



I1.2: Generic EMP for the On-site Substation



LEGACY

ENVIRONMENTAL
MANAGEMENT
CONSULTING

PROPOSED 150 MW CARPE DIEM NORTH SOLAR PHOTOVOLTAIC PLANT (SPP) ON PORTION 5 OF FARM VARKENSLAAGTE NO. 119 IQ, MERAFAONG CITY LOCAL MUNICIPALITY, WEST RAND DISTRICT MUNICIPALITY, GAUTENG

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

June 2025

DFFE REF.NO: 14/12/16/3/3/2/2658



PROJECT DETAILS

TITLE	Proposed 150 MW Carpe Diem North Solar Photovoltaic Plant (SPP) on Portion 5 of Farm Varkenslaagte No. 119 IQ, Merafong City Local Municipality, West Rand District Municipality, Gauteng
COMPETENT AUTHORITY REF. NO.	14/12/16/3/3/2/2658
REPORT TYPE	Generic Environmental Management Programme (EMPr)
REPORT STATUS	<u>Final</u>
LEGACY REF. NO.	22026-CDN-SPP-GES-FEIR-002
REVISION	2
REVISION DATE	June 2025
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CLIENT REF. NO.	-

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Signature of the Principal Environmental Assessment Practitioner

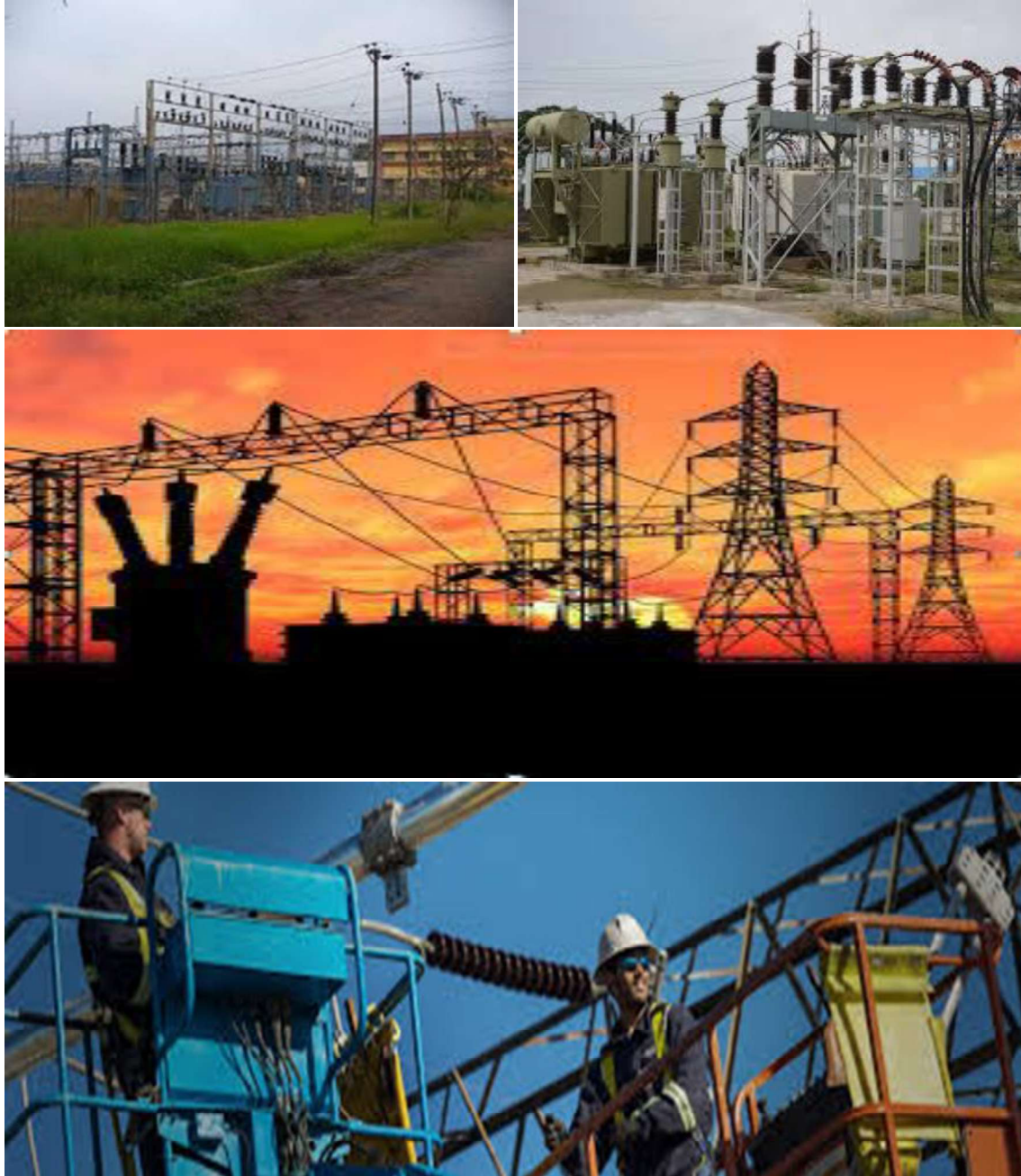
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Name of the Company

June 2025

Date

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



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 substation infrastructure for the transmission and distribution of electricity, and all listed and specified activities necessary for the realisation of such infrastructure.

3. Objective

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

4. Scope

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

5. Structure of this document

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

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

Part	Section	Heading	Content
			will comply with the pre-approved generic EMPr template contained in <u>Part B: Section 1</u>, and understands that the impact management outcomes and impact management actions are legally binding. The preliminary infrastructure layout must be finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management outcomes and impact management actions have been either pre-approved or approved in terms of <u>Part C</u>. 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.
C		Site specific sensitivities/ attributes	If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr, to manage impacts, these specific impact management outcomes and impact management actions must be included in this section. These specific environmental attributes must be referenced spatially and impact management outcomes and impact management actions must be provided. These specific impact management outcomes and impact management actions must be presented in the format of the pre-approved EMPr template (<u>Part B: section 1</u>) 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

Part	Section	Heading	Content
			approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only to additional impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in <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 property or farm in which the proposed substation infrastructure is proposed as well as the 21-digit Surveyor General code of each cadastral land parcel and, where available, the farm name.

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

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

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

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

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

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

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

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

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

“works” means the works to be executed in terms of the Contract

2. ACRONYMS and ABBREVIATIONS

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

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

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

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

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

Responsible Person(s)	Role and Responsibilities
Developer Site Supervisor (DSS)	<u>Role</u> 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. <u>Responsibilities</u> - 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)	<u>Role</u> The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non-compliance with the Performance Specifications as set out in the EA and EMPr. The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested & Affected Parties' (RI&AP's), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager, and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the

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

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

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

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

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

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

4.1 Document control/Filing system

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

4.2 Documentation to be available

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

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

4.3 Weekly Environmental Checklist

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

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

4.4 Environmental site meetings

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

4.5 Required Method Statements

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

The method statement must cover applicable details with regard to:

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

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

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

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

4.6 Environmental Incident Log (Diary)

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

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

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

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

The Environmental Incident Log will be captured in the EAR.

4.7 Non-compliance

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

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

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

4.8 Corrective action records

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

4.9 Photographic record

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

The Contractor shall:

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

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

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

4.10 Complaints register

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

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

4.11 Claims for damages

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

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

4.12 Interactions with affected parties

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

The ECOs shall:

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

4.13 Environmental audits

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

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

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

4.14 Final environmental audits

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

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

5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS

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

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

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must also be duly signed and dated on each page by the 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
- All staff must receive environmental awareness training prior to commencement of the activities; - The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course; - Refresher environmental awareness training is available as and when required; - All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr; - The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: a) Safety notifications; and b) No littering. - Environmental awareness training must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities;	The Contractor(s) and Contractor's Environmental Officer (CEO) must take responsibility for environmental awareness training.	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed Environmental Control Officer (ECO) is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.
					Monthly ECO Checklists and Attendance Registers at the respective training sessions.

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

5.2 Site Establishment development

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

Impact Management Actions	Implementation				Monitoring	
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management; - Location of camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through; - Sites must be located where possible on previously disturbed areas; - The camp must be fenced in accordance with Section 5.5: Fencing and gate installation; and - The use of existing accommodation for contractor staff, where possible, is encouraged.	The Contractor(s) and CEO must take responsibility for establishing the site and development footprint in a manner that does not detriment the environment.	To be sanctioned by the site agent with ECO before construction commences as defined in the EMPr and in the Method Statements submitted.	Pre-Construction Phase.	The appointed ECO is to ratify the areas designated for the construction uses and must monitor compliance with the required actions.	Once, prior to construction.	Monthly ECO Checklists and site photographs.

5.3 Access restricted areas

Impact management outcome: Access to restricted areas prevented.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identification of access restricted areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development; – Erect, demarcate and maintain a temporary barrier with clear signage around the perimeter of any access restricted area, colour coding could be used if appropriate; and – Unauthorised access and development related activity inside access restricted areas is prohibited.	The Developer's Project Manager (DPM), Contractor(s) and CEO must institute measures to restrict access to the site, and hence, minimise security risk during the construction phase.	As defined in the EMPr and in the Method Statements submitted.	Commencement, and for the duration, of the construction phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	Monthly ECO Checklists and site photographs.

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
- An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities; - All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition - All contractors must be made aware of all these access routes. - Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense; - Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads; - In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with section 4.9: photographic record; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor; - Access roads in flatfish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands - Access roads must only be developed on a pre-planned and approved roads.		The Contractor(s) and DEO must institute the necessary measures to minimise the disturbance to the terrestrial habitat on the site during the construction phase of the project.	Ensure access agreements have been attained with affected landowners.	Construction phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.
						Monthly ECO Checklists and site photographs.

5.5 Fencing and Gate installation

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

Impact Management Actions	Implementation				Monitoring	
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Use existing gates provided to gain access to all parts of the area authorised for development, where possible; – Existing and new gates to be recorded and documented in accordance with section 4.9: photographic record; – All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner; – At points where the line crosses a fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner; – Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground;	The DPM, Contractor(s) and the CEO must institute measures to restrict access to the site through ensuring that all relevant gates are utilised and maintained.	Identify and inform all relevant staff/construction personnel of the existing gates to be used on-site.	Commencement, and for the duration, of the construction phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	Monthly ECO Checklists and site photographs.

- Where gates are installed in jockal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate; - Original tension must be maintained in the fence wires; - All gates installed in electrified fencing must be re-electrified; - All demarcation fencing and barriers must be maintained in good working order for the duration of the development activities; - Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where applicable; - Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the land owner. - All fencing must be developed of high quality material bearing the SABS mark; - The use of razor wire as fencing must be avoided; - Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times; - On completion of the development phase all temporary fences are to be removed; - The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.					
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5.6 Water Supply Management

Impact management outcome: Undertake responsible water usage.	
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Impact Management Actions	Implementation	Monitoring
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Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis; - The Contractor must ensure the following: a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river; b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented. - Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training. - The use of grey water is encouraged.	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	Monthly ECO Checklists and site photographs. In addition, copies of the relevant Water Use Authorisations must be kept in the Environmental Site File.

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.

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

– Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager; – All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility; – 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.	The Contractor(s) and CEO must institute the necessary measures to ensure that any negative impacts to the environment as a result of storm water and wastewater discharges during construction are avoided.	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	Monthly ECO Checklists and site photographs The ECO should monitor the Contractor's compliance with the Stormwater Management Plan.
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5.8 Solid and hazardous waste management

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

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

- All measures regarding waste management must be undertaken using an integrated waste management approach; - Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided; - A suitably positioned and clearly demarcated waste collection site must be identified and provided; - The waste collection site must be maintained in a clean and orderly manner; - 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.	The Contractor(s) and CEO must institute the necessary measures to ensure that waste is appropriately stored, handled and safely disposed of.	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	Copies of the waste disposal slips must be submitted to the ECO for inclusion in the Monthly ECO Checklist report(s) and copies should be included in the Environment at Site File kept on-site. The ECO should monitor the Contractor's compliance with the Waste Management Plan for the site.
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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
- All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities; - In the event of a spill, prompt action must be taken to clear the polluted or affected areas; - Where possible, no development equipment must traverse any seasonal or permanent wetland - No return flow into the estuaries must be allowed and no disturbance of the Estuarine functional Zone should occur; - Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available; - There must not be any impact on the long term morphological dynamics of watercourses or estuaries; - Existing crossing points must be favored over the creation of new crossings (including temporary access) - When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: a) Water levels during the period of construction; No altering of the bed, banks, course or characteristics of a watercourse		The DPM, Contractor(s) and CEO must institute the necessary measures to ensure that no freshwater features on-site are detrimentally affected by the construction works.	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.
						Monthly ECO Checklists and site photographs. In addition, copies of any relevant Water Use Authorisation s should be included in the Environment al Site File kept on-site.

b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must be implemented e.g. including ensuring that construction equipment is well maintained;					
c) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and					
d) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.					

5.10 Vegetation clearing

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

Impact Management Actions		Implementation			Monitoring		
		Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
General: - Indigenous vegetation which does not interfere with the development must be left undisturbed; - Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species;		The Contractor(s) and CEO must institute the necessary measures to	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required	Monthly and/or more frequently as when required.	Monthly ECO Checklists and site photographs.

minimise the disturbance outside of the authorised development footprint.			actions for the duration of the contract(s).		
- Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing; - Permits for removal must be obtained from the relevant CA prior to the cutting or clearing of the affected species, and they must be filed; - The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals; - Trees felled due to construction must be documented and form part of the Environmental Audit Report; - Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris; - Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained; - A daily register must be kept of all relevant details of herbicide usage; - No herbicides must be used in estuaries; - All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance to Section 5.3: Access restricted areas. Alien invasive vegetation must be removed and disposed of at a licensed waste management facility.					

5.11 Protection of fauna

Impact management outcome: Disturbance to fauna is minimised.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present; - The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme; - Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present; - Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds; - No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas; - No deliberate or intentional killing of fauna is allowed; - In areas where snakes are abundant, snake deterrents to be deployed on the pylons to prevent snakes climbing up, being electrocuted and causing power outages; and - No Threatened or Protected species (ToPs) and/or protected fauna as listed according NEMBA (Act No. 10 of 2004) and relevant provincial ordinances may be removed and/or relocated without appropriate authorisations/permits.	The Contractor(s) and CEO must ensure that the terrestrial habitat and vegetation present on and around the development site is effectively managed.	As defined in the EMP and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	Monthly ECO Checklists and site photographs.

5.12 Protection of heritage resources

Impact management outcome: Impact to heritage resources is minimised.

Impact Management Actions	Implementation			Monitoring	
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency
- 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 a systematic and professional investigation can be undertaken. Sufficient time must be allowed to remove/collect such material before development recommences.	The Contractor(s) and CEO must ensure that all archaeological settings and artefacts are reported and conserved.	As defined in the EMPR and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.
					Monthly ECO Checklists and site photographs.

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
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	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.; - All unattended open excavations must be adequately fenced or demarcated; - Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding; - Ensure structures vulnerable to high winds are secured; - Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.	The DPM, Contractor(s) and CEO must institute the necessary measures to ensure that risks of injury, harm and/or complaints due to construction works are minimised.	As defined in the EMPr and in the Method Statements submitted.	Construction and Operational Phases.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	The CEO and should compile and maintain an incident and complaints register. All incidents and complaints must be reported to the ECO, the Contractor, and the DPM. The incident and complaints register must be submitted to the ECO monthly for inclusion in the Monthly ECO Checklist report(s).

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
– Mobile chemical toilets are installed onsite if no other ablution facilities are available; – The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances; – Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body; b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards; – A copy of the waste disposal certificates must be maintained.	The Contractor(s) and CEO must ensure that construction personnel have access to clean and maintained sanitation facilities.	As defined in the EMPr and in the Method Statements submitted.	Construction and Operational Phases.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.
					Monthly ECO Checklists and site photographs.

5.15 Prevention of disease

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Undertake environmentally-friendly pest control in the camp area; – Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS; – The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area; – Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable; – Free condoms must be made available to all staff on site at central points; – Medical support must be made available; – Provide access to Voluntary HIV Testing and Counselling Services.	The Contractor(s) must ensure that the necessary precautions are undertaken to prevent the spread of any disease within construction personnel.	Erection information posters regarding the spread of relevant diseases, including contact details of suitable support. Provision of medical guidance and support, where necessary.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as and when required.	Monthly ECO Checklists and inclusion of photographic evidence of information posters in the relevant audit report(s)

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
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	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; - The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation; - All staff must be made aware of emergency procedures as part of environmental awareness training; - The relevant local authority must be made aware of a fire as soon as it starts; - In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see Hazardous Substances section 5.17).	The DPM, Contractor(s) and CEO must institute the required emergency procedures to enable effective response to emergencies on-site.	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	The ECO should ensure that the Contractor has compiled an Emergency Response Action Plan and that emergency contact details are available at suitable locations within the construction site. Photographic evidence of the emergency contact details must be included in the ECO Monthly

- 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 bowers; - The tanks/ bowers 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/ bowers (110% statutory requirement plus an allowance for rainfall); - The floor of the bund must be sloped, draining to an oil separator;	that hazardous substances are appropriately handled, stored and disposed of.	Statements submitted.		compliance with the required actions for the duration of the contract(s).	as and when required.	compliance with all relevant Method Statements and Management Plans. In addition, the ECO should monitor the availability and use of spill kits and drip trays within the site and provide photographic evidence, where required. Copies of the HCS control sheet and the MSDS must be included in the
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- Provision must be made for refueling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained; - All empty externally dirty drums must be stored on a drip tray or within a bunded area; - No unauthorised access into the hazardous substances storage areas must be permitted; - No smoking must be allowed within the vicinity of the hazardous storage areas; - Adequate fire-fighting equipment must be made available at all hazardous storage areas; - Where refueling away from the dedicated refueling station is required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used; - An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times; - The responsible operator must have the required training to make use of the spill kit in emergency situations; - An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken; - In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to Section 5.7 for procedures concerning storm and waste water management and 5.8 for solid and hazardous waste management.						relevant ECO Monthly Checklist report(s) and kept in the Environmental Site File.
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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		Evidence of compliance
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	
- 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.	The Contractor(s) and CEO must ensure that construction works do not contaminate groundwater sources.	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	The ECO must monitor the Contractor's compliance with all relevant Method Statements and Management Plans. In addition, the ECO should monitor the availability and use of spill kits and drip trays within the site and provide photographic

						evidence, where required. Copies of the HCS control sheet and the MSDS must be included in the relevant ECO Monthly Checklist report(s) and kept in the Environmental Site File.
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5.19 *Batching plants*

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Concrete mixing must be carried out on an impermeable surface;	The Contractor(s) and CEO	As defined in the EMPr and in the Method	Construction Phase.	The appointed ECO is to	Monthly and/or more	The ECO must monitor the

- 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; - Temporary fencing must be erected around batching plants in accordance with Section 5.5: Fencing and gate installation.	must ensure the reduction of spillages and contamination on-site.	Statements submitted.	monitor compliance with the required actions for the duration of the contract(s).	frequently as and when required.	Contractor's compliance with all relevant Method Statements and Management Plans. Where relevant, the ECO should provide photographic evidence of the necessary temporary fencing relating to the batching plant(s) in the ECO Monthly Checklist report(s).
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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
– 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; – 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;		The Contractor(s) and CEO must implement dust prevention measures.	As defined in the EMP _r and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	Compliance with the relevant dust mitigation measures should be reported on the Monthly ECO Checklist report(s) . Additionally, the ECO should ensure that any complaints relating to dust are recorded in the incident and complaints register and addressed as soon as practically

– For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.						possible.
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5.21 *Blasting*

Impact management outcome: Impact to the environment is minimised through a safe blasting practice.
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Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Any blasting activity must be conducted by a suitably licensed blasting contractor; and - Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	The Contractor(s) and CEO must implement safe blasting practice.	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions.	Limited to the specific blasting times (if any blasting is required).	The ECO must audit the blasting activities to ensure that blasting is undertaken in accordance with all relevant legislation, guidelines, and by-laws. Proof of landowner notification for blasting activities must be

						included in the ECO Monthly Checklist report(s) . The ECO should ensure that any complaints relating to blasting are recorded in the incident and complaints register.
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5.22 Noise

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only;	The Contractor(s) and CEO	As defined in the EMPr and in the Method	Construction Phase.	The appointed ECO is to	Monthly and/or more	ECO Monthly Checklist

- 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.	must implement noise reduction measures during construction works.	Statements submitted.	monitor compliance with the required actions for the duration of the contract(s).	frequently as and when required.	report(s) to ensure that any complaints relating to noise are recorded in the incident and complaints register and addressed as a matter of urgency.
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5.23 Fire prevention

Impact management outcome: Prevention of uncontrollable fires.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Designate smoking areas where the fire hazard could be regarded as insignificant;	The Contractor(s) and CEO must take the	As defined in the EMPPr and in the Method	Construction Phase.	The appointed ECO is to monitor	Monthly and/or more frequently	Evidence of compliance Monthly ECO checklists

– Firefighting equipment must be available on all vehicles located on site; – The local Fire Protection Agency (FPA) must be informed of construction activities; – Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site; – Two way swop of contact details between ECO and FPA.	necessary measures to reduce the risk of fire on the property.	Statements submitted.		compliance with the required actions for the duration of the contract(s).	as and when required.	and site photographs.
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5.24 Stockpiling and stockpile areas

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses, watercourses and water bodies; – All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods; – Topsoil stockpiles must not exceed 2 m in height; – During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.);	The Contractor(s) and CEO must prevent against erosion and sedimentation on-site due to improper stockpiling practices.	As defined in the EMPR and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as and when required.	Monthly ECO Checklist report(s) and site photographs.

– Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.						
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5.25 Civil works

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Where terracing is required, topsoil must be collected and retained for the purpose of re-use later to rehabilitate disturbed areas not covered by yard stone; - Areas to be rehabilitated include terrace embankments and areas outside the high voltage yards; - Where required, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled; - These areas can be stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; - Rehabilitation of the disturbed areas must be managed in accordance with Section 5.35: Landscaping and rehabilitation; - All excess spoil generated during terracing activities must be disposed of in an appropriate manner and at a recognised landfill site; and	The Contractor(s) and CEO, in connection with the Botanical specialist (where relevant), must undertake civil works to create the substation terrace in an appropriate manner that minimizes impact to the	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as and when required.	Monthly ECO Checklist report(s) and site photographs.

– Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes.	environment.				
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5.26 Excavation of foundation, cable trenching and drainage systems

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

Impact Management Actions	Implementation			Monitoring		Evidence of compliance
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	
- All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a licensed landfill site, if not used for backfilling purposes; - Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes; - 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.	The Contractor(s) and CEO must undertake excavation, cable trenching and the installation of drainage systems in a manner that does not cause environmental degradation.	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	If backfilling is not undertaken, copies of the waste disposal slips must be submitted to the ECO for inclusion in the Monthly ECO Checklist report(s) , and copies must be kept

							in the Environment at Site File. The ECO should monitor the Contractor's compliance with the relevant conditions and Management Plans.
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5.27 Installation of foundations, cable trenching and drainage systems

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Batching of cement to be undertaken in accordance with Section 5.19: Batching plants; and - Residual solid waste must be disposed of in accordance with Section 5.8: Solid waste and hazardous management.	The Contractor(s) and CEO must undertake excavation, cable	As defined in the EMP and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required	Monthly and/or more frequently as when required.	If backfilling is not undertaken, copies of the waste disposal slips must be

	trenching and the installation of drainage systems in a manner that does not cause environmental degradation.			actions for the duration of the contract(s).		submitted to the ECO for inclusion in the Monthly ECO Checklist report(s) , and copies must be kept in the Environmental Site File. The ECO should monitor the Contractor's Compliance regarding the batching of cement in accordance with the relevant conditions and Management Plans.
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5.28 Installation of equipment (circuit breakers, current Transformers, Isolators, Insulators, surge arresters, voltage transformers, earth switches)

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Management of dust must be conducted in accordance with Section 5.20: Dust emissions; - Management of equipment used for installation must be conducted in accordance with Section 5.18: Workshop, equipment maintenance and storage; - Management hazardous substances and any associated spills must be conducted in accordance with Section 5.17: Hazardous substances; and - Residual solid waste must be recycled or disposed of in accordance with Section 5.8: Solid waste and hazardous management.	The Contractor(s) and CEO must ensure that all equipment installed is done so in a manner that does not cause environmental degradation.	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	If backfilling is not undertaken, copies of the waste disposal slips must be submitted to the ECO for inclusion in the Monthly ECO Checklist report(s), and copies must be kept in the Environmental Site File. The ECO should monitor the

							Contractor's compliance with the relevant conditions and Management Plans.
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5.29 Steelwork Assembly and Erection

Impact management outcome: No environmental degradation occurs as a result of steelwork assembly and erection.
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Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- During assembly, care must be taken to ensure that no wasted/unused materials are left on site e.g. bolts and nuts - Emergency repairs due to breakages of equipment must be managed in accordance with Section 5. 18: Workshop, equipment maintenance and storage and Section 5.16: Emergency procedures.	The Contractor(s) and CEO must ensure that all steelwork assembly and erection is conducted in a manner that does not cause environment	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	If backfilling is not undertaken, copies of the waste disposal slips must be submitted to the ECO for inclusion in the Monthly ECO Checklist

	al degradation.					report(s), and copies must be kept in the Environment al Site File. The ECO should monitor the Contractor's compliance with the relevant conditions and Management Plans.
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5.30 Cabling and Stringing

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

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

- Residual solid waste (off cuts etc.) shall be recycled or disposed of in accordance with Section 6.8: Solid waste and hazardous Management; - Management of equipment used for installation shall be conducted in accordance with Section 5.18: Workshop, equipment maintenance and storage; - Management hazardous substances and any associated spills shall be conducted in accordance with Section 5.17: Hazardous substances.	The Contractor(s) and CEO must undertake cabling and stringing of overhead lines in a manner that does not cause environmental degradation.	As defined in the EMPr and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	ECO to monitor the all cabling and the stringing of the overhead lines in accordance with the relevant management actions and conditions and provide photographic evidence. Contractor to provide photographic evidence of the stringing of overhead lines to ECO for inclusion in the Monthly ECO Checklist report(s) if the ECO is not able to be present.
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5.31 Testing and Commissioning (all equipment testing, earthing system, system integration)

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

Impact Management Actions		Implementation			Monitoring		
		Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
	Residual solid waste must be recycled or disposed of in accordance with Section 5.8: Solid waste and hazardous management.	The Contractor(s) and CEO must conduct testing and commissioning in a manner that does not cause environmental degradation.	As defined in the EMPR and in the Method Statements submitted.	Construction Phase.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	ECO to monitor that all recycling and/or disposing of waste is undertaken in accordance with the relevant waste management plan, and provide photographic evidence for inclusion in the Monthly ECO Checklist report(s).

5.32 Socio-economic

Impact management outcome: enhanced socio-economic development.

Impact Management Actions		Implementation			Monitoring		Evidence of compliance
		Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	
– Develop and implement communication strategies to facilitate public participation; – Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process; – Sustain continuous communication and liaison with neighboring owners and residents – Create work and training opportunities for local stakeholders; and – Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to local farmers.		The Contractor(s) and CEO must enhance socio-economic development of all site activities.	As defined in the EMPPr and in the Method Statements submitted.	All phases of development.	The appointed ECO is to monitor compliance with the required actions for the duration of the contract(s).	Monthly and/or more frequently as when required.	Incidents and complaints should be recorded by the Contractor and reported to the ECO within 48 hours and the ECO should report all incidents to the Monthly ECO Checklist report(s).

5.33 Temporary closure of site

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

Impact Management Actions		Implementation			Monitoring	
		Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency
		– Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in sections 5.17: Hazardous substances and 5.18: Workshop, equipment maintenance and storage; – Hazardous storage areas must be well ventilated; – Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service; – Emergency and contact details displayed must be displayed; – Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel; – Night hazards such as reflectors, lighting, traffic signage etc. must have been checked; – Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.; – Structures vulnerable to high winds must be secured; – Wind and dust mitigation must be implemented; – Cement and materials stores must have been secured; – Toilets must have been emptied and secured; – Refuse bins must have been emptied and secured; – Drip trays must have been emptied and secured.	As defined in the EMPr and in the Method Statements submitted.	All phases of development.	The Contractor, CEO and the appointed ECO are to monitor compliance with the required actions.	Whenever temporary site closure occurs. The ECO should undertake a site inspection prior to the temporary closure of the site. The ECO should include the temporary site closure dates as well as photographic evidence of the condition of the site in the conditions of the ECO Monthly

5.35 Landscaping and rehabilitation

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

Impact Management Actions	Implementation				Monitoring	
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed of to a registered waste site; - All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983 - All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983; - Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition; - Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners; - Rehabilitation of access roads outside of farmland; - Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition;	The Contractor and CEO, with the guidance of a suitably qualified Botanical Specialist, must ensure that disturbed areas are returned to their original condition.	As defined in the EMPr and in the Method Statements submitted.	Construction, Post-construction and Operational Phases.	The appointed ECO is to monitor compliance with the required actions.	Monthly and as and when required.	The ECO should monitor the site landscaping and rehabilitation against all required conditions in the EMPr and relevant specialist report(s). Photographic evidence should be provided in

– 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. The contract design specifications must be adhered to and implemented strictly; – Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150 mm of topsoil. – Where required, re-vegetation including hydro-seeding can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen; b) Pioneer species are included; c) Species chosen must be indigenous to the area with the seeds used coming from the area; d) Root systems must have a binding effect on the soil; e) The final product must not cause an ecological imbalance in the area						the Monthly ECO Checklist report(s) as well as the recommendation of additional mitigation measures.
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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: **JUWI Renewable Energies (Pty) Ltd**

Name of applicant: **JUWI Renewable Energies (Pty) Ltd (Contact person: Ms Justine Wyngaardt)**

Tel No: **+27 21 829 1643**

Fax No: **-**

Postal Address: **20th Floor, The Halyard, 4 Christiaan Barnard Street, Foreshore, Cape Town**

Physical Address: **20th Floor, The Halyard, 4 Christiaan Barnard Street, Foreshore, Cape Town**

7.1.2 Details and expertise of the EAP:

Name of applicant: **Legacy Environmental Management Consulting (Pty) Ltd**

Tel No: **+27 21 887 4000**

Fax No: **-**

E-mail address: **kim@legacyemc.co.za**

Expertise of the EAP (Curriculum Vitae included):

ND (Oceanography), BTech (Environmental Management), LLM (Environmental Law); EAPASA (2019/1269); Pr. Nat. Sci (117908); IAIAAsa (2762); IWMSA (20118035); ELA (2016/092/WC)

Expertise of the EAP (Curriculum Vitae included): **Please see Appendix 2 attached.**

7.1.3 Project name: **PROPOSED 150 MW CARPE DIEM NORTH SOLAR PHOTOVOLTAIC PLANT (SPP) ON PORTION 5 OF FARM VARKENSLAAGTE NO. 119 IQ, MERAFONG CITY LOCAL MUNICIPALITY, WEST RAND DISTRICT MUNICIPALITY, GAUTENG**

7.1.4 Description of the project:

The proposed Carpe Diem North SPP is a large-scale photovoltaic (PV) solar electricity generating facility with associated infrastructure, which lies within a Strategic Transmission Corridor. It is located in the area immediately north of, and adjacent to, Eskom's Carmel Main Transmission Substation (MTS), on Portion 5 of the Farm Varkenslaagte No. 119 IQ, near Carletonville, West Rand District Municipality, Gauteng. The development site property extends over approximately 290 hectares (ha) and the proposed development will have an electricity generation capacity of up to 150 megawatts (MW).

The Carpe Diem North SPP and associated infrastructure is located approximately 2 km south of the residential area of Welverdiend and 8.5 km south-west of the town of Carletonville in the Merafong City Municipality, Gauteng. The proposed development footprint is in a rural area i.e. it falls outside of the nearest

town's urban edge. The property is zoned Agriculture I but does not require rezoning to Industrial to accommodate the proposed development since the Merafong City Local Municipality's Merafong Land Use Management Document, 2020 states that, *"Renewable Energy Infrastructure is a primary land use right under the zoning of "Agriculture". Therefore, no re-zoning is required as the rights are already allocated, in terms of the scheme"*.

Originally, the Carpe Diem site was viewed as one project made up of two sections viz. Carpe Diem North, on Portion 5 of the Farm Varkenslaagte No. 119 IQ, which lies immediately to the north of Eskom's Carmel MTS on Portion 23 of the Farm Doornfontein No. 118 IQ, and Carpe Diem South, on Portion 27 of the Farm Doornfontein No. 118 IQ which lies immediately to the south of Eskom's Carmel MTS.

At the time, all specialists were appointed to assess the total, 'Carpe Diem', project area. Therefore, some Specialist Reports as appended to the Final Environmental Impact Assessment (FEIAR), include assessments of both Portion 5 of the Farm Varkenslaagte No. 119 IQ, as well as Portion 27 of the Farm Doornfontein No. 118 IQ, as one combined assessment. Nonetheless, the Specialists' sensitivity mapping/s contained in their respective reports, clearly indicate the site applicability of the respective assessment/s.

In addition, subsequent to the initiation of the original project, JUWI saw the opportunity to take advantage of the then recently adopted Battery Storage Exclusion Norm for the Exclusion of Identified Activities Associated with the Development and Expansion of Battery Storage Facilities from the Requirement to obtain an EA, as per Government Notice No. 4557, published in Gazette No. 50387, 27 March 2024 (the 'Norm'). JUWI then proposed the registration of an independent, stand-alone Battery Energy Storage System (BESS) facility under the Norm i.e., the Carpe Diem North BESS 1 (Pty) Ltd Facility, in the southern section of the Carpe Diem North SPP development property. This stand-alone BESS Facility was not linked to the Carpe Diem SPP in any way but was intended to serve the purpose of storing excess electricity from the National Grid for use during periods of peak demand or when there were shortfalls in National electricity supply. Consequently, some specialist reports indicate the proposed footprint for this stand-alone BESS Facility.

Although registration of the Carpe Diem North BESS 1 (Pty) Ltd Facility (or CDN BESS 1 Facility) was granted, as a completely separate project to the Carpe Diem North SPP development, the stand-alone CDN BESS 1 Facility was not selected as a preferred bidder. The Draft and Final Scoping Reports for the proposed Carpe Diem North SPP development indicated six layout alternatives for the SPP, three of which accommodated the potential development of the Carpe Diem North BESS 1 Facility.

Since the stand-alone BESS Facility was not successful as a preferred bidder, reference to it occupying part of what would have been the Carpe Diem North SPP site development layout, was removed in the Draft Environmental Impact Assessment Report (DEIAR) and the FEIAR. Therefore, besides the no-go alternative, there are now only three potential Carpe Diem North SPP (layout) alternatives.

Since many of the Specialist reports were compiled before removal of the Carpe Diem North BESS 1 (Pty) Ltd Facility from the scope of the EIA application, the stand-alone BESS footprint may still appear in certain Specialist Report maps of the site. Specialists were instructed to assess stand-alone BESS footprint first in terms of the development of a Solar PV array and then in terms of the stand-alone BESS.

The generating component of the SPP contains ground-based photovoltaic (PV) panel arrays mounted on either a single or dual-tracking axis system.

The proposed Carpe Diem North SPP development entails permanent and temporary/construction infrastructure development:

- Permanent infrastructure consists of the solar panel array, fencing, 4 m to 8 m wide internal (dirt/gravel) access roads, SPP inverters and transformers, an on-site substation including control rooms, operation and maintenance buildings including offices, ablutions, storage buildings, a conservancy tank, water storage facilities, stormwater management and OPL pylons leading from

the on-site substation to a point of connection with the National electricity grid. The on-site substation will comprise a collector station portion and a switching station portion.

- Temporary/construction infrastructure includes lay-down area/s, construction site offices, storage buildings, as well as a batching plant and stockpile area. Construction ablutions would be provided by means of regularly serviced portable toilets and tanker trucks would supply water.

Water supply will be sourced from either neighbouring farms or third-party water suppliers and trucked onto site for storage in above-ground water tanks.

Sewage will be treated via an on-site sewage package plant and conservancy tank. It is planned that waste water will be treated to an acceptable standard for reuse in dust suppression and routine SPP washing.

Waste (domestic and hazardous) will be temporarily stored on site in a designated area for periods of not more than and removed to the nearest appropriately registered waste disposal site via contracted service providers.

Electricity will be sourced from the SPP itself.

Access to the site will be via existing public roads which have been assessed by a Traffic Specialist and regarded as adequate to service the needs of the construction and operation phases of the proposed development.

The proposed Carpe Diem North SPP EA application consists of three main portions:

- The 150 MW Carpe Diem North SPP panel array with inverter-transformer stations;
- the on-site Carpe Diem North SPP substation which is, in essence, divided into two functional portions *viz.*
 - the IPP 'collector substation' portion where evacuated electricity from the SPP facility will be collected, and
 - the 'switching station' substation portion where the evacuated electricity will be stepped up/transformed from 33 kV to 132 kV before it is fed into the national grid;
- the 132 kV overhead power line strung on steel lattice pylons which will conduct electricity towards the point of connection with the national grid at Eskom's adjacent Carmel Substation.

As is common for these types of projects, the bulk of the permanent grid connection infrastructure which connects the project to the national grid via Eskom's Carmel Substation, will be handed over to Eskom once built. Future Eskom infrastructure is the portions ii(b) and iii, as listed above.

The Proponent plans to submit this project in the next Bid Window of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). In the event of an unsuccessful bid, the Proponent intends to bid the project in subsequent REIPPPP bidding windows.

7.1.5 Project location:

NO	FARM NAME (if applicable)	FARM NUMBER (if applicable)	PORTION NAME	PORTION NUMBER	LATITUDE	LONGITUDE
1	Varkenslaagte	Farm No. 119	N/A	Portion 5.	26°25'7.27"S	27°18'21.10"E

7.2 Sub-section 2: Development footprint site map

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

7.3 Sub-section 3: Declaration

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

Signature Proponent/applicant/ holder of EA

Date:

Leppanall

24 June 2025

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.

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

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

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

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.

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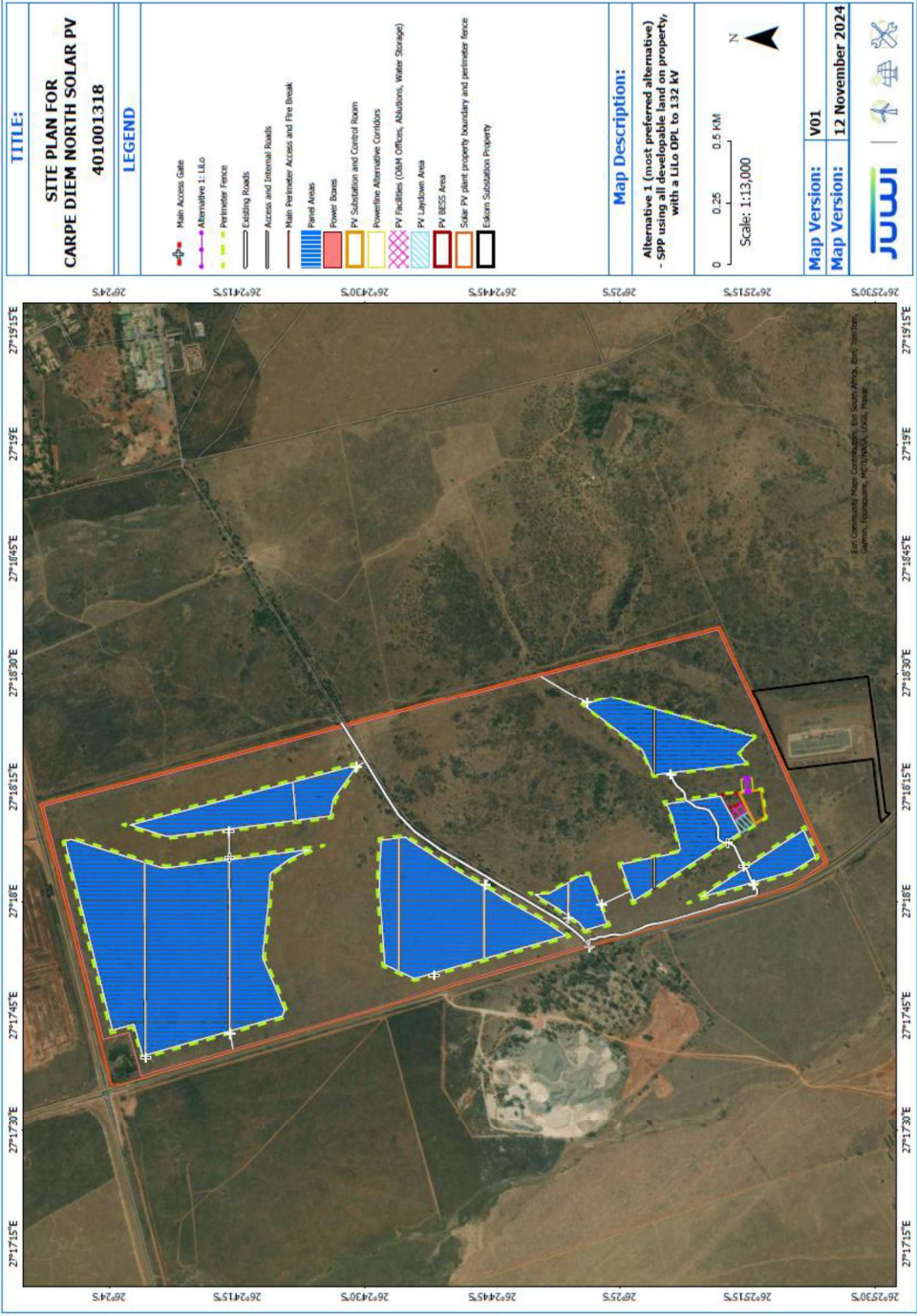


Figure 1: Detailed site layout map of the proposed Carpe Diem North SPP – Alternative 1 layout, the most preferred alternative, with a Loop-In-Loop-Out (LiLo) Overhead Power Line (OPL) connection to the existing Eskom 132 kV OPL.

The site boundary is given by the red polygon. Take note of the position of the OPL corridor, which is a result of the on-site SPP substation location within the site layout Alternative 1. Refer to the key alongside the figure for an indication of the proposed development infrastructure on the property.

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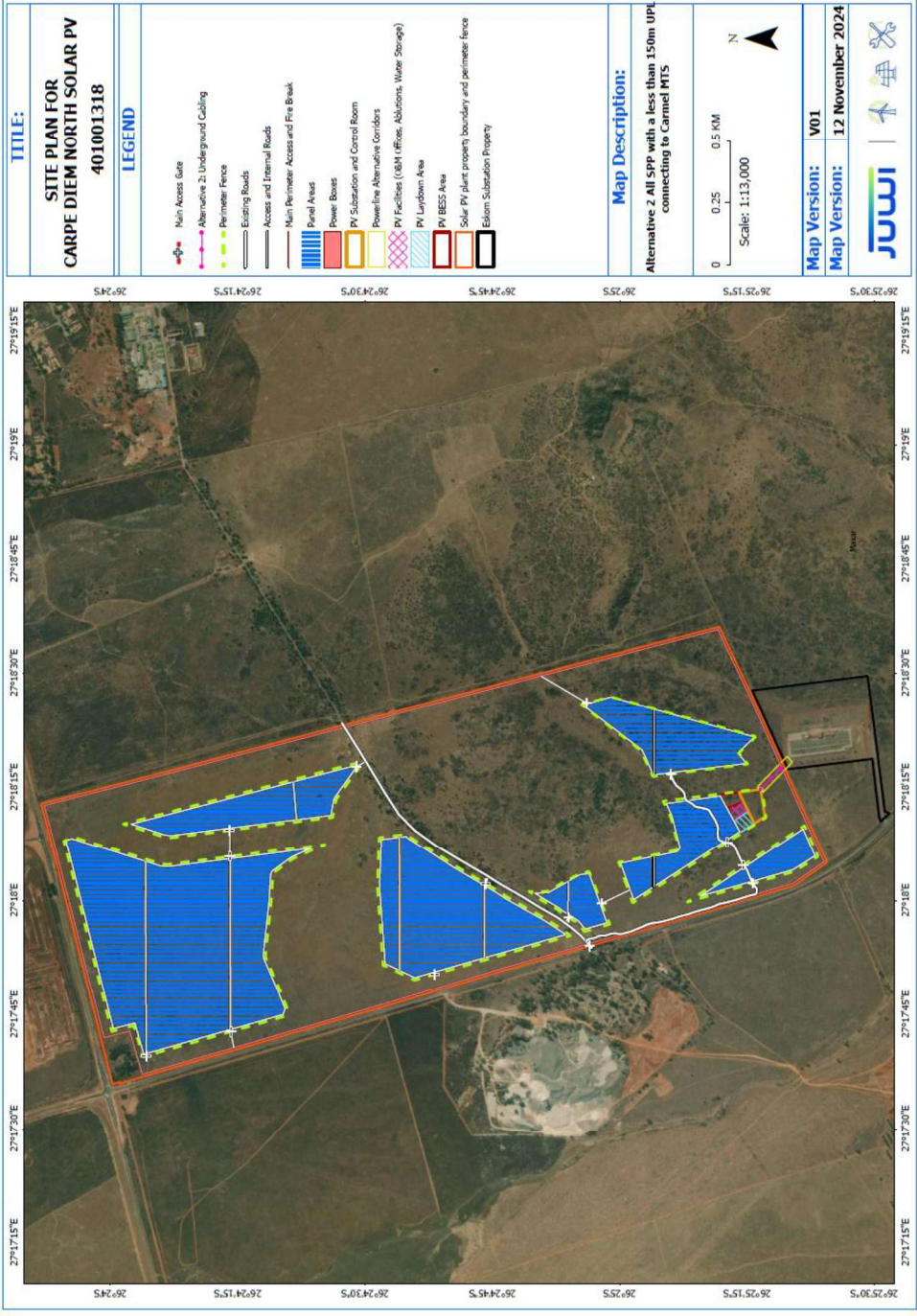


Figure 2: Detailed site layout map of the proposed Carpe Diem North SPP – Alternative 2 layout, with a less than 150 m Underground Power Line (UPL) connecting to the northern section of Carmel MTS where the subsurface power line becomes an OPL.

The UPL will be developed using trenchless excavation i.e., pipe-jacking. The site boundary is given by the red polygon. Take note of the position of the OPL corridor, which is a result of the on-site SPP substation location within the site layout Alternative 2. Refer to the key alongside the figure for an indication of the proposed development infrastructure.

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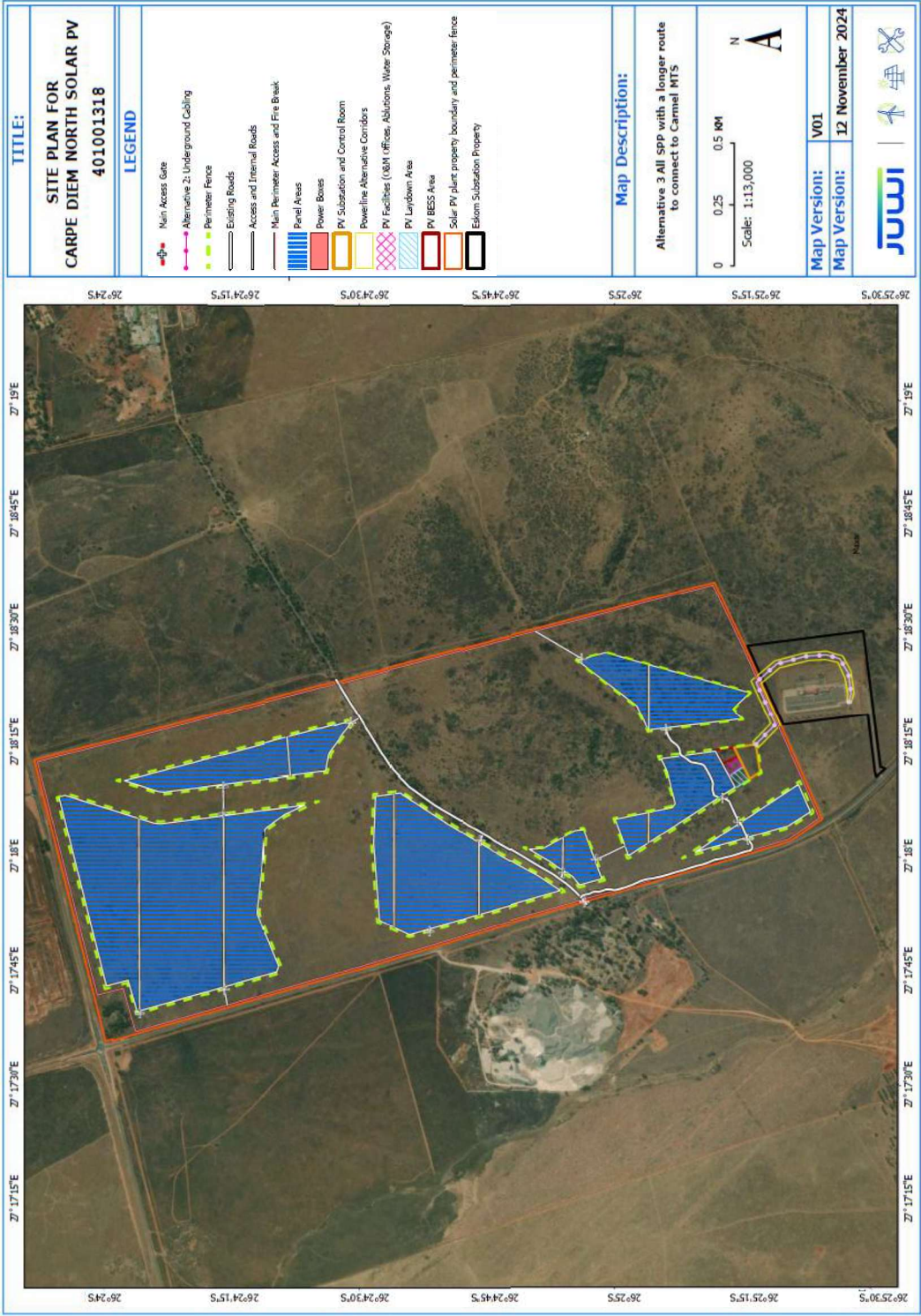


Figure 3: Detailed site layout map of the proposed Carpe Diem North SPP – Alternative 3 layout, the least preferred alternative.

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Alt. 3 has a longer grid connection (less than 900 m) comprising an initial underground section (approximately 520 m), which partially follows Alternative 1's UPL route before continuing to run underground along and within the southern boundary of Portion 5 of the Farm Varkenslaagte No. 119, and surfacing as an OPL (approximately 360 m) skirting around the eastern boundary of the Carmel MTS boundary and connecting to the southern section of the MTS. The UPL becomes an OPL only after it has crossed under the existing Eskom HV OPLs, which enter Carmel MTS property from the north-east. The site boundary is given by the red polygon. Take note of the position of the OPL corridor, which is a result of the on-site SPP substation location within the site layout Alternative 3. Refer to the key alongside Figure 3 for an indication of the proposed development infrastructure.

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Figure 4: Satellite image depicting corner co-ordinates of proposed Carpe Diem North on-site substation (represented by the orange polygon) to enable the stepping-up of medium voltage electricity to high voltage (132 kV) for grid connection tie-in.

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Table 1 below contains GPS co-ordinates that correspond to alpha-numeric dropped pins in **Figure 4** above for the on-site SPP substation, which comprises an IPP Collector Station, and future Eskom Switching Station.

Table 1: GPS co-ordinates for proposed Carpe Diem North SPP on-site substation footprint. Refer to Figure 4 above for corresponding corner/bend point markers/pins.

Carpe Diem North SPP On-site Substation Footprint (0.71 ha) on Portion 5 of Farm Varkenstaagte No. 119 IQ (excluding grid connection corridor/s):									
CORNER / BEND POINT	LATITUDE (S)			LONGITUDE (E)					
	DEG	MIN	SEC	DEG	MIN	SEC			
S.1	26°	25'	15.92"	27°	18'	10.22"			
S.2	26°	25'	14.10"	27°	18'	14.23"			
S.3	26°	25'	16.63"	27°	18'	14.69"			
S.4	26°	25'	17.09"	27°	18'	11.14"			

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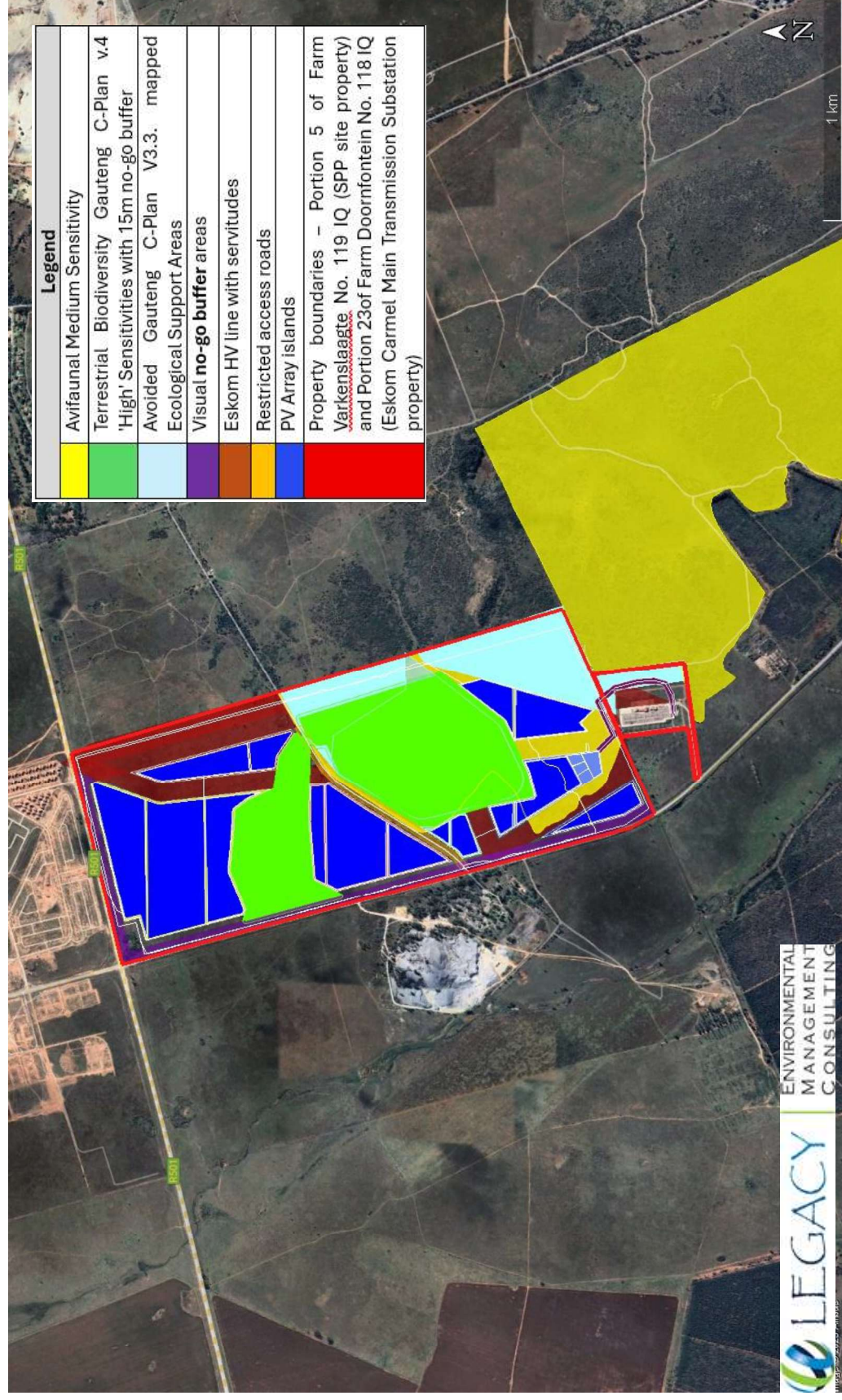


Figure 5: Carpe Diem North SPP proposed site layout map with biodiversity sensitivities, as well as other specialist sensitivities indicated for the site.

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Environmental sensitivities

Specialist observations and opinions, as pertains to the environmental sensitivities related to the OPLs associated with the Proposed 150 MW Carpe Diem North Solar Photovoltaic Plant (SPP) on Portion 5 of Farm Varkenslaagte No. 119 IQ, Merafong City Local Municipality, Gauteng, have been included below (together with any specific management and/or mitigation requirements and EAP recommendations):

i. Terrestrial Biodiversity

The proposed PV project is situated within an area dominated by anthropogenic activities including mining, industrial structures and residential development. The landscape is considered highly modified and fragmented, with patches of remaining grassland and bushveld habitat on important ridges. The study site is mainly situated within the Gauteng Shale Mountain Bushveld, and a small section towards the north-west in the Carletonville Dolomite Grassland (according to SANBI, 2018, as amended) (refer to **Figure 6** below), both listed as least concern. The proposed PV development also traverses Ecological Support Areas (ESAs), mainly owing to the remaining primary grassland and potential red list birds and orange list plants, of which three species, namely *Boophone disticha*, *Eucomis autumnalis* and *Hypoxis hemerocallidea* have been recorded and suitable habitat for several plant SCC are present. Furthermore, the high sensitivities on site are due to the site being located on a Class 1 and 2 ridge, Gauteng Province Environmental Management Framework (GPEMF) high control zone outside urban development zone, National Protected Areas Expansion Strategy (NPAES) priority focus area including provincial Protected Areas Expansion Strategy (PAES) and important ecological corridors. However, both On-site Substation Alternatives 1 and 2 avoid all of the above-mentioned biodiversity sensitivities.

Note that both On-site Substation Alternatives fall outside of any mapped Gauteng C-Plan (v3.3 or v4) Ecological Support Areas (ESA) – refer to **Figure 7** below.

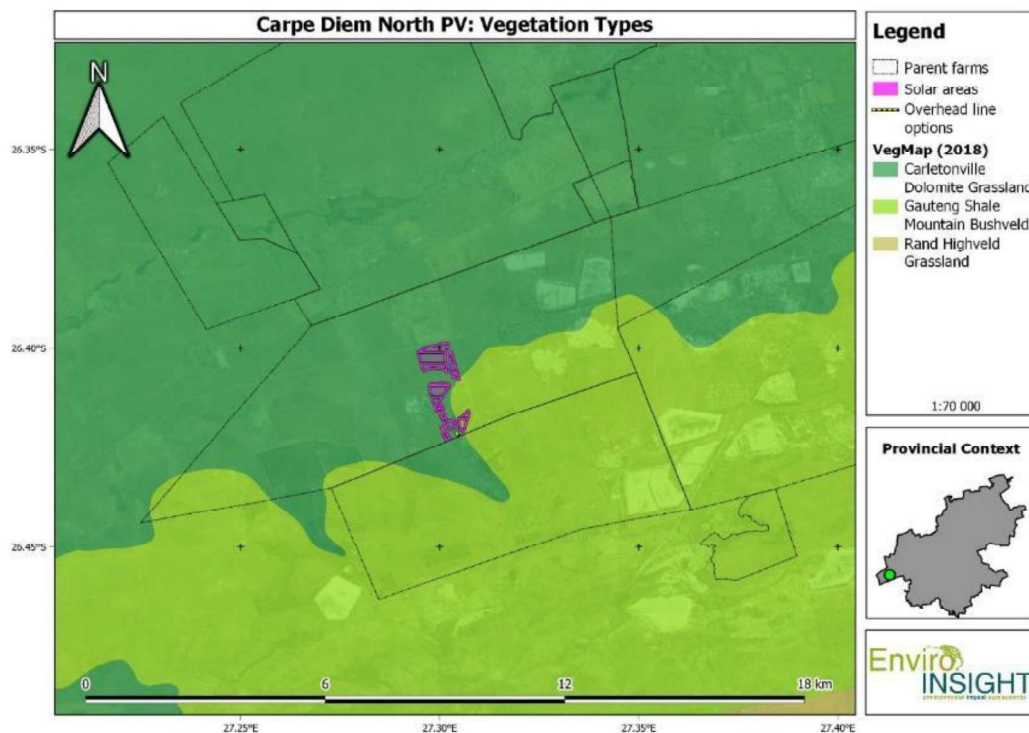


Figure 6: The proposed Carpe Diem North Solar PV in relation to vegetation types (SANBI 2018, as amended).

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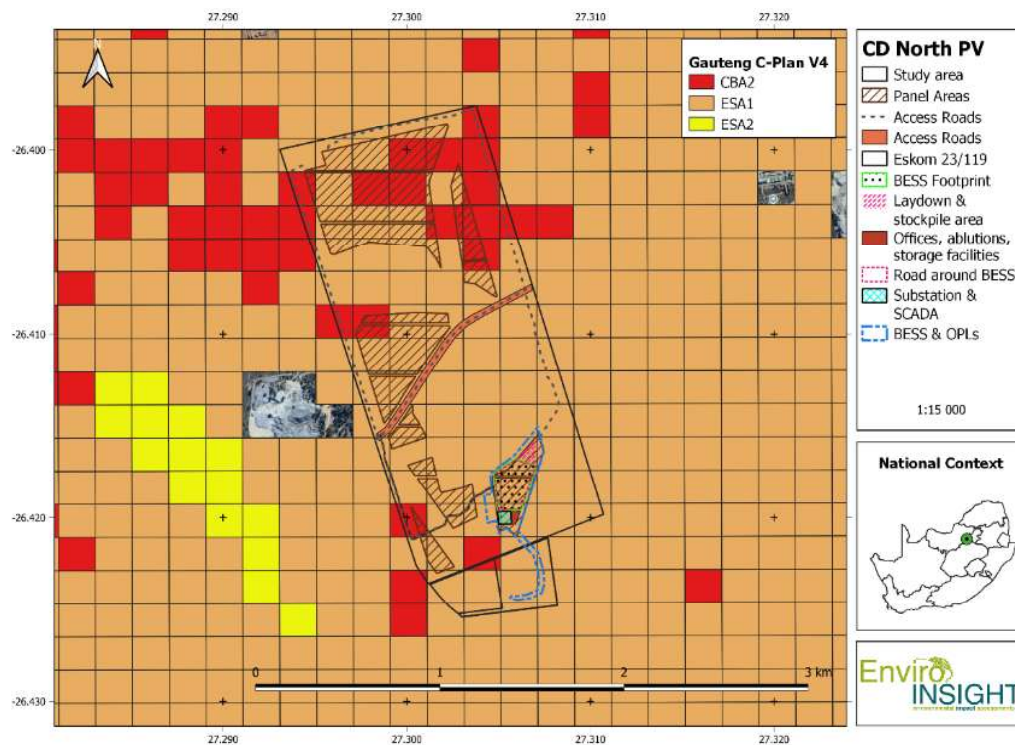


Figure 7: Location of the proposed Carpe Diem North PV in relation to the 2024 Gauteng C-Plan V4.

The loss of topsoil and fragmentation of natural habitats that is virtually unavoidable with any type of development, has a negative impact on the regional ecosystem as it disrupts the natural flow of ecosystem services and affects all fauna and flora that are dependent on those habitats. The impact of clearing of the vegetation is High Negative, especially for the construction of permanent infrastructure such as internal roads and other associated infrastructure, and temporary infrastructure (including construction camp and laydown area) during the construction phase. Accordingly, the Grassland and Bushveld as mapped by the specialist, must be excluded from these activities where no meaningful rehabilitation and mitigation measures are possible.

Although an effective rehabilitation and management plan has been drafted (refer to Appendix E of the Standard EMPr) to ensure the continuous functionality of the grassland system especially where development will take place, taking the construction phase impacts into account, the on-site substation footprint will remain permanently clear of vegetation (for safety reasons and in line with Eskom's standards). Therefore, there will be no vegetation layer in the actual substation yard (for the collector and switching station portions).

The specific requirements for inclusion in the EMPr, as identified by the terrestrial biodiversity specialist as related to the development of built structures such as the on-site substation, have already been captured in the standard EMPr.

ii. Soil, Land Use and Agricultural Potential

The screening tool rating of the agricultural sensitivity of the assessment area is mostly medium. but it includes some areas of high sensitivity. The agricultural assessment disputed the classified land capability, based on the assessment of the cropping potential of the site, which was verified by the soil scientists to have a land capability maximum of 7 (unsuitable for cropping). Instead, the soil scientist assessed the entire site to be of medium agricultural sensitivity.

The cropping potential of the site was found to be limited predominantly by the shallow soils. The site is not suitable for rain-fed crop production. The limited agricultural potential of the site limits its

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agricultural use to grazing only. The loss of grazing land, of which there is no particular scarcity in the country, represents a minimal loss of agricultural production potential in terms of national food security and for the affected farm. Due to the fact that no viable cropland is lost as a result of this development, its negative agricultural impact¹ is therefore assessed as being of low significance and as acceptable.

Its acceptability of the proposed development is substantiated by the following points:

- The amount of agricultural land use by the development is within the allowable development limits prescribed by the agricultural protocol. These limits reflect the national need to conserve valuable agricultural land and therefore to steer, particularly renewable energy developments, onto land with low agricultural production potential.
- The proposed development will also have the wider societal benefits of generating additional income and employment in the local economy.
- In addition, the proposed development will contribute to the country's urgent need for energy generation, particularly renewable energy that has much lower environmental and agricultural impact than existing, coal powered energy generation.
- All renewable energy development in South Africa decreases the need for coal power and thereby contributes to reducing the large agricultural impact that open cast coal mining has on highly productive agricultural land throughout the coal mining areas of the country.

From an agricultural impact point of view, it was recommended that the proposed development be approved.

Specific requirements for inclusion in the EMP, as identified by the agricultural specialist and as related to the development of built structures such as the on-site substation, have already been captured in the standard EMP.

iii. Aquatic Features

Desktop resources indicate no aquatic features within Portion 5 of Farm Varkenslaagte No. 119, which was confirmed during the site assessments. The aquatic specialist found no wetlands, rivers nor drainage lines present on the proposed site. Hence, it was confirmed that the majority of the development area on the site was of 'Low' aquatic sensitivity and no recommendations have been made for mitigation of aquatic impacts due to the proposed development.

iv. Avifaunal Features

The density and diversity of Priority Species was recorded by the avifaunal specialist to be 'low' and most of these species were common and widespread and largely synanthropic (water and natural grassland associates excluded) and the density and diversity of SCC was very low.

The proposed project is situated within an area dominated by anthropogenic activities including mining, industrial structures and residential development. The landscape is thus highly modified and fragmented, with only patches of remaining natural grassland. Five main habitats were identified based on species composition and structure as well as transformed areas where no or limited vegetation remains. The five habitats include: Grassland, Disturbed Grassland, and Bushveld/Rocky Grassland Mosaic, Watercourse and Dam, Alien Invasive Species Stands.

The development of the proposed Carpe Diem North SPP does indicate some potentially significant impacts (without mitigation) to the receiving environment via the risk to Priority Species (such as raptors) and need to be considered with provision made within the EMP for this development. The impact assessment and monitoring programmes indicated that the impacts can be mitigated to acceptable levels.

Overall, it is still the opinion of the avifaunal specialist that the impacts associated with SPP projects are far preferable (from an environmental impact perspective) to extractive and/ or non-renewable

¹ An agricultural impact is a change to the future agricultural production potential of land.

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alternatives or even Wind Energy Facilities (WEF). As mentioned by the Avifaunal Specialist the Avifaunal Specialist Report, "... must be considered in context with the greater EIA process which factors in economic desirability, etc".

Avoidance mitigation for impacts that result from the development of the on-site substation during the construction and operational phases, are captured in the Standard EMP.

All specific requirements (mitigation and monitoring) for inclusion in the EMP as related to the development of built structures such as the on-site substation, and as identified by the avifaunal specialist, have already been captured in the standard EMP.

v. Engineering Services

A civil engineering services report was undertaken for the proposed development. Due to location of the site in proximity of existing services, it is proposed that the sewerage e.g., from offices and/or control rooms associated with the on-site substation, is treated by providing an onsite package plant.

It was concluded that the solar facility can be accommodated for its various service needs – i.e., water demand, sewerage, stormwater system, road network and solid waste.

vi. Geohydrological

The water requirements for the proposed Carpe Diem Solar PV Facility are as follows:

- Construction phase 14 400 m³/a (0.46 L/s)
- Operational phase: 4 200 m³/a (0.13 L/s).

The distribution of boreholes across the proposed area have been assessed in relation to the farm portions with special reference to the allowable General Authorisation volumes for each of the constituent farm portions that comprise the proposed Carpe Diem Solar PV Facility and surrounds.

Reference has been made to three scenarios to meet the required peak (construction) water supply of 14 400 m³/a for the proposed Carpe Diem Solar PV Facility. The volumes of water required for the development should be readily available. Despite the investigation on potential water supply through groundwater abstraction, the Applicant has decided to source water supply from either neighbouring farms or third-party water suppliers, which will be trucked onto site for storage in above-ground water tanks. Consequently, none of the impacts related to groundwater abstraction and supply are relevant to the proposed Carpe Diem South SPP.

The following recommendations have been made in the Geohydrological report:

- All mitigation measures related to the groundwater contamination from BESS leakages, accidental oil and fuel spillages (which may occur within the on-site substation footprint), and cleaning agents proposed by the specialist need to be adhered to.

The specific requirements for inclusion in the EMP, as identified by the geohydrological specialist and as related to the development of built structures such as the on-site substation, have already been captured in the standard EMP.

vii. Heritage

During the fieldwork conducted by the heritage specialists in March 2023, no archaeological sites or burial grounds and graves were identified on Portion 5 of the Farm Varkenslaagte No. 119 IQ.

According to the Palaeosensitivity Map available on the South African Heritage Resources Information System database (SAHRIS), the Palaeontological Sensitivity of the proposed development areas is rated as 'Very High' (Almond and Pether 2008, SAHRIS website). A field assessment as part of a field-based Phase 1 palaeontological assessment will be required.

Despite an intensive walkthrough of the footprint area for the proposed project by the heritage specialists, no evidence for any archaeological or heritage sites could be identified within the environs

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of the study area. As a result, no objection to the proposed construction was given, under the condition that a walkdown of the final approved footprints be conducted before construction commences.

Specific requirements for inclusion in the EMP, as identified by the heritage specialists and as related to the development of built structures such as the on-site substation, have already been captured in the standard EMP.

viii. Traffic

The traffic impact assessment found that all the intersections operated under capacity and with an acceptable level of service for the existing and future scenarios. No road upgrades were found to be required to accommodate the traffic generated from the proposed development both during the construction and operational phases.

It is recommended that at least 10 parking bays be provided on site. To cater to the pedestrian movements, sidewalks are to be constructed along the roads that lead to the proposed development sites.

From a traffic engineering perspective, the proposed development on the Carpe Diem site is expected to have a minimal traffic impact on the current surrounding road network. However, the extent of the site boundary is yet to be confirmed, and final recommendations will be provided once the extent of the site has been finalised.

Hence it is recommended that the development be approved from a traffic engineering perspective.

Specific requirements for inclusion in the EMP, as identified by the traffic specialist and as related to the development of built structures such as the on-site substation, have already been captured in the standard EMP.

ix. Visual

The proposed project site is located immediately south of the R501, and new residential areas are being constructed north of the Provincial Road. The site extends south from the R501 with its southern most boundary approximately 1,0km north-east of the Deelkraal Estate. The site is approximately 8km west and south-west of residential areas associated with Merafong City (Oberholzer and Careletonville). The northern most boundary of the site is 1,8km southeast of the southernmost sections of Welverdiend.

The study area's scenic quality has been rated low to moderate to high within the context of the sub-region. Sensitive viewing areas have been identified and mapped, indicating potential sensitivity to the Project, mainly for new residential areas (not yet occupied) to the immediate north of the site and for residences associated with Deelkraal Nature Estate south-west of the site.

Construction activities include the removal of vegetation, earthworks required to create building terraces for internal substations, the preparation of internal roads and excavations for the array structures foundations, and the erection of the PV arrays and associated infrastructure such as the substation. Construction activities would negatively affect the landscape's visual quality and sense of place relative to its baseline. They would contrast with the patterns that define the structure of the landscape. Operational activities include the maintenance of all other infrastructural components. Security lighting and other lighting associated with the movement of security vehicles at night also contribute to the visual impact. These activities and the physical presence of the Project components day and night constitute the visual impact.

Impacts on views are the highest when viewers are sensitive to change in the landscape, and the view is focused on and dominated by the change. The Project's visual impact will cause changes in the landscape that are noticeable to people viewing the landscape from the public road immediately west of the site and the residential areas north of the site.

PART C

8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

The following general actions are recommended:

Planning and site development:

- With the preparation of the land within the full extent of the Project site onto which activities will take place, the minimum amount of existing vegetation and topsoil should be removed.
- Specifications with regards to the placement of construction camps (if required), as well as a site plan of the construction camp, indicating waste areas, storage areas and placement of ablution facilities, should be included in the EMP. These areas should either be screened or positioned in areas where they would be less visible from the public road north of the Project site.
- Construction activities should be limited to between 08:00 and 17:00 or in conjunction with the ECO.
- Adopt responsible construction practices that strictly contain the construction/establishment activities to demarcated areas.
- Building or waste material discarded should be undertaken at an authorised location, which should not be within any sensitive areas.

Earthworks and vegetation:

- Earthworks should be executed so that only the footprint and a small 'construction buffer zone' around the proposed activities are exposed. In all other areas, the naturally occurring vegetation should be retained, especially along the periphery of the site(s).
- All cut and fill slopes (if any) and areas affected by construction work should be progressively top soiled and re-vegetated as soon as possible.
- Disturbed soil must be exposed for the minimum time possible once cleared of vegetation to avoid prolonged exposure to wind and water erosion and to minimise dust generation.

Structures and associated infrastructure:

- "Housekeeping" procedures should be developed for the Project to ensure that the project site and lands adjacent to it are kept clean of debris, garbage, graffiti, fugitive trash, or waste generated on-site; procedures should extend to control of "track out" of dirt on vehicles leaving the active construction site and controlling sediment in stormwater runoff.
- During construction, temporary fences surrounding the material storage yards and laydown areas should be covered with 'shack' cloth (khaki coloured) or shade.
- Operating facilities should be actively maintained during operation.

Lighting:

Light pollution is largely the result of bad lighting design, which allows artificial light to shine outward and upward into the sky, where it is not wanted, instead of focusing the light downward, where it is needed. Ill designed lighting washes out the darkness of the night sky and radically alters the light levels in rural areas where light sources shine as 'beacons' against the dark sky and are generally not wanted. Of all the pollutions faced, light pollution is perhaps the most easily remedied. Simple changes in lighting design and installation yield immediate changes in the amount of light spilled into the atmosphere. The following are measures that must be considered in the lighting design of the Project, particularly at the management and service platforms:

- Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the site i.e., lights are to be aimed away from adjacent farmsteads areas, specifically west and north of the Project site.
- Minimize the number of light fixtures to the bare minimum, including security lighting.
- Avoid high pole top security lighting along the periphery of the site and use only lights activated on illegal entry to the site.

PART C

8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

Specific requirements for inclusion in the EMP, as identified by the visual specialist and as related to the development of built structures such as the on-site substation, have already been captured in the standard EMP.

x. Socio-Economic:

It is clear from National, Provincial, District and Local legislation, policies, strategies and action programmes that targets have been set to achieve a greater energy output from renewable energy sources. There is growing pressure on the stable and reliable provision of electricity generation throughout the country, and Eskom's inability to guarantee constant supply requires investment in alternative and renewable energy sources.

The proposed on-site substation is a critical component of the proposed Carpe Diem North development being able to supply electricity generated to the national grid – supporting efforts to explore alternative – and renewable - sources of electricity.

From a Socio-economic perspective there are no specific substation-related mitigation or monitoring recommendations that have been made by the specialist.

Specific requirements for inclusion in the EMP, as identified by the socio-economic specialist and as related to the development of built structures such as the on-site substation, have already been captured in the standard EMP.