frequent the substation and be electrocuted.	Holder of the EA	Impacts avoided or managed as per specialist recommendations. Ensure the conditions of the EA are adhered to.

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Mortality of priority species due to collisions with the 132kV OHL	▪ It is recommended that the entire grid connection is marked with BFDs if possible. ▪ The operational monitoring programme must include regular monitoring (i.e. quarterly) of the power lines for collision mortalities for at least two years. ▪ If additional collision hot-spots are identified during quarterly monitoring, these sections must be marked with BFDs to reduce the collision risk.		Compliance to all legislative requirements Adherence to the EMPr Operational monitoring programme implemented Noise and lighting managed according to approved Method Statement
Decommissioning Phase			
Displacement of priority species due to disturbance associated with the decommissioning activities	▪ No off-road driving; ▪ Maximum use of existing roads; ▪ Measures to control noise; ▪ Restricted access to the rest of the property; ▪ The avifaunal specialist should conduct an inspection to see if the Martial Eagle nest on Tower 667 of the Droërivier – Kappa 2 400kV transmission line is active. If the nest is not active, the decommissioning activities can proceed without delay. If the nest is occupied, the avifaunal specialist must consult with the contractor to find ways of minimising the potential disturbance to the breeding pair of eagles during the decommissioning period. This could include measures such as delaying some of the decommissioning activities until after the breeding season	Holder of the EA	Impacts avoided or managed as per specialist recommendations Ensure the conditions of the EA are adhered to Compliance to all legislative requirements Noise and lighting managed according to approved Method Statement Adherence to the EMPr
Cumulative impacts			
Displacement of priority species due to habitat	▪ All contractors are to adhere to the CEMPr and should apply good environmental practice during construction. ▪ The minimum footprint areas for infrastructure should be used;	Holder of the EA	Impacts avoided or managed as per specialist recommendations

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
destruction in the substation footprint	▪ Following construction, rehabilitation of all areas disturbed (e.g. temporary access tracks) must be undertaken and to this end a habitat restoration plan is to be developed by a rehabilitation specialist and implemented accordingly.		Ensure the conditions of the EA are adhered to Compliance to all legislative requirements Adherence to the EMPr Operational monitoring programme implemented
Displacement of priority species due to disturbance associated with the construction activities	▪ No off-road driving; ▪ Maximum use of existing roads; ▪ Measures to control noise; ▪ Restricted access to the rest of the property; ▪ The avifaunal specialist must consult with the contractor to find ways of minimising the potential disturbance to breeding eagles on existing HV lines during the construction period.		
Mortality of priority species due to electrocutions in the substation yard	The hardware within the proposed transmission substation yard is too complex to warrant any mitigation for electrocution at this stage. It is recommended that if on-going impacts are recorded once operational, site specific mitigation be applied reactively. This is an acceptable approach because priority avifauna, especially Red Data species, is unlikely to frequent the substation and be electrocuted.		
Mortality of priority species due to collisions with the 132kV OHL	▪ The operational monitoring programme must include regular monitoring (i.e. quarterly) of the power lines for collision mortalities.		
Displacement of priority species due to disturbance associated with the	▪ No off-road driving; ▪ Maximum use of existing roads; ▪ Measures to control noise; ▪ Restricted access to the rest of the property; ▪ The avifaunal specialist must consult with the contractor to find ways of minimising the potential disturbance to breeding		

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
decommissioning activities	eagles on existing HV lines during the de-commissioning period.		

Heritage

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Construction Phase			
Impacts to archaeological Heritage resources	▪ 50m buffer area imposed around known archaeological resources ▪ 100m buffer area imposed around burial grounds and graves ▪ Should any previously unknown archaeological resources be impacted during construction, work must cease in the vicinity of the find and the relevant heritage authority must be contacted	Holder of the EA	Impacts to heritage resources managed and avoided as far as possible Chance Find Procedure Implemented Heritage Management Plan Implemented Cultural Management Plan implemented Buffer areas being maintained / adhered to Cultural landscape sensitivity guidelines adopted
Impacts to palaeontological resources	▪ 50m buffer area imposed around known palaeontological resources ▪ Implementation of the HWC Chance Fossil Finds Procedure		
Impacts to the cultural landscape	▪ 100m buffer area imposed around river confluences ▪ 100m buffer around instances where the historic truck road crosses a river ▪ 50m buffer around the historic trunk road ▪ No-go areas for the Baakesnrivier ▪ CLA and the Gatsrivier CLA ▪ Sensitivity regarding significant ridge lines ▪ Adoption of the cultural landscape sensitivity guidelines in section 5.4 of HIA Report		
Operational Phase			
Impacts to archaeological	▪ 50m buffer area imposed around known archaeological resources ▪ 100m buffer area imposed around burial grounds and graves	Holder of the EA	

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Heritage resources	▪ Should any previously unknown archaeological resources be impacted during construction, work must cease in the vicinity of the find and the relevant heritage authority must be contacted		Impacts to heritage resources managed and avoided as far as possible
Impacts to palaeontological resources	▪ 50m buffer area imposed around known palaeontological resources ▪ Implementation of the HWC Chance Fossil Finds Procedure		Chance Find Procedure Implemented Heritage Management Plan Implemented
Impacts to the cultural landscape	▪ 100m buffer area imposed around river confluences ▪ 100m buffer around instances where the historic truck road crosses a river ▪ 50m buffer around the historic trunk road ▪ 'No-go' areas for the Baakens Rivier CLA and the Gatsrivier CLA ▪ Sensitivity regarding significant ridge lines ▪ Adoption of the cultural landscape sensitivity guidelines in section 5.4 of HIA Report		Cultural Management Plan implemented Buffer areas being maintained / adhered to Cultural landscape sensitivity guidelines adopted
Decommissioning Phase			
Impacts to archaeological Heritage resources	▪ 50m buffer area imposed around known archaeological resources ▪ 100m buffer area imposed around burial grounds and graves ▪ Should any previously unknown archaeological resources be impacted during construction, work must cease in the vicinity of the find and the relevant heritage authority must be contacted	Holder of the EA	
Impacts to palaeontological resources	▪ 50m buffer area imposed around known palaeontological resources ▪ Implementation of the HWC Chance Fossil Finds Procedure		

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Impacts to the cultural landscape	▪ 100m buffer area imposed around river confluences ▪ 100m buffer around instances where the historic truck road crosses a river ▪ 50m buffer around the historic trunk road ▪ No-go areas for the Baakens Rivier CLA and the Gatsrivier CLA ▪ Sensitivity regarding significant ridge lines ▪ Adoption of the cultural landscape sensitivity guidelines in section 5.4 of HIA Report		Impacts to heritage resources managed and avoided as far as possible Chance Find Procedure Implemented Heritage Management Plan Implemented Cultural Management Plan implemented Buffer areas being maintained / adhered to Cultural landscape sensitivity guidelines adopted
Cumulative Impacts			
Impacts to archaeological Heritage resources	▪ 50m buffer area imposed around known archaeological resources ▪ 100m buffer area imposed around burial grounds and graves ▪ Should any previously unknown archaeological resources be impacted during construction, work must cease in the vicinity of the find and the relevant heritage authority must be contacted	Holder of the EA	
Impacts to palaeontological resources	▪ 50m buffer area imposed around known palaeontological resources ▪ Implementation of the HWC Chance Fossil Finds Procedure		

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Impacts to the cultural landscape	▪ 100m buffer area imposed around river confluences ▪ 100m buffer around instances where the historic truck road crosses a river ▪ 50m buffer around the historic trunk road ▪ No-go areas for the Baakens Rivier CLA and the Gatsrivier CLA ▪ Sensitivity regarding significant ridge lines ▪ Adoption of the cultural landscape sensitivity guidelines in section 5.4 of HIA Report		Impacts to heritage resources managed and avoided as far as possible Chance Find Procedure Implemented Heritage Management Plan Implemented Cultural Management Plan implemented Buffer areas being maintained / adhered to Cultural landscape sensitivity guidelines adopted

Socio-Economic:

Impact	*Impact Management Actions*	*Responsibility*	*Impact Management Outcome*
Construction Phase			
Increase in crime	▪ Ensure that construction workers are identifiable. All workers should carry identification cards and wear identifiable clothing. ▪ Encourage local people to report any suspicious activity associated with the construction sites through the establishment of a community liaison forum. ▪ Prevent loitering within the vicinity of the construction camp and construction sites.	Holder of the EA	

Increased risk of HIV infections	▪ Ensure that an onsite HIV Infections Policy is in place and that construction workers have easy access to condoms. ▪ Expose workers to a health and HIV/AIDS awareness educational program.		Construction workers identifiable (carrying identification cards and wearing identifiable clothing) Community Liaison Forum established and implemented All staff members are aware of the EMPr requirements relevant to them Onsite HIV Infections Policy implemented Health and HIV/AIDS awareness educational program implemented Ensure effective communication with the community and Key Stakeholders Thorough induction to site undertaken Impacts avoided or managed as per specialist recommendations Recruitment policy drawn up in consultation with Community Leaders and Ward Councillors of area and implemented
Influx of construction workers	▪ Communicate the limitation of opportunities created by the project through Community Leaders and Ward Councillors. ▪ Draw up a recruitment policy in consultation with the Community Leaders and Ward Councillors of the area and ensure compliance with this policy.		
Hazard exposure	▪ Ensure all construction equipment and vehicles are properly maintained at all times. ▪ Ensure that operators and drivers are properly trained and make them aware, through regular toolbox talks, of any risk they may pose to the community. Place specific emphasis on the vulnerable sector of the population, such as children and the elderly. ▪ Ensure that fires lit by construction staff are only ignited in designated areas and that the appropriate safety precautions, such as not lighting fires in strong winds and completely extinguishing fires before leaving them unattended, are strictly adhered to. ▪ Make staff aware of the dangers of fire during regular toolbox talks.		
Disruption of daily living patterns	▪ Ensure that, at all times, people have access to their properties and to social facilities.		
Job creation and skills development	▪ Wherever feasible, local residents should be recruited to fill semi and unskilled jobs. ▪ Women should be given equal employment opportunities and encouraged to apply for positions.		

	▪ A skills transfer plan should be put in place at an early stage and workers should be given the opportunity to develop skills which they can use to secure jobs elsewhere post-construction.		Appropriate safety precautions for fires etc. implemented All environmental incidents and community complaints are adequately dealt with Procurement policy implemented Public grievance and incident register implemented and monitored Fair employment practices in place Maintain a "locals first" recruitment policy as far as possible
Socio-economic stimulation	▪ A procurement policy promoting the use of local business should, where possible, be put in place to be applied throughout the construction phase.		
Construction Phase Monitoring: A public grievance and incident register should be established and should be monitored internally by the developer and made available for public scrutiny if requested. Any incident should be immediately recorded and reported to management and all actions pertaining to that incident, as well as the final outcome of the complaint, should be recorded and signed off by management. If an independent environmental monitor is appointed this register should be audited on at least a monthly basis.			
Operation Phase			
Electromagnetic fields	▪ Ensure that were ever possible the power line is routed away from areas of high human and animal habitat. ▪ Establish a grievance mechanism and deal with grievances transparently.	Holder of the EA	Transparent grievance mechanism implemented and monitored Impacts avoided or managed as per specialist recommendations
Transformation of the sense of place	▪ Apply the mitigation measures suggested in the Visual Impact Assessment Report. ▪ A Grievance Mechanism should be initiated and all grievances should be dealt with transparently. ▪ The mitigation measures recommended in the Heritage and Palaeontology Impact Assessment should be followed.		
Socio-economic stimulation	The power line will revert to Eskom and become an Eskom asset over the operational phase. Consequently, optimisation measures as they apply in respect to similar Eskom assets would also apply in this in this case.		

Operation Phase Monitoring: The project will become an Eskom asset after commissioning and would fall under the control of Eskom. Consequently, it must be subjected to the same monitoring protocol applied to all similar Eskom assists.			
Decommissioning Phase			
N/A	The time lag between constructing and decommissioning the project is extensive and, as the social environment is highly dynamic, it is meaningless to attach measurements. In addition, once the project is commissioned it becomes an Eskom asset, which could extend the life of the power line.		
Cumulative impacts			
N/A	No measures are suggested in respect of cumulative impacts as these impacts would, in large, need to be addressed by the responsible authorities as they are beyond the control of project developers. For instance, the policing authorities can only address an increase in crime, due to a proliferation of activity in the area as it is beyond the scope of individual project developers. In much the same vein, an increased risk of HIV in the area would need to be addressed by the relevant health authorities.		

Visual:

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Construction Phase			
▪ Potential alteration of the visual character and sense of place ▪ Potential visual impact on receptors in the study area	▪ Carefully plan to mimimise the construction period and avoid construction delays. ▪ Inform receptors of the construction programme and schedules. ▪ Minimise vegetation clearing and rehabilitate cleared areas as soon as possible. ▪ Vegetation clearing should take place in a phased manner. ▪ Maintain a neat construction site by removing rubble and waste materials regularly. ▪ Make use of existing gravel access roads where possible. ▪ Limit the number of vehicles and trucks travelling to and from the construction site, where possible. ▪ Ensure that dust suppression techniques are implemented: o on all access roads; o in all areas where vegetation clearing has taken place; o on all soil stockpiles.	Holder of the EA	Clear communication channels for receptors established Noise and lighting managed according to approved Method Statement Ensure the EMPr is adhered to Impacts avoided or managed as per specialist recommendations Implementation of Plant Rehabilitation Plan All waste managed according to approved Method Statement Dust management plan implemented

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
Operation Phase			
▪ Potential alteration of the visual character and sense of place. ▪ Potential visual impact on receptors in the study area. ▪ Potential visual impact on the night time visual environment.	▪ As far as possible, limit the number of maintenance vehicles using access roads. ▪ As far as possible, limit the amount of security and operational lighting at the proposed substations. ▪ Light fittings for security at night should reflect the light toward the ground and prevent light spill. ▪ Lighting fixtures should make use of minimum lumen or wattage. ▪ Mounting heights of lighting fixtures should be limited, or alternatively, foot-light or bollard level lights should be used. ▪ If possible, make use of motion detectors on security lighting. ▪ Buildings on the substation site should be painted with natural tones that fit with the surrounding environment. ▪ Non-reflective surfaces should be utilised where possible.	Holder of the EA	Clear communication channels for receptors established Lighting managed according to approved Method Statement Ensure the EMPr is adhered to Impacts avoided or managed as per specialist recommendations
Decommissioning Phase			
▪ Potential visual intrusion resulting from vehicles and equipment involved in the decommissioning process; ▪ Potential visual impacts of increased dust emissions from decommissioning activities and related traffic; and ▪ Potential visual intrusion of any	▪ All infrastructure that is not required for post-decommissioning use should be removed. ▪ Carefully plan to minimize the decommissioning period and avoid delays. ▪ Maintain a neat decommissioning site by removing rubble and waste materials regularly. ▪ Ensure that dust suppression procedures are maintained on all gravel access roads throughout the decommissioning phase. ▪ All cleared areas should be rehabilitated as soon as possible. ▪ Rehabilitated areas should be monitored post-decommissioning and remedial actions implemented as required.	Holder of the EA	Noise and lighting managed according to approved Method Statement A traffic management Strategy Implemented All staff members are aware of the EMPr requirements relevant to them Plant Rehabilitation Implemented Dust management plan implemented

Impact	Impact Management Actions	Responsibility	Impact Management Outcome
remaining infrastructure on the site.			
Cumulative impacts			
▪ Potential alteration of the visual character and sense of place in the broader area. ▪ Potential visual impact on receptors in the study area. ▪ Potential visual impact on the night time visual environment.	▪ Minimise vegetation clearing and rehabilitate cleared areas as soon as possible. ▪ Vegetation clearing should take place in a phased manner. ▪ As far as possible, limit the number of maintenance vehicles using access roads. ▪ As far as possible, limit the amount of security and operational lighting at the proposed substations. ▪ Light fittings for security at night should reflect the light toward the ground and prevent light spill. ▪ Lighting fixtures should make use of minimum lumen or wattage. ▪ Mounting heights of lighting fixtures should be limited, or alternatively, foot-light or bollard level lights should be used. ▪ If possible, make use of motion detectors on security lighting. ▪ Buildings on the substation site should be painted with natural tones that fit with the surrounding environment. ▪ Non-reflective surfaces should be utilised where possible. ▪ Ensure that appropriate dust suppression techniques are implemented on all gravel access roads.	Holder of the EA	Noise and lighting managed according to approved Method Statement A traffic management Strategy Implemented All staff members are aware of the EMPr requirements relevant to them Plant Rehabilitation Implemented Dust management plan implemented

APPENDIX 1: METHOD STATEMENTS

To be prepared by the contractor prior to commencement of the activity. The method statements are **not required** to be submitted to the CA.