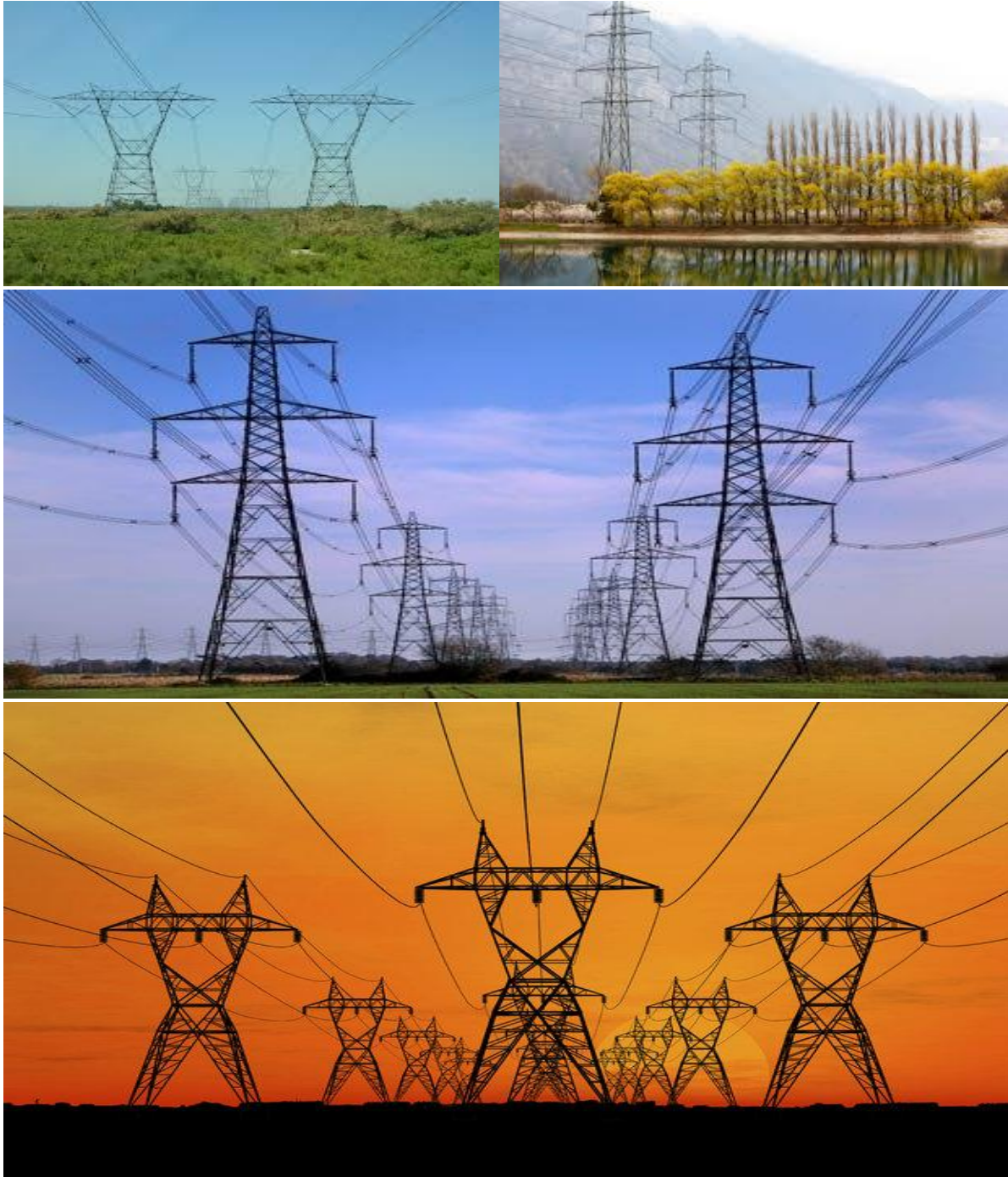


APPENDIX 1
GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE
DEVELOPMENT AND EXPANSION FOR OVERHEAD ELECTRICITY
TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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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 overhead electricity transmission and distribution infrastructure, 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 overhead electricity transmission and distribution infrastructure. 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 overhead electricity transmission and distribution infrastructure requiring EA in terms of NEMA, i.e. with a capacity of 33 kilovolts or more. 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 realisation 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	<p>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 overhead electricity transmission and distribution infrastructure, which are presented in the form of a template that has been pre-approved.</p> <p>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.</p> <p>Where an impact management outcome is not relevant, the words “not applicable” can be inserted in the template under the “responsible persons” column.</p> <p>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.</p> <p>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.</p>
	2	Site specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA will comply with the pre-approved generic EMPr template contained in <u>Part B: Section 1</u> , and

Part	Section	Heading	Content
			<p>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 actions have been either pre-approved or approved in terms of <u>Part C</u>.</p> <p>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 <u>Part B: section 2</u> not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.</p>
C		Site specific sensitivities/ attributes	<p>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 (<u>Part B: section 1</u>)</p> <p>This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if <u>Part C</u> 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 approved, Part C forms part of the EMPr for the site and is legally binding.</p>

Part	Section	Heading	Content
			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 <u>Part B: section 1</u> .
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 corridor in which the proposed overhead electricity transmission and distribution 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. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps must identify features both within the planned working area and any known sensitive features in the surrounding landscape within 50m from the development footprint. The overhead transmission and distribution profile must be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions must be used.

Sub-section 3 is the declaration that the applicant/proponent 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 EMP template in Section 1 and understands that the impact management outcomes and 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 EMP for the development and the EMP 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 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; and

“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)	<p><u>Role</u></p> <p>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.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> - 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.
Developer Site Supervisor (DSS)	<u>Role</u>

Responsible Person (s)	Role and Responsibilities
	<p>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.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> - 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)	<p><u>Role</u></p> <p>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.</p> <p>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 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.</p>

Responsible Person (s)	Role and Responsibilities
	<p><u>Responsibilities</u></p> <p>The responsibilities of the ECO will include the following:</p> <ul style="list-style-type: none"> - 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; - 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.

Responsible Person (s)	Role and Responsibilities
<p>developer Environmental Officer (dEO)</p>	<p><u>Role</u></p> <p>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.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> - 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; - 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;
<p>Contractor</p>	<p><u>Role</u></p> <p>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</p>

Responsible Person (s)	Role and Responsibilities
	<p>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 for overhead electricity transmission and distribution infrastructure activities.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> - 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.
contractor Environmental Officer (cEO)	<p><u>Role</u></p> <p>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:</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> - 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;

Responsible Person (s)	Role and Responsibilities
	<ul style="list-style-type: none"> - 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 overhead electricity transmission and distribution 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. At 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 , 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 must be included in the EMPr file and be submitted to the CA at intervals as indicated in the EA.

An Environmental Audit Report must be prepared monthly. 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 overhead electricity transmission and distribution infrastructure. There is a list of aspects identified for the development or expansion of overhead electricity transmission and distribution infrastructure, 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 overhead electricity transmission and distribution infrastructure.

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 contractor 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.

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
<ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> a) Safety notifications; and b) No littering. - Environmental awareness training must include as a minimum the following: <ul style="list-style-type: none"> a) Description of significant environmental impacts, actual or potential, related to their work activities; b) Mitigation measures to be implemented when carrying out specific activities; 	<p>Holder of the EA / EPR Contractor</p>	<p>ESA to induct Staff</p>	<p>Anytime new staff begin duties</p>	<p>EPC contractor</p>	<p>Anytime new staff begin duties</p>	<p>Attendance Register / Monthly Environmental Control Report.</p>

<p>c) Emergency preparedness and response procedures;</p> <p>d) Emergency procedures;</p> <p>e) Procedures to be followed when working near or within sensitive areas;</p> <p>f) Wastewater management procedures;</p> <p>g) Water usage and conservation;</p> <p>h) Solid waste management procedures;</p> <p>i) Sanitation procedures;</p> <p>j) Fire prevention; and</p> <p>k) Disease prevention.</p> <p>– A record of all environmental awareness training courses undertaken as part of the EMPr must be available;</p> <p>– Educate workers on the dangers of open and/or unattended fires;</p> <p>– A staff attendance register of all staff to have received environmental awareness training must be available.</p> <p>– Course material must be available and presented in appropriate languages that all staff can understand.</p>						
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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
<ul style="list-style-type: none"> – 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. 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Prior to commencement of construction	ECO / ESA	Daily	Monthly Environmental control reports

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
<ul style="list-style-type: none"> - 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. 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

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

<ul style="list-style-type: none"> - Access to the servitude and tower positions must be negotiated with the relevant landowner and must fall within the assessed and authorised area; - An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities; - The access roads to tower positions must be signposted after access has been negotiated and before the commencement of 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 pre-planned and approved roads. 	<p>EPC Contractor</p>	<p>Actions outlined in this section and submission of a method statement for approval by Engineer and ECO</p>	<p>Throughout construction</p>	<p>ECO / ESA</p>	<p>Daily</p>	<p>Monthly Environmental control reports</p>
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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
<ul style="list-style-type: none"> - 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 overhead transmission 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

<p>and distribution electricity infrastructure development activities;</p> <ul style="list-style-type: none"> - Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where appropriate and would not cause harm to the sensitive flora; - 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. 						
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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

<ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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. 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports	ECO
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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
<ul style="list-style-type: none"> - 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; 	EPC Contractor	Actions outlined in this section and submission of a method	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

<ul style="list-style-type: none"> - 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; - 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. 		<p>statement for approval by Engineer and ECO</p>				
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5.8 Solid and hazardous waste management

Impact management outcome: Waste is 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
<ul style="list-style-type: none"> - 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; 	<p>EPC Contractor</p>	<p>Actions outlined in this section and submission of a method statement for approval by</p>	<p>Throughout construction</p>	<p>ECO / ESA</p>	<p>Daily</p>	<p>Monthly Environmental control reports</p>

<ul style="list-style-type: none"> - 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; - 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. 		Engineer and ECO				
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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
<ul style="list-style-type: none"> - 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; 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

<ul style="list-style-type: none"> - Where possible, no development equipment must traverse any seasonal or permanent wetland - 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 lower 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: <ul style="list-style-type: none"> 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. 		Engineer and ECO				
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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
<p>General:</p> <ul style="list-style-type: none"> – 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 Department of Agriculture, Forestry and Fisheries 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; 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

<ul style="list-style-type: none"> - 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. <p>Servitude:</p> <ul style="list-style-type: none"> - Vegetation that does not grow high enough to cause interference with overhead transmission and distribution infrastructures, or cause a fire hazard to any plantation, must not be cut or trimmed unless it is growing in the road access area, and then only at the discretion of the Project Manager; - Where clearing for access purposes is essential, the maximum width to be cleared within the servitude must be in accordance to distance as agreed between the land owner and the EA holder - Alien invasive vegetation must be removed according to a plan (in line with relevant municipal and provincial procedures, guidelines and recommendations) and disposed of at a recognised waste disposal facility; - Vegetation must be trimmed where it is likely to intrude on the minimum vegetation clearance distance (MVCD) or will intrude on this distance before the next scheduled clearance. MVCD is determined from SANS 10280; - Debris resulting from clearing and pruning must be disposed of at a recognised waste disposal facility, unless the landowners wish to retain the cut vegetation; 					
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<ul style="list-style-type: none"> - In the case of the development of new overhead transmission and distribution infrastructures, a one metre "trace-line" must be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along the "trace-line". Alternative methods of stringing which limit impact to the environment must always be considered. 						
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5.11 Protection of fauna

Impact management outcome: Minimise disturbance to fauna.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> - 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; - 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; - Nesting sites on existing parallel lines must be documented; - Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds; - Bird guards and diverters must be installed on the new line as per the recommendations of the specialist; 	<p>EPC Contractor</p>	<p>Actions outlined in this section and submission of a method statement for approval by Engineer and ECO</p>	<p>Throughout construction</p>	<p>ECO / ESA</p>	<p>Daily</p>	<p>Monthly Environmental control reports</p>

<ul style="list-style-type: none"> - 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. 					
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5.12 Protection of heritage resources

Impact management outcome: Minimise impact to heritage resources.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> - 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; - 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 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

a systematic and professional investigation can be undertaken. Sufficient time must be allowed to remove/collect such material before development recommences.						
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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
<ul style="list-style-type: none"> - 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; - Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged. 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

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
<ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> 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; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

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.						
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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
<ul style="list-style-type: none"> – 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. 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

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
<ul style="list-style-type: none"> - 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). 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

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

<ul style="list-style-type: none"> - 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 the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall); 	<p>EPC Contractor</p>	<p>Actions outlined in this section and submission of a method statement for approval by Engineer and ECO</p>	<p>Throughout construction</p>	<p>ECO / ESA</p>	<p>Daily</p>	<p>Monthly Environmental control reports</p>
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<ul style="list-style-type: none"> - 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 banded 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. 					
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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
<ul style="list-style-type: none"> - 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. 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

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
<ul style="list-style-type: none"> - 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; 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

– Temporary fencing must be erected around batching plants in accordance with Section 5.5: Fencing and gate installation.						
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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
<ul style="list-style-type: none"> – 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; 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

<ul style="list-style-type: none"> - 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. 						
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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
<ul style="list-style-type: none"> - 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. 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

5.22 Noise

Impact Management outcome: Unnecessary noise is prevented by ensuring that noise from construction activities is mitigated.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> - 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. 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

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
<ul style="list-style-type: none"> - 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 swap of contact details between ECO and FPA. 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

5.24 Stockpiling and stockpile areas

Impact management outcome: Erosion and sedimentation as a result of stockpiling are reduced.

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

<ul style="list-style-type: none"> - 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. 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports
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5.25 Finalising tower positions

Impact management outcome: No environmental degradation occurs as a result of the survey and pegging operations.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> - No vegetation clearing must occur during survey and pegging operations; - No new access roads must be developed to facilitate access for survey and pegging purposes; - Project manager, botanical specialist and contractor to agree on final tower positions based on survey within assessed and approved areas; 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

<ul style="list-style-type: none"> - The surveyor is to demarcate (peg) access roads/tracks in consultation with ECO. No deviations will be allowed without the prior written consent from the ECO. 		Engineer and ECO				
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5.26 Excavation and Installation of foundations

Impact management outcome: No environmental degradation occurs as a result of excavation or installation of foundations.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> - All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a recognised disposal 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; - 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. - Batching of cement to be undertaken in accordance with Section 5.19 : Batching plants; - Residual cement must be disposed of in accordance with Section 5.8: Solid and hazardous waste management. 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

5.27 Assembly and erecting towers

Impact management outcome: No environmental degradation occurs as a result of assembly and erecting of towers.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> - Prior to erection, assembled towers and tower sections must be stored on elevated surface (suggest wooden blocks) to minimise damage to the underlying vegetation; - In sensitive areas, tower assembly must take place off-site or away from sensitive positions; - The crane used for tower assembly must be operated in a manner which minimises impact to the environment; - The number of crane trips to each site must be minimised; - Wheeled cranes must be utilised in preference to tracked cranes; - Consideration must be given to erecting towers by helicopter or by hand where it is warranted to limit the extent of environmental impact; - Access to tower positions to be undertaken in accordance with access requirements in specified in Section 8.4: Access Roads; - Vegetation clearance to be undertaken in accordance with general vegetation clearance requirements specified in Section 8.10: Vegetation clearing; - No levelling at tower sites must be permitted unless approved by the Development Project Manager or Developer Site Supervisor; 	<p>EPC Contractor</p>	<p>Actions outlined in this section and submission of a method statement for approval by Engineer and ECO</p>	<p>Throughout construction</p>	<p>ECO / ESA</p>	<p>Daily</p>	<p>Monthly Environmental control reports</p>

<ul style="list-style-type: none"> - Topsoil must be removed separately from subsoil material and stored for later use during rehabilitation of such tower sites; - Topsoil must be stored in heaps not higher than 1m to prevent destruction of the seed bank within the topsoil; - Excavated slopes must be no greater than 1:3, but where this is unavoidable, appropriate measures must be undertaken to stabilise the slopes; - Fly rock from blasting activity must be minimised and any pieces greater than 150 mm falling beyond the Working Area, must be collected and removed; - Only existing disturbed areas are utilised as spoil areas; - Drainage is provided to control groundwater exit gradient with the spill areas such that migration of fines is kept to a minimum; - Surface water runoff is appropriately channeled through or around spoil areas; - During backfilling operations, care must be taken not to dump the topsoil at the bottom of the foundation and then put spoil on top of that; - The surface of the spoil is appropriately rehabilitated in accordance with the requirements specified in Section 5.29: Landscaping and rehabilitation; - The retained topsoil must be spread evenly over areas to be rehabilitated and suitably compacted to effect re-vegetation of such areas to prevent erosion as soon as construction activities on the site is complete. Spreading of topsoil must not be undertaken at the beginning of the dry season. 						
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5.28 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
<ul style="list-style-type: none"> - Where possible, previously disturbed areas must be used for the siting of winch and tensioner stations. In all other instances, the siting of the winch and tensioner must avoid Access restricted areas and other sensitive areas; - The winch and tensioner station must be equipped with drip trays in order to contain any fuel, hydraulic fuel or oil spills and leaks; - Refueling of the winch and tensioner stations must be undertaken in accordance with Section 5.17: Hazardous substances; - In the case of the development of overhead transmission and distribution infrastructure, a one metre "trace-line" may be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along "trace-lines". Vegetation clearing must be undertaken by hand, using chainsaws and hand held implements, with vegetation being cut off at ground level. No tracked or wheeled mechanised equipment must be used; - Alternative methods of stringing which limit impact to the environment must always be considered e.g. by hand or by using a helicopter; 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by Engineer and ECO	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

<ul style="list-style-type: none"> - Where the stringing operation crosses a public or private road or railway line, the necessary scaffolding/ protection measures must be installed to facilitate access. If, for any reason, such access has to be closed for any period(s) during development, the persons affected must be given reasonable notice, in writing; - No services (electrical distribution lines, telephone lines, roads, railways lines, pipelines fences etc.) must be damaged because of stringing operations. Where disruption to services is unavoidable, persons affected must be given reasonable notice, in writing; - Where stringing operations cross cultivated land, damage to crops is restricted to the minimum required to conduct stringing operations, and reasonable notice (10 work days minimum), in writing, must be provided to the landowner; - Necessary scaffolding protection measures must be installed to prevent damage to the structures supporting certain high value agricultural areas such as vineyards, orchards, nurseries. 						
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5.29 Socio-economic

Impact management outcome: Socio-economic development is enhanced.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> - Develop and implement communication strategies to facilitate public participation; 	EPC Contractor	Actions outlined in this section and submission	Throughout construction	ECO / ESA	Daily	Monthly Environment

<ul style="list-style-type: none"> - 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. 		<p>of a method statement for approval by Engineer and ECO</p>				<p>al control reports</p>
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5.30 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
<ul style="list-style-type: none"> - Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in sections 5.17: management of 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; 	<p>EPC Contractor</p>	<p>Actions outlined in this section and submission of a method statement for approval by Engineer and ECO</p>	<p>Throughout construction</p>	<p>ECO / ESA</p>	<p>Daily</p>	<p>Monthly Environmental control reports</p>

<ul style="list-style-type: none"> - 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. 					
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5.31 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
<ul style="list-style-type: none"> - All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed to a registered waste site and certificates of disposal provided; 	EPC Contractor	Actions outlined in this section and submission of a method statement for approval by	Throughout construction	ECO / ESA	Daily	Monthly Environmental control reports

<ul style="list-style-type: none"> - 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 tower sites and 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); - 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. 		<p>Engineer and ECO</p>				
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<p>The contract design specifications must be adhered to and implemented strictly;</p> <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> 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 						
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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:

Name of applicant: Onderstepoort (Pty) Ltd,

Tel No: + 27 (21) 418 2596

Fax No: + 27 (0) 86 611 0882

Postal Address: 101, Block A, West Quay Building

7 West Quay Road, Waterfront

Cape Town, 8000

Physical Address: 101, Block A, West Quay Building

7 West Quay Road, Waterfront

Cape Town, 8000

7.1.2 Details and expertise of the EAP:

Name of EAP: Dale Holder (Cape Environmental Assessment Practitioners)

Tel No: 044 8740365

Fax No: 044 884 0432

E-mail address: dale@cape-eaprac.co.za

Expertise of the EAP (Curriculum Vitae included)

7.1.3 **Project name:** Onderstepoort Grid Connection infrastructure

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. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features in the surrounding landscape. The overhead transmission and distribution profile shall be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions shall be used.

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 days prior to the date on which the activity will commence or commencement of construction to facilitate compliance inspections.

Signature Proponent/applicant/ holder of EA

Date: 07 March 2025

To be signed for the Final Basic Assessment Report

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 impact management actions, not included in the pre-approved generic EMPr template, to manage impacts, those impact management outcomes and 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.

Heritage

Area	Mitigation measures	Phase	Timeframe	Responsible party for implementation	Target	Performance indicators (Monitoring tool)
General project area	Implement chance find procedures in case possible heritage finds are uncovered	Construction	Throughout the construction phase	Applicant EAP	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 35, 36 and 38 of NHRA	ECO Checklist/Report
General project area	Monitoring by the ECO.	Construction	Throughout the construction phase	Applicant EAP	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 35, 36 and 38 of NHRA	ECO Checklist/Report
Pylon Positions	<p>The Iron Age site must be avoided with a 30m buffer zone. If avoidance is not possible, the site will require Phase 2 archaeological mitigation, prior to applying for a destruction permit.</p> <p>With avoidance of the site by all surface infrastructure and construction activities, the site can be spanned.</p>	Pre Construction	Pre Construction	Applicant EAP	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 35, 36 and 38 of NHRA	ECO Checklist/Report

Pylon Positions	Ruins along the Northern Corridor – Due to the risk of associated graves, avoidance of the site by surface infrastructure and construction activities is preferable, but the feature can be spanned by the powerline.	Pre Construction	Pre Construction	Applicant EAP	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 35, 36 and 38 of NHRA	ECO Checklist/Report
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VISUAL

Construction and Decommissioning Phase

- An Environmental Control Officer should be appointed during the construction and decommissioning phase to oversee environmental compliance.
- Ensure that vegetation is not unnecessarily cleared or removed during the construction period.
- Reduce the construction period through careful logistical planning and productive implementation of resources.
- Plan the placement of lay-down areas and potential temporary construction camps in order to minimise vegetation clearing (i.e., in already disturbed areas) where possible.
- Restrict the activities and movement of construction workers and vehicles to the immediate construction site and existing access roads.
- Implement good housekeeping through the removal of rubble, litter and construction material, if it is not removed daily to a registered landfill site, then it should be stored appropriately until removal can take place.
- Dust suppression should be implemented during construction especially near roads where dust may cause reduced visibility. Due to a scarcity of water in most parts of South Africa, contractors could source alternative ways to implement dust suppression. One such way could be the use of fine gravel stone on roads with heavy traffic.
- Restrict construction activities to daylight hours in order to negate or reduce the visual impact associated with lighting.
- Rehabilitate all disturbed areas outside the construction footprint immediately after the completion of construction works.

Operation Phase

- Maintenance and good housekeeping of the development.
- Roads must be maintained to eliminate erosion and suppress dust.
- Rehabilitated areas must be monitored for rehabilitation failure and remedial action must then be implemented as and when required.
- Where sensitive visual receptors are likely to be affected (e.g., residents of homesteads in close proximity to the development), it is recommended that the developer enter into negotiations with property owners, if the owner insist, regarding the potential screening of visual impacts at the receptor site. This may entail the planting of vegetation or trees. Visual screening has been found to be most effective when placed at the receptor itself.
- Similar screening (e.g., vegetation barriers or vegetation berms) may be considered, but is not a requirement, along boundaries of the development that is adjacent to busy roads, mitigating the potential visual impact on observers travelling along the road.

Monitoring Requirements

- The Environmental Control Officer (ECO) and / or Environmental Liaison Officer (ELO) should monitor the amount of litter on site during construction on a daily basis to ensure litter prevention.
- The ECO and / or ELO should monitor housekeeping during construction to ensure neat and tidy laydown areas.
- The ECO and / or ELO should monitor the amount of dust seen on and surrounding the site during construction. Dust suppression should be implemented as required.
- The ECO and / or ELO should ensure and monitor all rehabilitation after construction for at least the first 6 months to ensure all vegetation is established in a proper and healthy way. This will also depend on the amount of rainfall and season after construction which might shorten the monitoring requirement.
- Permanent workforce should monitor the health and progress of the added vegetation to ensure proper screening is maintained. This monitoring can be implemented for at least the first 3 years after construction **IF** drought tolerant vegetation is added, otherwise on a permanent basis.
- Any other monitoring requirements set out by the EA, EMP and SACAA.

TERRESTRIAL ECOLOGY

Management outcome: Vegetation and Habitats				
Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
No construction of pylons may occur in the water resource habitats (i.e., unchanneled valley bottom and drainage line), and OHLs must span these areas without infringing on them.. These areas should be declared 'no-go' areas for the life of the operation.	Planning Phase, Pre-Construction	Project Manager, Environmental Officer & Contractor	Water resource habitats	Ongoing
Laydown and construction preparation activities (such as cement mixing, temporary toilets, etc.) must be limited to already modified areas of an overall Low SEI, preferably beyond the boundaries of either the southern or northern corridor and should take up the smallest footprint possible.	Construction Phase	Project manager, Environmental Officer	Development footprint	Ongoing
It is recommended that areas to be developed/disturbed be specifically demarcated so that during the construction/activity phase, only the demarcated areas be impacted upon.	Construction Phase	Project manager, Environmental Officer	Development footprint	Ongoing
Areas of indigenous vegetation, even secondary/disturbed communities outside of the direct project footprint, should not be fragmented or disturbed further.	Construction Phase	Project manager, Environmental Officer	Development footprint	Ongoing
All vehicles and personnel must make use of existing roads and walking paths as far as possible, especially construction/operational vehicles. There is an expansive road network that bisects and occurs around the PAOI. These should be utilised.	Construction Phase	Project manager, Environmental Officer	Development footprint	Ongoing
The clearing of vegetation must be minimised where possible. All activities must be restricted to within the authorised areas.	Life of operation	Project manager, Environmental Officer	Areas of indigenous vegetation	Ongoing
Any observed protected plants that were undetected during the field survey must be clearly demarcated prior to the commencement of site clearing. If construction activities are likely to affect any protected plants these individuals must be relocated as part of a plant rescue and protection plan, and a permit must be obtained before doing so. See Site Walkdown section.	Planning Phase	Environmental Officer	Protected plants and SCC	During phase
Materials may not be stored for extended periods of time and must be removed from the PAOI once the construction phase has been concluded. Construction buildings should preferably be prefabricated or constructed of reusable/recyclable materials. No storage of vehicles or equipment is allowed outside of the designated laydown areas.	Construction and Operational Phase	Environmental Officer, Design Engineer, and Contractor	Laydown areas	Ongoing
Areas that are denuded during construction need to be re-vegetated with indigenous vegetation according to a habitat rehabilitation plan, to prevent erosion during flood and wind events and to promote the regeneration of	Operational phase	Environmental Officer & Contractor	Assess the state of rehabilitation and encroachment of alien vegetation	Quarterly for up to two years after the closure

functional habitat. This will also reduce the likelihood of encroachment by alien invasive plant species.				
A habitat rehabilitation plan must be implemented, and areas of bare ground must be revegetated with species indigenous to the region.	Life of Operation	Project manager, Environmental Officer	Rehabilitation	Ongoing
A hydrocarbon spill management plan must be put in place to ensure that should there be any chemical spill out or over that it does not run into the surrounding areas. The Contractor shall be in possession of an emergency spill kit that must always be complete and available on site.				
<ul style="list-style-type: none"> Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use. No servicing of equipment on site unless necessary. All contaminated soil / yard stone shall be treated in situ or removed and be placed in containers. Appropriately contain any generator diesel storage tanks, machinery spills (e.g., accidental spills of hydrocarbons oils, diesel etc.) in such a way as to prevent them from leaking and entering the environment. Construction activities and vehicles could cause spillages of lubricants, fuels and waste material negatively affecting the functioning of the ecosystem. All vehicles and equipment must be maintained, and all re-fuelling and servicing of equipment is to take place in demarcated areas outside of the PAOI. 	Life of operation	Environmental Officer & Contractor	Spill events, Vehicles dripping.	Ongoing
It must be made an offence for any staff member to remove any indigenous plant species from the PAOI or bring any alien species in. This is to prevent the spread of exotic or alien species or the illegal collection of plants.	Life of operation	Project manager, Environmental Officer	Any instances	Ongoing
A fire management plan needs to be compiled and implemented to restrict the impact fire would have on the surrounding areas (this is important for this site considering that most of the PAOI consists of flammable bushveld habitat).	Life of operation	Environmental Officer & Contractor	Fire Management	During Phase
All construction waste must be removed from site at the closure of the construction phase.	Construction phase	Environmental Officer & Contractor	Construction waste	During Phase
Management outcome: Fauna				
Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
A qualified environmental control officer must be on site when activities begin. A site walk through must be performed by a suitably qualified	Construction Phase	Environmental Officer, Contractor	Presence of any floral or faunal SCC	During phase

environmental control officer prior to any activities taking place and any SCC or protected species should be noted (this is particularly important for <i>Kinixys lobatsiana</i>). In situations where the species are observed and must be removed, the proponent may only do so after the required permission/permits have been obtained in accordance with national and provincial legislation. In the abovementioned situation the development and implementation of a search, rescue and recovery program is suggested for the protection of these species. Should animals not move out of the area on their own, relevant specialists must be contacted to advise on how the species can be relocated.				
Clearing and disturbance activities must be conducted in a progressive linear manner, and over several days, to provide an easy escape route for all small mammals and herpetofauna.	Construction Phase	Environmental Officer & Contractor	Progressive land clearing operations and the movement of fauna	Ongoing
The areas to be disturbed must be specifically and responsibly demarcated to prevent the movement of staff or any individual into the surrounding environments, signs must be put up to enforce this.	Construction/Operational Phase	Project manager, Environmental Officer	Infringement into these areas	Ongoing
The duration of the activities should be minimised to as short a term as possible, to reduce the period of disturbance on fauna.	Construction	Project manager, Environmental Officer & Design Engineer	Construction/Closure Phase	Ongoing
Noise must be kept to an absolute minimum during the evenings and at night to minimise all possible disturbances to reptile species and nocturnal mammals.	Construction/Operational Phase	Environmental Officer	Noise levels	Ongoing
No trapping, killing, or poisoning of any wildlife is to be allowed and signs must be put up to enforce this. Monitoring must take place in this regard.	Life of operation	Environmental Officer	Evidence of trapping etc	Ongoing
Outside lighting should be designed and limited to minimise impacts on fauna. Fluorescent and mercury vapor lighting should be avoided, and sodium vapor (green/red) lights should be used wherever possible.	Construction/Operational Phase	Project manager, Environmental Officer & Design Engineer	Light pollution and period of light	Ongoing
All construction and maintenance motor vehicle operators should undergo an environmental induction that includes instruction on the need to comply with speed limits, to respect all forms of wildlife. Speed limits must be enforced to ensure that road killings and erosion is limited.	Life of operation	Health and Safety Officer	Compliance to the training	Ongoing
Schedule activities and operations during least sensitive periods. In this case, activities should take place during the day.	Life of operation	Project manager, Environmental Officer & Design Engineer	Activities should take place during the day	Ongoing
Any holes/deep excavations must be dug in a progressive manner and shouldn't be left open overnight. Should any holes remain open overnight they must be properly covered temporarily to ensure that no small fauna	Planning and Construction	Environmental Officer & Contractor, Engineer	Presence of trapped animals and open holes	Ongoing

species fall in. Holes must be subsequently inspected for fauna prior to backfilling.

If fencing is required: wildlife-permeable fencing with holes large enough for mongoose and other smaller mammals should be installed, the holes must not be placed in the fence where it is next to a major road as this will increase road killings in the area.

Planning and construction	Environmental Officer & Contractor, Engineer	Fauna movement corridor	Ongoing
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Once the development layout has been confirmed, the open areas must be fenced off appropriately pre-construction to allow animals to move or be moved out of these areas before breaking ground activities occur. Prior to vegetation clearing activities, the area to be cleared should be walked on foot by 1-2 individuals to create a disturbance for fauna to move off. This is particularly important for slow moving animals such as *Kinixys lobatsiana*. Sites should be disturbed only prior to the area having to be cleared, not more than 1 day in advance

Planning/Construction Phase	Environmental Officer & Design Engineer	Areas not to be developed and construction direction	Ongoing
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Management outcome: Alien Species

Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Phase	Responsible Party
An Alien Invasive Plant (AIP) Management Plan must be compiled and implemented. This should regularly be updated to reflect the annual change in AIP composition (those species that are categorised as NEMBA 1b).	Life of operation	Project manager, Environmental Officer & Contractor	Manage and assess presence and encroachment of alien vegetation	Twice a year
The footprint area of the construction should be kept to a minimum. The footprint area must be clearly demarcated to avoid unnecessary disturbances to adjacent areas. Footprints of the roads must be kept to prescribed widths.	Construction/Operational Phase	Project manager, Environmental Officer & Contractor	Footprint Area	Life of operation

Management outcome: Dust

Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Phase	Responsible Party
Dust-reducing mitigation measures must be put in place and must be strictly adhered to. This includes the wetting of exposed soft soil surfaces. No non-environmentally friendly suppressants may be used as this could result in the pollution of water sources.	Construction phase	Contractor	Dustfall	Dust monitoring program.

Management outcome: Waste Management

Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Phase	Responsible Party
Waste management must be a priority, and all waste must be collected and stored effectively and responsibly according to a site-specific waste management plan. Dangerous waste such as metal wires and glass must only be stored in fully sealed and secure containers, before being moved off site as soon as possible.	Life of operation	Environmental Officer & Contractor	Waste Removal	Weekly

Litter, spills, fuels, chemical and human waste in and around the PAOI must be minimised and controlled according to the waste management plan.	Construction/Closure Phase	Environmental Officer & Health and Safety Officer	Presence of Waste	Daily
Cement mixing may not be performed on the ground. It is recommended that only closed side drum or pan type concrete mixers be utilised. Any spills must be immediately contained and isolated from the natural environment, before being removed from site.	Construction Phase	Environmental Officer & Contractor	Cement mixing and spills	Every occurrence
Toilets at the recommended Health and Safety standards must be provided. These should be emptied regularly and once no longer required, they must be pumped dry to prevent leakage into the surrounding environment and removed from site.	Life of operation	Environmental Officer & Health and Safety Officer	Number of toilets per staff member. Waste levels	Daily
The Contractor should supply sealable and properly marked domestic waste collection bins and all solid waste collected shall be disposed of at a licensed disposal facility within every 10 days at least.	Life of operation	Environmental Officer & Health and Safety Officer	Availability of bins and the collection of the waste	Ongoing
Where a registered disposal facility is not available close to the PAOI, the Contractor shall provide a method statement with regards to waste management. Under no circumstances may domestic waste be burned on site or buried on open pits.	Life of operation	Environmental Officer, Contractor & Health and Safety Officer	Collection/handling of the waste	Ongoing
Refuse bins will be responsibly emptied and secured. Temporary storage of domestic waste shall be in covered and secured waste skips. Maximum domestic waste storage period will be 10 days.	Life of operation	Environmental Officer, Contractor & Health and Safety Officer	Management of bins and collection of waste	Ongoing, every 10 days

Management outcome: Environmental Awareness Training

Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Phase	Responsible Party
<p>All personnel and contractors are to undergo Environmental Awareness Training. A signed register of attendance must be kept for proof.</p> <p>Discussions are required on sensitive environmental receptors within the PAOI to inform contractors and site staff of the presence of protected species, their identification, conservation status and importance, biology, habitat requirements and management requirements in line with the Environmental Authorisation and within the EMPr.</p> <p>Contractors and employees must all undergo the induction and must be made aware of any sensitive areas to be avoided.</p>	Pre-construction phase	Health and Safety Officer, Environmental Officer	Compliance to the training	Ongoing
Speed limits must be put in place to reduce erosion. Soil surfaces must be wetted as necessary to reduce the dust generated by the project activities. Speed control measures should be put in place to enforce slow speeds.	Life of operation	Project manager, Environmental Officer	Water Runoff from road surfaces	Ongoing
Only existing access routes and walking paths may be made use of. This includes any	Life of operation	Project manager,	Routes used within the area	Ongoing

roads/tracks that will be used for the maintenance of the OHL.		Environmental Officer		
Areas that are denuded during construction and not used during operation need to be re-vegetated with indigenous vegetation to prevent erosion during flood events etc.	Life of operation	Project manager, Environmental Officer	Re-establishment of indigenous vegetation	Progressively
A stormwater management plan must be compiled and implemented if necessary.	Life of operation	Project manager, Environmental Officer	Management plan	Before construction phase: Ongoing

AVIFAUNAL

Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
Management outcome: Habitats				
The development of the gridline and servitude must be placed at a minimum of 100 m from the edge of the Elandsriver. This approach would utilize the southernmost and easternmost extremities of the proposed Northern grid corridor when running parallel to the Elandsriver	Planning and Construction	Project Manager Environmental Officer Contractor Engineer	Development footprint	During Phase
The areas to be developed must be specifically demarcated to prevent movement into surrounding environments.	Life of operation	Project Manager Environmental Officer	Development footprint	Ongoing
Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should under no circumstances be fragmented or disturbed further.	Life of operation	Project Manager Environmental Officer	Areas of indigenous vegetation	Ongoing
Areas that are denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion. This will also reduce the likelihood of encroachment by alien invasive plant species. Topsoil must also be utilised, and any disturbed area must be re-vegetated with plant and grass species which are indigenous to this vegetation type.	Decommissioning /Rehabilitation	Project Manager	Areas that are denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion. This will also reduce the likelihood of encroachment by alien invasive plant species. Topsoil must also be utilised, and any disturbed area must be re-vegetated with plant and grass species which are indigenous to this vegetation type.	Decommissioning /Rehabilitation
A hydrocarbon spill management plan must be put in place to ensure that should there be any chemical spill out or over that it does not run into the surrounding areas. The Contractor shall be in possession of an emergency spill kit that must always be complete and available on site. Drip trays or any form of oil absorbent	Life of operation	Environmental Officer Contractor	Spill events, Vehicles dripping.	Ongoing

Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
material must be placed underneath vehicles/machinery and equipment when not in use. No servicing of equipment on site unless necessary. All contaminated soil / yard stone shall be treated in situ or removed and be placed in containers. Appropriately contain any generator diesel storage tanks, machinery spills (e.g., accidental spills of hydrocarbons oils, diesel etc.) in such a way as to prevent them leaking and entering the environment.				
Cement mixed on site must be mixed in a bunded area or on a removable surface such as thick plastic sheeting at least 50 m away from any wetlands or water resources	Planning and Construction	Project Manager Environmental Officer Contractor Engineer	Water pollution and restricted rehabilitation	During phase
Leaking equipment and vehicles must be repaired immediately or be removed from PAOI to facilitate repair.	Life of operation	Environmental Officer Contractor	Leaks and spills	Ongoing
Only a single construction access should be followed below the powerline route.	Life of operation	Project Manager Environmental Officer Contractor Engineer	Access route	Ongoing

Management outcome: Avifauna

Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
All personnel must undergo environmental induction with regards to avifauna and in particular awareness about not harming, collecting, or hunting terrestrial species, and owls, which are often persecuted out of superstition. Signs must be put up to enforce this.	Life of operation	Environmental Officer	Evidence of trapping etc	Ongoing
The duration of the construction should be kept to a minimum to avoid disturbing avifauna.	Construction/Operational Phase	Project Manager Environmental Officer	Construction/Closure Phase	Ongoing
Overhead cables/lines must be fitted with industry standard bird flight diverters in order to make the lines as visible as possible to collision-susceptible species. Shaw et al (2021) demonstrated that large avifauna species mortality was reduced by 51% (95% CI: 23–68%). Recommended bird diverters such as flapping devices (dynamic device) and thickened wire spirals (static device) that increase the visibility of the lines should be fitted 5 m apart. The Inotec BFD88 bird diverter is highly recommended due to its visibility under low light conditions when most species move from roosting to feeding sites; BFDs should be fitted on the OHL during	Construction Phase	Project Manager Environmental Officer	Bird collisions.	During Phase

Impact Management Actions	Implementation		Monitoring	
	Phase	Responsible Party	Aspect	Frequency
construction, in consultation with the bird specialist. All construction and maintenance motor vehicle operators should undergo an environmental induction that includes instruction on the need to comply with speed limit (40 km/h), to respect all forms of wildlife. Speed limits must be enforced to ensure that road killings and erosion is limited.	Life of Operation	Health and Safety Officer	Compliance to the training.	Ongoing
All project activities must be undertaken with appropriate noise mitigation measures to avoid disturbance to avifauna population in the region	Construction/Operational Phase	Project Manager Environmental Officer	Noise	Ongoing
Powerlines must be fitted with bird diverters for the extent of the line.	Planning and Construction	Project Manager Environmental Officer Contractor Engineer	Presence of electrocuted birds or bird strikes	During Phase
All areas to be developed must be walked through prior to any activity to ensure no nests or avifauna species are found in the area. Should any Species of Conservation Concern be found and not move out of the area, or their nest be found in the area a suitably qualified specialist must be consulted to advise on the correct actions to be taken.	Construction	Environmental Officer	Presence of avifauna species and nests	During Phase
The design of the proposed grid lines must be of a type or similar structure as endorsed by the Eskom-EWT Strategic Partnership on Birds and Energy, considering the mitigation guidelines recommended by Birdlife South Africa (Jenkins <i>et al.</i> , 2015).	Planning and Construction	Project Manager Environmental Officer Contractor Engineer	Presence of electrocuted birds or bird strikes	During Phase
Infrastructure must be consolidated where possible in order to minimise the amount of ground and air space used.	Planning and Construction	Project Manager Environmental Officer Contractor Engineer	Presence of bird collisions	During phase
All the parts of the infrastructure must be nest proofed and anti-perch devices placed on areas that can lead to electrocution	Planning and Construction	Environmental Officer Contractor Engineer	Presence of electrocuted birds	During phase
Use environmentally friendly cleaning and dust suppressant products	Construction and Operation	Environmental Officer Contractor Engineer	Chemicals used	During phase
Any exposed parts must be covered (insulated) to reduce electrocution risk	Planning and construction	Environmental Officer & Contractor, Engineer	Presence of electrocuted birds	During phase
All infrastructure, must be removed if the line is decommissioned.	Closure/Rehabilitation	Project Manager Environmental Officer	Infrastructure removal	During Process

AGRICULTURE

- Vegetation clearance must be restricted to areas authorised for development;
- Land clearing and preparation may only be undertaken immediately prior to construction activities and within authorised areas;
- A stormwater management plan must be developed and implemented for the project; and
- If soil erosion is detected, the area must be stabilised using geo-textiles and facilitated re-vegetation.

ALIEN INVASIVE VEGETATION MANAGEMENT PLAN

Impact	Mitigation/ Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
DESIGN PHASE					
Impacts due to establishment of alien invasive plants	Ensure the appropriate removal of alien invasive vegetation from the proposed project area and prevent the establishment and spread of alien invasive plants due to the project activities.	<ul style="list-style-type: none"> • Ensure compliance with relevant Environmental Specifications for the control and removal of alien invasive plant species. • Appoint a specialist or contact relevant authorities to seek guidance on the removal of the alien vegetation on site. • Compile and finalise an alien weed eradication programme. 	<ul style="list-style-type: none"> • Appoint a suitable specialist/ Contractor or contact the relevant authorities to seek guidance on the removal of the planted alien invasive species. • Appoint a suitable specialist to compile an alien invasive vegetation eradication plan. • Ensure that this is taken into consideration during the planning and design phase by reviewing signed minutes of meetings or signed reports. 	Once-off during the design phase.	Holder of the EA / EPC contractor
CONSTRUCTION PHASE					
Impacts due to the establishment of and increased spread of alien invasive plants	Avoid establishment and reduce the spread of alien invasive plants due to the project activities.	<ul style="list-style-type: none"> • Appoint a specialist or contractor to undertake a sweep and survey of the final development footprint site, with an alien invasive eradication team to remove exotic vegetation prior to the commencement of construction. • Establish an ongoing monitoring 	<ul style="list-style-type: none"> • Appoint a suitable vegetation contractor to inspect the site and remove any exotic weeds prior to the commencement of construction. ECO to ensure that this is taken into consideration and implemented. • Prepare monitoring programme which 	Prior to the commencement of construction Once-off	EPC Contractor / ESA and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		programme for the construction phase to detect and quantify any alien species that may become established and identify the problem species (as per Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA) and National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEM: BA)).	will monitor the presence of alien invasive species on the site. If any alien invasive species are detected, then the distribution of these should be mapped (GPS coordinates of concentrations of plants). The results should be interpreted in terms of the risk posed to sensitive habitats within and surrounding the project area.		
		Ensure proper management of soil stockpiles. Do not import soil stockpiles from areas with alien plants to ensure proper management of stockpiles.	Monitor the presence of alien invasive plants during the construction phase via visual inspections and take action to remove and control these species.	On-going	ECO and Contractor
		Undertake rehabilitation of disturbed areas as soon as possible after construction. Stockpile the shallow topsoil layer separately from the subsoil layers. Reinststate the topsoil layers (containing seed and vegetative material) when construction is complete to allow the plants to rapidly re-colonise the bare soil areas.	Rehabilitate disturbed areas and monitor the presence of alien invasive species on site.	On-going	ECO and EPC Contractor
		Keep clearance and disturbance of indigenous vegetation to a minimum.	Monitor and manage vegetation clearing by undertaking visual inspections to ensure minimal disturbance and to restrict activities to within demarcated areas.	On-going	ECO and EPC Contractor
		Ensure that the footprint required for the proposed project activities (such as temporary stockpiling, earthworks, storage areas, site establishment etc.) is kept at a minimum.	Verify that the proposed project area is determined and outlined prior to the commencement of the construction phase by undertaking visual inspections.	Once-off prior to construction and as required during the construction process.	ECO and EPC Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		Ensure that alien invasive vegetation found on site, within the proposed project footprint, is immediately controlled and removed promptly, in a scheduled manner throughout the construction phase. The removal of alien vegetation on site during the construction phase should use registered control methods and take into consideration the Alien and Invasive Species Regulations published in terms of Section 97(1) of the NEM: BA, if applicable.	Monitor the presence of alien invasive plants during the construction phase via visual inspections and take action to remove and control these species. If any alien invasive species are detected, then the distribution of these should be mapped (GPS co-ordinates of concentrations of plants). The results should be interpreted in terms of the risk posed to sensitive habitats within and surrounding the project area. Any alien invasive should be cleared from site.	On-going	ECO and EPC Contractor
		The removed alien invasive vegetation should be immediately disposed at a suitable waste disposal facility and should not be kept on site for prolonged periods of time, as this will enhance the spread of these species.	Monitor the removal of the alien vegetation found on site via visual inspections.	As necessary during the construction phase.	ECO
		All construction machinery and plant equipment delivered to site for use during the construction phase should be cleaned in order to limit the introduction of alien species.	Clean machinery and equipment prior to the construction phase. ECO to conduct visual inspections to verify that machinery and equipment are cleaned and report any non-compliance.	Prior to the commencement of construction. As necessary during the construction phase.	ECO and EPC Contractor
OPERATIONAL PHASE					
Impacts due to establishment of alien invasive plants. Exotic weed invasion may result in the ousting of natural vegetation and alteration of ecological processes on site, with incremental impacts on the	Reduce the establishment and spread of alien invasive plants. To remove exotic weeds as and when they may arise and thereby prevent alteration of local and	Continue with on-going monitoring programme to detect and quantify any alien species that may become established and identify the highly invasive species during the operation phase.	Annual audit of project area and immediate surroundings. If any alien invasive species are detected, then the distribution of these should be mapped (GPS co-ordinates of concentrations of plants). The results should be interpreted in terms of the risk posed to sensitive habitats within and surrounding the project area.	Annual	Operations and Maintenance Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
adjacent veld types.	adjacent habitat forms.	Immediately control any alien plants that become established using registered control methods. Use of herbicides and undertake manual removal of alien vegetation on site where this may arise. Regular address and redress of weeds identified on site by a suitable contractor. The clearance of exotic weed to be undertaken bi-annually at a minimum and on a need's basis at an intermittent level.	Monitor the use of herbicide sprays and manual removal of alien vegetation by undertaking visual inspections and reporting any non-compliance. Maintain register of weed spraying activities and ensure that herbicide use is recorded.	Bi-annually	Holder of the EA

DECOMMISSIONING PHASE

Exotic weed invasion of the decommissioned site resulting in ecological change	To prevent the excessive growth and propagation of exotic weeds on disturbed lands that formed a portion of the PV facility.	All-natural areas must be rehabilitated with species indigenous to the area. Re-seed with locally sourced seed of indigenous grass species that were recorded on site pre-construction.	Final external audit of area to confirm that area is rehabilitated to an acceptable level.	Once off	Main Contractor with advice from specialist
		Exotic weed control measures to be instituted through weed control programme. Regular redress of exotic weed through the use of herbicide and manual removal.	Compile weed eradication programme for a period of 12 months after the decommissioning exercise. Appoint contractor to undertake the weed eradication programme. Monitor newly disturbed areas where infrastructure has been removed to detect and quantify any aliens that may become established after decommissioning and rehabilitation. Final external audit of area to confirm that area is free of alien invasive plants after 5 years.	Weed eradication exercise to be undertaken every 6 months for a period of 12 months following decommissioning. Prior to the commencement of the decommissioning phase. Once-off	Holder of the EA with input from the specialist where necessary.

PLANT RESCUE AND PROTECTION PLAN / RE-VEGETATION AND HABITAT REHABILITATION PLAN

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
CONSTRUCTION PHASE					

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
Excessive loss of natural vegetation in and outside the development footprint area and veld degradation	Minimise loss of natural vegetation. Prevent impacts on natural vegetation in sensitive habitats and SSC.	Sensitive habitats and areas outside of the project development area should be clearly demarcated as no go areas during the construction phase to avoid accidental impacts. No development or activities should take place in the high sensitivity ecosystems.	Strict control over the behaviour of construction workers, restricting activities to within demarcated areas for construction. ECO must monitor activities and record and report non-compliance. Strict control and proper education of staff to prevent misconduct. If ECO is absent, there should be a designated EO present to deal with any urgent issues.	Daily	ECO and Contractor
		Ensure that the footprint required for the proposed project activities is kept at a minimum.	Verify that the proposed project area is determined and outlined prior to the commencement of the construction phase by undertaking visual inspections.	Once-off prior to construction and as required during the construction process.	ECO
		The proposed project footprint must be demarcated to reduce unnecessary disturbance beyond the proposed project area.	Carry out visual inspections to ensure strict control over the behaviour of staff in order to restrict activities to within demarcated areas.	Weekly	ECO
		The Contractors and construction personnel must be made aware that indigenous vegetation must not be removed or damaged.	Carry out Environmental Awareness Training. Conduct audits of the signed attendance registers.	Once-off training and ensure that all new staff are inducted. Monthly	Contractor/ ECO ECO
		Ensure that the temporary site camp is established at least 32 m away from the any drainage lines.	Monitor the placement of the site camp via visual inspections, and record and report any non-compliance.	Once-off prior to construction and as required during the construction phase.	ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		Unnecessary impacts on surrounding natural vegetation must be avoided during construction. All construction vehicles should remain on properly and clearly demarcated roads.	Strict control over the behaviour of construction workers, restricting activities to within demarcated areas for construction. Include periodical site inspection in environmental performance reporting that specifically records occurrence of off-road vehicle tracks in specific areas.	Daily	ECO and Contractor
		Undertake rehabilitation of disturbed areas as soon as possible after construction. Stockpile the shallow topsoil layer separately from the subsoil layers. Reinststate the topsoil layers (containing seed and vegetative material) when construction is complete to allow the plants to rapidly re-colonise the bare soil areas. Re-seed with locally sourced seed of indigenous grass species that were recorded on site during the pre-construction phase.	Undertake following the construction phase and report any non-compliance.	Daily	ECO and Contractor
		The collection, hunting or harvesting of any plants, fuel wood or animals at the site during construction should be strictly forbidden and the staff educated to prevent this from happening.	Strict control over the behaviour of construction workers, restricting activities to within demarcated areas for construction. Carry out Environmental Awareness Training. Conduct audits of the signed attendance registers.	Daily Once-off training and ensure that all new staff are inducted. Monthly	ECO and Contractor Contractor/ ECO ECO
		Fires should only be allowed within fire-safe demarcated areas. Open fires must be prohibited. Appropriate fire safety training should also be	Strict control over the behaviour of construction workers, restricting activities to within	Daily	ECO and Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		provided to staff that are to be on site for the duration of the construction phase.	demarcated areas. Ensure fire safety requirements are well understood and respected by workers (by providing basic fire safety training).		
		Existing access roads/servitudes must be used and should be located along the boundaries of existing disturbed areas, if possible.	Compile plan pre-construction.	Prior to construction commencing	Holder of the EA
Impact on indigenous vegetation, and on SSC and their habitats	To reduce negative impacts on and loss of indigenous vegetation and protected trees. Minimise impacts on SSC.	Appoint a specialist to undertake a second review and site visit of the final layout of the development footprint, possibly during the late summer period, in order to identify any plant species on site that may require "rescue" as well as any exotic weeds/vegetation that require removal.	Appoint an Ecologist to oversee the final development footprint area through a reconnaissance survey (already completed).	Prior to the commencement of construction	Holder of the EA
		Identification of roadways and areas where extensive vegetation loss will result is required. Upon consideration, the avoidance of unnecessary clearance of vegetation on site should be undertaken through minor deviations to the design. Ensure that the footprint required for the proposed project activities is kept at a minimum.	Review how larger vegetation will be dealt with by contractors.	Ongoing	Holder of the EA
		A plant rescue operation must be initiated to confirm that no other species are located within the development site.	ECO must undertake a final walkthrough of the site prior to commencement of construction to ensure no SCC will be impacted on	Once-off	ECO and Contractor
		Clearing of vegetation should be kept to a minimum, keeping the width and length of the	Monitor activities and record and report non-compliance.	Daily	ECO and Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		earthworks to a minimum.			
		Avoid the removal of listed SSC or protected species as far as possible. Should any of the listed/protected species need to be removed, the requisite permits must be obtained prior to the removal of the species.	Monitor activities and record and report non-compliance.	Daily	ECO and Contractor
Disturbance of terrestrial fauna and flora on site due to construction workers and activities.	To advise construction staff of the requirements in respect of management of flora and fauna on site during the construction phase.	Conduct an Environmental Awareness Training and induction for all construction staff and personnel.	Carry out Environmental Awareness Training with a discussion on the management of terrestrial fauna and flora on site. Conduct audits of the signed attendance registers.	Prior to construction and as required by the ECO. Ensure that all new staff are inducted. Monthly	ECO and Contractor ECO
Impact on fauna as a result of construction activities.	To identify any faunal mortalities and record the details (such as the reason, spatial extent etc.) in order to avoid repetition of fatality.	Establish a recording method in order to monitor the construction activities, including species presence within site, mortalities and siting's.	Establish database of species, siting's etc. Construction personnel should advise on the findings and presence of fauna on site.	Daily to monthly	ECO
	To remove species that may be found present in the construction footprint and laydown area.	Appoint a specialist to conduct an inspection of the final project area and sweep or inspect the site for any fauna, once the fencing is complete (i.e., the established site should be flushed to ensure any large wildlife is not contained within the fenced area). Appoint a small team to flush game during the early evening. Game should be flushed by driving a team through the gated facility towards the exit.	Team to flush game as required. ECO to monitor flushing process and record any incidents or non-compliance.	Once off prior to commencement and thereafter if required.	ECO and Holder of the EA
		The Contractor or Contractors Environmental Officer should monitor trenches at the start and end of	Monitor activities and record and report non-compliance.	As required during construction	ECO and Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		each working day to check if any small animals are trapped.			
		No animals (including snakes) shall be killed on site. An expert or a suitable specialist should be appointed to remove and relocate any poisonous snakes during the construction phase.	Monitor activities and record and report non-compliance.	As required during construction	ECO and Contractor
Faunal and avifaunal road mortality as a result of increased vehicles travelling to and within the site.	Minimise loss of fauna as a result of road mortalities.	The construction personnel and staff should be made aware of the presence of fauna within the proposed project area. The construction personnel and staff must also be made aware of the general speed limits on site and must be alert at all times for potential crossings.	Carry out Environmental Awareness Training. Conduct audits of the signed attendance registers.	Once-off training and ensure that all new staff are inducted. Monthly	ECO and Contractor ECO
		To ensure that animals are not attracted to the site (and potentially resulting in increased road mortality), the waste collection bins and skips should be covered with suitable material, where appropriate, and the site camp must be kept clean on a daily basis.	Monitor the activities via visual inspections, and record and report any non-compliance.	Daily	ECO and Contractor
Impact and loss of fauna as a result of the fence line and exclusion of fauna from site resulting in ecological change within the site.	To reduce incidental mortality and injury of fauna within the construction area.	<ul style="list-style-type: none"> Ensure that the live electrical fence wire is not placed at ground level. Conduct inspections of the fence line to address any animals that may be affected by the fence. 	Conduct regular (daily) inspections of the fence line to address any animals that may be affected by the fence.	Daily to monthly record keeping. A register of all faunal siting's indicating date of siting; species affected; position of species (specific or indicative) and other observations should be established.	Holder of the EA
Increased ELP, leading to changes in nocturnal behavioural patterns	The avoidance of electrical light pollution through prudent positioning of external lighting.	Placement of lighting, particularly security lighting, to avoid excessive influence on surrounding areas. Placement of lighting to	Review lighting plans and identify important habitat zones to be avoided.	Prior to the installation of lighting.	Holder of the EA, Contractor and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
amongst fauna		be judiciously considered at time of implementation.			
OPERATIONAL PHASE					
Vegetation management on site	Manage vegetation throughout the site to avoid conflict with operations of the proposed grid connection.	<ul style="list-style-type: none"> Identify protocol for pruning of vegetation and clearance where required. Identify level of pruning and vegetation management required. 	Identify means of pruning and clearance of vegetation. For example, brush cutter, grazing etc.	Ongoing and as required	Environmental Manager
Loss of SSC and their habitats	Control loss of natural vegetation during the operational phase. Prevent impacts on natural vegetation in sensitive habitats and SSC.	Unnecessary impacts on surrounding natural vegetation must be avoided. All operational and maintenance vehicles to remain on the roads and no driving off road allowed. No unauthorized persons should be allowed onto the site.	Strict control over the behaviour of operation workers, restricting activities to within demarcated areas for operation. Strict control and proper education of staff to prevent misconduct.	Monthly	Environmental Manager
		The collection, hunting or harvesting of any plants, any protected trees, fuel wood or animals at the site should be strictly forbidden and the staff educated to prevent this from happening.	Strict control over the behaviour of construction workers, restricting activities to within demarcated areas for construction. Carry out Environmental Awareness Training. Conduct audits of the signed attendance registers.		
		All hazardous materials should be stored in the appropriate manner to prevent impacts on vegetation. Any accidental chemical, fuel and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill.	Monitor the activities via visual inspections, and record and report any non-compliance.	Daily	Environmental Manager
		Fires should only be allowed within fire-safe demarcated areas. Open fires must be prohibited. Appropriate fire safety training should also be	Strict control over the behaviour of construction workers, restricting activities to within	Daily	Facility Manager and Environmental Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		provided to staff that are to be on site for the duration of the operational phase.	demarcated areas. Ensure fire safety requirements are well understood and respected by workers (by providing basic fire safety training).		
		A storm-water management plan must be implemented during the operational phase. Regular inspections of stormwater infrastructure should be undertaken to ensure that it is kept clear of all debris and weeds.	Verify that the stormwater management plan is being implemented and signed off prior the commencement of operations. Undertake regular inspections of the stormwater infrastructure (i.e., by implementing walk through inspections).	Prior to commencement of operations. Weekly/Monthly	Environmental Manager Facility Manager
		Undertake maintenance of rehabilitated areas in accordance with the rehabilitation and landscaping plan.	Monitor topsoil removal and rehabilitation activities, and record and report non-compliance.	Weekly or Monthly	Facility Manager and Environmental Manager
		Continue with on-going monitoring programme to detect and quantify any alien species that may become established and identify the highly invasive species during the operation phase.	Monitor the presence of alien invasive species on the development site.	Reporting frequency depends on legal compliance framework	Facility Manager and Environmental Manager
Impact and loss of fauna as a result of operational activities.	To reduce the loss of and impact on fauna.	<ul style="list-style-type: none"> Prior to the commencement of the operational phase, the plant manager and the landowner need to reach a decision in terms of the allowance of faunal activities or redress of faunal activities within site. Identify points of excessive faunal activity and impact on operations. Undertake monitoring of faunal activities within the fenced area of the 	Establish reporting procedure. Monitor the presence of fauna during the operational phase via visual inspections and site visits. Carry out Environmental Awareness Training. Conduct audits of the signed attendance registers.	Daily Daily Once-off training and ensure all new staff are inducted. As required	Facility Manager and Environmental Manager Facility Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		<p>site and the immediate proximity of the site.</p> <ul style="list-style-type: none"> Reduction in speed limits in and around site. 			
Impact and loss of fauna as a result of the fence line and exclusion of fauna from site resulting in ecological change within the site.	To reduce the impact and loss of fauna from site as a result of their exclusion from the area.	<ul style="list-style-type: none"> Avoidance of damage to infrastructure by faunal activity as well as impact on fauna as a result of the site infrastructure. Identify impact of burrowing and other faunal activities on the fence line and operations activities. Undertake the management of faunal intrusion through the fence, including possible mortalities. Provide critter paths through the fence line to allow species access to site. Ensure that the live electrical fence wire is not placed at ground level. Conduct inspections of the fence line to address any animals that may be affected by the fence. Promote and support faunal presence and activities within the proposed PV facility. 	<p>Identify where fauna may be affecting operations of site (burrows etc.) Consider redress if necessary.</p> <p>Conduct regular (daily) inspections of the fence line to address any animals that may be affected by the fence.</p> <p>Monitor the activities via visual inspections, and record and report any non-compliance.</p>	Daily to monthly record keeping. A register of all faunal siting's indicating date of siting; species affected; position of species (specific or indicative) and other observations should be established. Daily	Holder of the EA
Impact of ELP around the site.	The avoidance of electrical light pollution through prudent positioning of external lighting.	<ul style="list-style-type: none"> Placement of lighting, particularly security lighting to avoid excessive influence on surrounding areas. 	Review lighting plans and identify important habitat zones to be avoided.	Prior to the installation of lighting.	Holder of the EA and Environmental Manager
Faunal and avifaunal road mortality as a result of increased vehicles travelling to	Minimise loss of fauna as a result of road mortalities.	The operational personnel and staff should be made aware of the presence of fauna within the proposed project area. The operational personnel	Carry out Environmental Awareness Training. Conduct audits of the signed	Once-off training and ensure that all new staff are inducted. Monthly	Facility Manager Environmental Manager

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
and within the site.		and staff must also be made aware of the general speed limits on site and must be alert at all times for potential crossings.	attendance registers.		
		To ensure that animals are not attracted to the site (and potentially resulting in increased road mortality), the waste collection bins and skips should be covered with suitable material, where appropriate, and the offices must be kept clean on a daily basis.	Monitor the activities via visual inspections, and record and report any non-compliance.	Daily	ECO and Contractor
DECOMMISSIONING PHASE					
Rehabilitation of flora on site	Re-vegetation of the disturbed site is aimed at approximating as near as possible the natural vegetative conditions prevailing prior to operation.	<ul style="list-style-type: none"> All damaged areas shall be rehabilitated upon completion of the contract. All natural areas must be rehabilitated with species indigenous to the area. Re-seed with locally sourced seed of indigenous grass species that were recorded on site pre-construction. Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas. 	Conduct a final external audit to confirm that area is rehabilitated to an acceptable level.	Once off	Holder of the EA with feedback and input from an appropriate specialist. with advice from specialist

HAZARDOUS SUBSTANCES LEAKAGE OR SPILLAGE MONITORING SYSTEM

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
CONSTRUCTION PHASE					
Contamination of soil and risk of damage to vegetation and/or fauna through spillage of concrete and cement.	To control concrete and cement batching activities in order to reduce spillages and resulting contamination of soil, groundwater and the vegetation and/or fauna.	If any concrete mixing takes place on site, this must be carried out in a clearly marked, designated area at the site camp on an impermeable surface (such as on boards or plastic sheeting and/or within a bunded area with an impermeable surface).	Monitor the handling and storage of sand, stone and cement as instructed.	Daily	Holder of the EA, EPC contractor and ECO.

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains.	Monitor the handling and storage of sand, stone and cement as instructed.	Daily	Holder of the EA, EPC contractor and ECO.
		A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted.	Monitor the handling and storage of sand, stone and cement as instructed.	Daily	Holder of the EA, EPC contractor and ECO.
		Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licenced disposal facility. Proof of disposal (i.e., waste disposal slips or waybills) should be retained on file for auditing purposes.	Monitor the handling and storage of sand, stone and cement as instructed. Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	Daily Monthly	Holder of the EA, EPC contractor and ECO.
		Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site. Empty cement bags must be collected from the construction area at the end of every day. Sand and aggregates containing cement must be kept damp to prevent the generation of dust.	Monitor the handling and storage of sand, stone and cement as instructed.	Daily	Holder of the EA, EPC contractor and ECO.
		Any excess sand, stone and cement must be removed from site at the completion of the construction period and disposed at a licenced waste disposal facility. Proof of disposal (i.e., waste disposal slips or waybills) should be retained on file for auditing purposes.	Monitor the handling and storage of sand, stone and cement as instructed. Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	Daily Monthly	Holder of the EA, EPC contractor and ECO.
		Contamination of soil and risk of damage to vegetation and/or fauna	To control and eliminate fuel and oil spillages which may result in soil contamination and	Ensure that adequate containment structures are provided for the temporary storage of liquid dangerous goods and hazardous	Monitor the storage and handling of dangerous goods and

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
through spillage of fuels and oils.	damage to vegetation and/or fauna.	materials on site (such as chemicals, oil, fuel, hydraulic fluids, lubricating oils etc.). Appropriate bund areas must be provided for the storage of these materials at the site camp. Bund areas should contain an impervious surface in order to prevent spillages from entering the ground. Bund areas should have a capacity of 110 % of the volume of the largest tank in the bund (tanks include storage of fuel/diesel).	hazardous materials on site via site audits and record non-compliance and incidents.		
		Monitor and inspect construction equipment and vehicles to ensure that no fuel spillage takes place. Ensure that drip trays are provided for construction equipment and vehicles as required.	Monitor the construction equipment and vehicles and monitor the occurrence of spills and the management process thereof. Record all spills and lessons learnt.	Daily During spill events	EPC Contractor and ECO
		Contractor to compile a Method Statement for refuelling activities under normal and emergency situations. If on-site servicing and refuelling is required in emergency situations, a designated area must be created at the construction site camp for this purpose. Drip trays ¹ or similar impervious materials must be used during these procedures.	Verify if a Method Statement is compiled by reviewing approved and signed off reports. Monitor the refuelling/ servicing process and record the occurrence of any spillages.	Once-off prior to commencement of construction. During emergency refuelling and servicing activities.	ECO
		Spilled fuel, oil or grease must be retrieved, and contaminated soil removed, cleaned and replaced.	Monitor the handling and storage of fuels and oils via site audits and monitor if spillages have taken place and if so, are removed	Daily (or during spills)	EPC Contractor and ECO

- ¹ In addition to the requirement to utilise a drip tray during refuelling, drip trays must be placed under all plant when it is not in use, regardless of whether this plant in the field or at the site camp.

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
			correctly. Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.		
		Contaminated soil to be collected by the Contractor (under observation of the ECO) and disposed of at a registered waste facility designated for this purpose. Proof of disposal (i.e., waste disposal slips or waybills) should be retained on file for auditing purposes.	Monitor the correct removal of contaminated soil. Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	Daily (or during spills)	EPC Contractor and ECO
		A Spill Response Method Statement must be compiled by the Contractor for the construction phase in order to manage potential spill events.	Compile a Spill Response Method Statement. Audit signed and approved Spill Response Method Statement.	Once-off (and thereafter updated as required during the construction phase). Once-off (and thereafter as required during the construction phase).	Holder of the EA, EPC contractor and ECO.
		The Contractor must ensure that adequate spill containment and clean-up equipment are provided on site for use during spill events.	Monitor via site audits and record incidents and non-compliance.	Daily/Weekly	ECO and EPC Contractor
		Portable bioremediation kit (to remedy chemical spills) is to be held on site and used as required.	Ensure that a well-maintained portable bioremediation kit is available on site and that construction personnel and contractors are aware of its location and instructions	Daily	EPC Contractor and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		In case of a spillage of hazardous chemicals where contamination of soil occurs, depending on the degree and level of contamination, excavation and removal to a hazardous waste disposal facility could be necessary. If the spillage is widespread and the soil is considered to be significantly contaminated, a specialist will need to be immediately appointed to address the spillage. This will usually entail the collection of samples of the contaminated soil followed by analysis in terms of the 2014 National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (i.e., GN 331). If the soil is determined to be significantly contaminated, then compliance with Part 8 of the NEMWA should be achieved by the Applicant, including notifying the Minister of Environmental Affairs of the significant contamination.	Ensure that a suitably qualified specialist is appointed to collect and analyse the contaminated soil samples in terms of the 2014 Norms and Standards (i.e., GN 331) in order to determine if the soil is significantly contaminated or not. If the contaminated soil is considered to be significantly contaminated, then compliance with Part 8 of the NEMWA should be achieved by the Applicant.	During spill events	Holder of the EA
		The Contractor must record and document all significant spill events.	Monitor documentation and records of significant spill events via audits and record non-compliance and incidents.	During spill events	ECO
OPERATIONAL PHASE					
Contamination of soil and risk of damage to vegetation and/or fauna through spillage of fuels and oils	To control and eliminate fuel and oil spillages which may result in soil contamination and damage to vegetation and/or fauna.	Monitor and inspect maintenance equipment and vehicles to ensure that no fuel spillage takes place.	Implement specifications for maintenance equipment use as specified by the maintenance Contractor.	Monthly	Holder of the EA
		Spilled fuel, oil or grease is retrieved during operations where possible and contaminated soil removed, cleaned and replaced.	Monitor the handling and storage of fuels and oils via site audits	During spills	Holder of the EA

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
			and monitor if spillages have taken place and if so, are removed correctly. Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.		
		Contaminated soil to be collected by the Contractor and disposed of at a registered waste facility designated for this purpose. Proof of disposal (i.e., waste disposal slips or waybills) should be retained on file for auditing purposes.	Monitor the correct removal of contaminated soil. Monitor waste disposal slips and waybills via site audits and record non-compliance and incidents.	During spills	Holder of the EA
		A Spill Response Plan must be compiled for the operational phase in order to manage potential spill events.	Compile a Spill Response Plan. Audit signed and approved Spill Response Method Statement.	Once-off (and thereafter updated as required). Once-off (and thereafter as required).	Holder of the EA and Facility Manager
		Ensure that adequate spill containment and clean-up equipment are provided on site for use during spill events. Portable bioremediation kit (to remedy chemical spills) is to be held on site and used as required.	Ensure that a well-maintained portable bioremediation kit is available on site and that operational personnel are aware of its location and instructions.	Weekly	Facility Manager
		In case of a spillage of hazardous chemicals where contamination of soil occurs, depending on the degree and level of contamination, excavation and removal to a hazardous waste disposal facility could be necessary. If the spillage is widespread	Ensure that a suitably qualified specialist is appointed to collect and analyse the contaminated soil samples in	During spill events	Holder of the EA

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		and the soil is considered to be significantly contaminated, a specialist will need to be immediately appointed to address the spillage. This will usually entail the collection of samples of the contaminated soil followed by analysis in terms of the 2014 National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (i.e., GN 331). If the soil is determined to be significantly contaminated, then compliance with Part 8 of the NEMWA should be achieved by the Applicant, including notifying the Minister of Environmental Affairs of the significant contamination.	terms of the 2014 Norms and Standards (i.e., GN 331) in order to determine if the soil is significantly contaminated or not. If the contaminated soil is considered to be significantly contaminated, then compliance with Part 8 of the NEMWA should be achieved by the Applicant.		
		Ensure that adequate containment structures are provided for the temporary storage of liquid dangerous goods and hazardous materials on site (such as chemicals, oil, fuel, hydraulic fluids, lubricating oils etc.). Appropriate bund areas must be provided for the storage of these materials at the PV facility. Bund areas should contain an impervious surface in order to prevent spillages from entering the ground. Bund areas should have a capacity of 110 % of the volume of the largest tank in the bund (tanks include storage of fuel/diesel).	Monitor the storage and handling of dangerous goods and hazardous materials on site via site audits and record non-compliance and incidents.	Weekly	Facility Manager
Impacts due to management solid and liquid wastes disposed of on the site during operational phase.	Prevent environmental impacts as a result of the operational phase such as pollution.	All operation waste to be removed from the site by an appointed service provider.	Waste removal and disposal to be monitored throughout operation.	Monthly	Facility Manager
		All liquid waste or spills (used oil, paints, lubricating compounds and grease from vehicles passing through the entrance facility) to be packaged and	Monitor the correct removal of liquid waste or spills. Monitor waste disposal	During spills	Holder of the EA

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		disposed appropriately at a registered landfill site.	slips and waybills via site audits and record non-compliance and incidents.		
		Adequate containers for the cleaning of equipment and materials (paint, solvent) must be provided in order to avoid spillages.	Monitor the storage and handling of dangerous goods and hazardous materials on site via site audits and record non-compliance and incidents.	Weekly	Facility Manager
DECOMMISSIONING PHASE					
No specific impacts are associated with the decommissioning phase other than those from the operational phase that will still be relevant for the duration of the decommissioning phase due to on-going occupation of the area.					

STORMWATER MANAGEMENT PLAN

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
DESIGN PHASE					
Impact of the project if a detailed storm water management plan is not correctly prepared.	To limit the effect of uncontrolled storm water run-off from developed areas onto natural areas	<ul style="list-style-type: none"> Prepare a detailed stormwater management plan outlining appropriate treatment measures to address runoff from disturbed portions of the site, such that they do not: result in concentrated flows into natural watercourses i.e., provision should be made for temporary or permanent measures that allow for attenuation, control of velocities and capturing of sediment upstream of natural water courses; result in any necessity for concrete or other lining of natural 	Check compliance with specified conditions. Ensure that this is taken into consideration during the planning and design phase by reviewing signed minutes of meetings or signed reports.	Once-off during design followed by regular control During the design phase	Contractor ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		<p>water courses to protect them from concentrated flows of the development;</p> <ul style="list-style-type: none"> divert flows out of their natural flow pathways, thus depriving downstream watercourses of water. 			
CONSTRUCTION PHASE					
<p>Diversion and impedance surface water flows – Changes to the hydrological regime and increased potential for erosion.</p> <p>Diversion and increased velocity of surface water flows – reduction in permeable surfaces</p>	<p>Prevent interference with natural run-off patterns, diverting flows and increasing the velocity of surface water flows.</p>	<p>The appointed Contractor should compile a Method Statement for Stormwater Management during the construction phase.</p>	<p>Compile a Method Statement for Stormwater Management during the construction phase. Inspect and verify if a Method Statement for Stormwater Management has been compiled by the Contractor via audits prior to the commencement of the construction phase.</p>	<p>Prior to the construction phase. Once-off prior to the commencement of the construction phase.</p>	<p>Contractor ECO</p>
		<p>Stormwater and any run-off generated by the hard surfaces should be discharged into retention swales or areas with rock riprap (or similar). These could be used to enhance the sense of place, if they are planted with indigenous vegetation.</p>	<p>Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.</p>	<p>Weekly or bi-weekly</p>	<p>ECO</p>
		<p>Erosion and sedimentation into water bodies must be minimised through the effective stabilisation (gabions and Reno mattresses or similar) and the re-vegetation of any disturbed riverbanks.</p>	<p>Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.</p>	<p>Weekly or Bi-weekly</p>	<p>ECO</p>
		<p>Place energy dissipation structures in a manner that allows the management of flows prior to being discharged into the natural</p>	<p>Check compliance with specified conditions of the Stormwater Management</p>	<p>Weekly or bi-weekly</p>	<p>ECO</p>

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		environment, thus not only preventing erosion, but supporting the maintenance of natural base flows within these systems i.e., hydrological regime (water quantity and quality) is maintained.	Plan and Method Statement.		
		Reinforce soil slopes to minimise erosion during rehabilitation (as needed, and once construction in a specific area has ceased).	Monitor activities and record and report non-compliance.	As needed during the construction phase	ECO
		Any irrigation of the development area for landscaping or dust control purposes should be controlled, such that it does not result in any measurable increase in moisture being passed into natural drainage lines.	Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	Weekly or bi-weekly	ECO
		Drainage along the sides of the roads should be designed so that it does not result in concentrated flows into watercourses.	Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	Weekly or bi-weekly	ECO
		Perform periodic inspections and maintenance of soil erosion measures and stormwater control structures.	Monitor activities and record and report non-compliance.	As needed during the construction phase	ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
Pollution of the surrounding environment as a result of the contamination of stormwater. Contamination could result from the spillage of chemicals, oils, fuels, sewage, solid waste, litter etc.	<p>To prevent contaminated stormwater from entering into and adversely impacting on freshwater ecosystems and reducing the water quality.</p> <p>To reduce sedimentation of nearby water systems.</p> <p>To apply best practice principles in managing risks to storm water pollution.</p>	The appointed Contractor should compile a Method Statement for Stormwater Management during the construction phase.	Compile a Method Statement for Stormwater Management during the construction phase. Inspect and verify if a Method Statement for Stormwater Management has been compiled by the Contractor via audits prior to the commencement of the construction phase.	Prior to the construction phase. Once-off prior to the commencement of the construction phase.	Contractor ECO
		Provide secure storage for fuel, oil, chemicals and other waste materials to prevent contamination of stormwater runoff. Fuels and chemicals (i.e., any hazardous materials and dangerous goods) used during the construction phase must be stored safely on site and in bunded areas. Fuel and chemical storage containers must be inspected to ensure that any leaks are detected early.	Monitor the storage and handling of dangerous goods and hazardous materials on site via site audits and record non-compliance and incidents. Monitor if spillages have taken place and if they are removed correctly.	Weekly	ECO
		All stockpiles must be protected from erosion and stored on flat areas where run-off will be minimised. Erosion and sedimentation into water bodies must be minimised through effective stabilisation. No stockpiling should take place within a watercourse. Stockpiles must be located away from river channels i.e., greater than 32 m.	Monitor the excavations and stockpiling process throughout the construction phase via visual site inspections. Record non-compliance and incidents.	Daily	ECO
		Littering and contamination of water resources during construction must be prevented by effective	Monitor via site audits and record non-compliance and incidents (i.e., by	Weekly	Contractor and ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		construction camp management.	implementing walk through inspections).		
		Emergency plans must be in place to deal with potential spillages (especially those leading to any watercourses).	Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	Weekly or Bi-weekly	ECO
		Erosion and sedimentation into water bodies must be minimised through the effective stabilisation (gabions and Reno mattresses or similar) and the re-vegetation of any disturbed riverbanks.	Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	Weekly or Bi-weekly	ECO
		Ensure that the temporary site camp and ablution facilities are established at least 32 m away from the banks of the major drainage lines.	Monitor the placement of the site camp via visual inspections, and record and report any non-compliance.	Once-off prior to construction and as required during the construction phase.	ECO
		Ensure that there is no ad-hoc crossing of channels by vehicles during the construction phase. Access routes across the site should be strictly demarcated and selected with a view to minimise impacts on drainage lines.	Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	Weekly or Bi-weekly	ECO
		.	Check compliance with specified conditions of the Stormwater Management Plan and Method Statement.	Weekly or Bi-weekly	ECO
		Regular inspections of stormwater infrastructure should be undertaken to ensure that it is kept clear of all debris and weeds.	Monitor via site audits and record non-compliance and incidents (i.e., by implementing walk through inspections).	Weekly	Contractor and ECO
OPERATIONAL PHASE					
Stormwater discharge into the	To minimise the contamination of stormwater by	An operational phase Stormwater Management Plan	Compile a Stormwater Management	Continuously during	Holder of the EA / EPC contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
surrounding environment during operations	uncontrolled release of contaminated or grey water. To protect soil resources and prevent soil erosion.	should be designed and implemented, with a view to prevent the passage of concentrated flows from hardened surfaces and onto natural areas.	Plan for the operational phase. Inspect and verify if a Stormwater Management Plan has been compiled prior to the commencement of the operational phase.	operational phase. Once-off prior to the commencement of the operational phase.	
		All release points into the natural environment must have appropriate energy dissipaters to minimise scouring/erosion.	Monitor activities and record and report non-compliance. Monitor the placement of energy dissipaters via visual inspections, and record and report any non-compliance.	On-going	Holder of the EA / EPC contractor
		As far as reasonably possible, separate “clean” and “dirty” storm water. As far as reasonably possible, capture and contain “dirty” stormwater for appropriate disposal/discharge.	Monitor via site audits and record non-compliance and incidents (i.e., by implementing inspections).	Weekly or as required during operations.	Holder of the EA / EPC contractor
		Regular inspections of stormwater infrastructure should be undertaken to ensure that it is kept clear of all debris and weeds.	Undertake regular inspections of the stormwater infrastructure (i.e., by implementing walk through inspections).	Weekly/Monthly	Holder of the EA / EPC contractor
DECOMMISSIONING PHASE					
The proposed solar facility would be expected to run for a minimum period of 20 years, after which it would either be decommissioned, alternatively upgraded or an application submitted to obtain a new license. Should the plant be decommissioned, the solar field would be rehabilitated to its original (pre-development) state. In the (unlikely) event that none of the mitigation measures outlined for the construction and operational phases of the proposed project had been implemented, the period of time for recovery to take place would be extended. In the event that decommissioning occurs, and assuming implementation of mitigation measures, the hydrological regime should fully recover over time to present day conditions.					

EROSION MANAGEMENT PLAN

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
CONSTRUCTION PHASE					
Increased wind erosion and resultant deposition of dust	Prevent wind erosion and resultant deposition of dust on surrounding indigenous vegetation.	Sand, stone and cement should be stored in demarcated areas, and covered or sealed to prevent wind erosion and resultant deposition of dust on the surrounding indigenous vegetation.	Undertake regular inspections of the via site audits to verify that sand, stone and cement are stored and handled as instructed.	Daily	ECO and Contractor
		During construction, efforts should be made to retain as much natural vegetation as possible on the site, to reduce disturbed areas and maintain plant cover, thus reducing erosion risks.	Monitor activities via site inspections and record and report non-compliance.	Daily	ECO and Contractor
		All stockpiles must be protected from erosion and stored on flat areas where run-off will be minimised. Erosion and sedimentation into water bodies must be minimised through effective stabilisation.	Monitor the stockpiling process throughout the construction phase via visual site inspections. Record non-compliance and incidents.	Daily	ECO
Excessive loss of natural vegetation within the development footprint area	Prevent loss of natural vegetation through erosion.	Vegetation clearing during construction must be restricted to the footprint of the proposed project components and planned infrastructure only. It should be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time.	Monitor vegetation clearing throughout the construction phase via visual site inspections. Record non-compliance and incidents. Undertake regular monitoring for erosion to ensure is reduced and rectified as soon as possible.	Daily Daily	ECO and Contractor ECO
		Stockpile the shallow topsoil layer separately from the subsoil layers (especially if the excavation exceeds 0.5 m). Reinstatement the topsoil layers (containing seed and vegetative material) when construction is complete to allow the plants to rapidly re-colonise the bare soil areas.	Rehabilitate disturbed areas and monitor the presence of alien invasive species on site.	Daily (stockpiling) and once-off for the reinstatement of the topsoil layer	ECO and Contractor
		Re-seed with locally sourced seed of indigenous grass species that were recorded on site pre-construction.	Re-seed with seeds of indigenous grass species.	Once off	ECO with advice from specialist (if required)

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		Topsoil stockpiles not used in three months after stripping must be seeded to prevent dust and erosion.	Regular monitoring for erosion to ensure that no erosion problems are occurring at the site. All erosion problems observed should be rectified as soon as possible.	Weekly initially and thereafter monthly	ECO and Contractor
Erosion of surface soils, riling and gully's.	Measures to be implemented that address or avoid the loss of surface soils and exacerbates gully formation.	Identify cause of erosion and possible means of redress (i.e., implement erosion control measures, where applicable), such as the use of geofabric, stone gabions and re-vegetation or similar measures. Erosion control measures should seek to reduce surface flow velocity and allow for settlement on site of silt laden surface waters. Washaways, excessive loss of soils and galleys can be considered to be indicative of excessive erosion.	Monitor the erosion on site during construction, as well as the implementation and effectiveness of erosion control on site (such as the use of geofabric, stone gabions and re-vegetation or similar measures).	Ongoing and as required during erosion events.	ECO and Project Developer (Scatec Solar)
OPERATIONAL PHASE					
Excessive loss of natural vegetation in the development footprint area and resulting impacts on SSC, faunal habitat and habitat fragmentation.	Prevent loss of natural vegetation and minimise habitat fragmentation and the loss of connectivity as a result of erosion.	To prevent erosion, indigenous grasses that seed themselves below the solar arrays should (where possible) be left to form a ground cover and kept short.	ECO to advise on seed to be used.	Prior to re-vegetation.	Holder of the EA / EPC contractor
		The use of silt fences, sandbags or other suitable methods must be implemented in areas that are susceptible to erosion. Other erosion control measures that can be implemented are as follows: 1) Brush packing with cleared vegetation, 2) Planting of vegetation, 3) Hydro seeding/hand sowing. All erosion control mechanisms need to be regularly maintained.	Monitor efficiency of erosion control measures.	Weekly or monthly	Holder of the EA / EPC contractor
		Conduct regular monitoring for erosion to ensure that no erosion problems are occurring at the site as a result of the	Undertake regular monitoring for erosion to ensure is reduced and	Monthly	Holder of the EA / EPC contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		roads and other infrastructure. Ensure that all erosion problems are rectified as soon as possible.	rectified as soon as possible.		
Increased wind erosion and resultant deposition of dust.	Prevent wind erosion and resultant deposition of dust on surrounding indigenous vegetation.	Implement an effective system of run-off control, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion.	Include periodic site inspections in environmental performance reporting that inspects the effectiveness and integrity of the run-off control system and specifically records occurrence or non-occurrence of any erosion on site or downstream. Corrective action must be implemented to the run-off control system in the event of any erosion occurring.	Monthly	Holder of the EA / EPC contractor

DECOMMISSIONING PHASE

No specific impacts are associated with the decommissioning phase other than those from the operational phase that will still be relevant for the duration of the decommissioning phase due to on-going occupation of the area. Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas. Monitoring: Final external audit of area to confirm that area is rehabilitated to an acceptable level (once off event to be conducted by ECO).

FIRE MANAGEMENT PLAN

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
DESIGN PHASE					
Potential impacts resulting from the lack of overall compliance with the conditions of the EA (issued by the DEA)	Ensure compliance with all environmental conditions of approval (issued by DFFE as part of the EA).	Audit the implementation of the EMPr requirements.	Audit report on compliance with actions and monitoring requirements.	Weekly	ECO / ESA
		Establish clear and transparent reporting of the activities undertaken with regard to all recommendations included in the EMPr.	Audit report on compliance with actions and monitoring requirements.	Weekly	Holder of the EA / EPC contractor
CONSTRUCTION PHASE					
Potential risk of fire due to construction activities or behaviour of	Prevent fire on site resulting of workers smoking or starting fires (i.e., cooking, heating purposes).	Designate smoking areas, as well as areas for cooking, where the fire hazard could be regarded as insignificant.	Ad-hoc checks to ensure workers are smoking or cooking in designated areas only.	Daily	ECO and Contractor

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
staff on site during the construction phase		Educate workers on the dangers of open and/or unattended fires.	Ensure fire safety requirements are well understood and respected by construction personnel. Carry out Environmental Awareness Training. Conduct audits of the signed attendance registers.	Ongoing. Once-off training and ensure that all new staff are inducted. Monthly	ECO and Contractor/ Contractor/ ECO ECO
		Open fires must be prohibited. Appropriate fire safety training should also be provided to staff that are to be on the site for the duration of the construction phase.	Ensure fire safety requirements are well understood and respected by construction personnel. Provide basic fire safety training.	On-going	ECO and Contractor
		Fire-fighting equipment must be made available at various appropriate locations on the construction site.	Ensure fire safety requirements are well understood and respected by workers. Assurance of functionality of fire extinguishers via inspections and certification by an accredited fire service company.	On-going Bi-annually	ECO and Contractor Contractor
		No person other than a qualified specialist or personnel authorised by the Project Developer, will disturb animals on the site.	Check compliance with specified conditions using a report card and allocate fines when necessary.	On-going	ECO and Contractors
		Educate workers on site about suitable behaviour on site and initiate environmental awareness. Staff must be informed that no trapping, snaring or feeding of any animal will be allowed.	Carry out Environmental Awareness Training. Conduct audits of the signed attendance registers.	Once-off training and ensure that all new staff are inducted. Monthly	Contractor/ ECO ECO
		The Contractor should install and maintain Construction Site Information Boards in the position, quantity, design and dimensions specified by the Project Developer.	Monitor compliance and record non-compliance and incidents.	Before construction	ECO
		General building materials should be stored in appropriate designated areas on site such that there will be no	Monitor compliance and record non-compliance and incidents.	Before construction	ECO

Impact	Mitigation/Management Objectives	Mitigation/Management Actions	Monitoring		
			Methodology	Frequency	Responsibility
		runoff from these areas towards sensitive systems. The site camp must be removed after construction.			
		Make construction personnel aware of the importance of limiting water wastage, as well as reducing water use.	Conduct audits of the signed attendance registers.	Once-off training and ensure that all new staff are inducted. Monthly	Contractor/ ECO ECO
OPERATIONAL PHASE					
Potential risk of fire due to behaviour of staff on site during the operational phase	Ensure appropriate and efficient fire prevention during the operational phase.	Designate smoking areas as well as areas for cooking, where the fire hazard could be regarded as insignificant.	Random inspections during a month to ensure workers are smoking or starting fires in designated areas only.	Monthly	Facility Manager
		Educate workers on the dangers of open and/or unattended fires.	Ensure fire safety requirements are well understood and respected by operational personnel. Carry out Environmental Awareness Training. Conduct audits of the signed attendance registers.	Ongoing Once-off training and ensure that all new staff are inducted. Monthly	Facility Manager Facility Manager Facility Manager
		Open fires must be prohibited. Appropriate fire safety training should also be provided to staff that are to be on the site for the duration of the operational phase.	Ensure fire safety requirements are well understood and respected by operational personnel. Provide basic fire safety training.	On-going	Holder of the EA / EPC contractor
		Ensure that adequate fire-fighting equipment is available and easily accessible on site.	Ensure fire safety requirements are well understood and respected by workers. Assurance of functionality of fire extinguishers via inspections and certification by an accredited fire service company.	On-going Bi-annually	Holder of the EA / EPC contractor
DECOMMISSIONING PHASE					
Ensure that the construction mitigation and management measures are adhered to during the decommissioning phase.					

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.