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

EMPr for the Proposed new Heuningspruit 50MW PV Solar Facility and Storage, near Koppies, Free State Province

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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INTRODUCTION

1. Background

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

2. Purpose

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

3. Objective

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

4. Scope

The scope of this generic EMPr applies to the development or expansion of overhead electricity transmission and distribution infrastructure requiring EA in terms of NEMA, i.e. with a capacity of 33 kilovolts or more. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, as amended, and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, as amended, and all associated listed or specified activities necessary for the realisation of such infrastructure.

5. Structure of this document

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

Part	Section	Heading	Content
A		Provides general guidance and information and is **not legally binding**	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved generic EMPr template	Contains generally accepted impact management outcomes and impact management actions required for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of overhead electricity transmission and distribution infrastructure, which are presented in the form of a template that has been pre-approved. 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 will comply with the pre-approved generic EMPr template contained in Part B: Section 1, and understands that the impact management outcomes and impact management actions are **legally binding**. The preliminary infrastructure layout must be finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management

Part	Section	Heading	Content
			outcomes and actions have been either pre-approved or approved in terms of Part C. This section **must be** submitted to the CA together with the final BAR or EIAR. The information submitted to the CA will be considered to be incomplete should a signed copy of Part B: section 2 not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.
C		Site specific sensitivities/ attributes	If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr, to manage impacts, these specific impact management outcomes and impact management actions must be included in this section. These specific environmental attributes must be referenced spatially and impact management outcomes and impact management actions must be provided. These specific impact management outcomes and impact management actions must be presented in the format of the pre-approved EMPr template (Part B: section 1) This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if Part C is applicable to the site, it **is required** to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP, and must contain his/her name and expertise including a curriculum vitae. Once approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only **to additional** impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in Part B: section 1.
Appendix 1			Contains the method statements to be prepared prior to commencement of the activity. The

Part	Section	Heading	Content
			method statements are **not required** to be submitted to the competent authority.

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

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

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

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

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

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

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

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

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

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

Sub-section 2 is to be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout using the national web based environmental

screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps must identify features both within the planned working area and any known sensitive features in the surrounding landscape within 50m from the development footprint. The overhead transmission and distribution profile must be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions must be used.

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

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

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

PART A – GENERAL INFORMATION

1. DEFINITIONS

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

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

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

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

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

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

The method statement must cover applicable details with regard to:

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

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

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

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

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

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

2. ACRONYMS and ABBREVIATIONS

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

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

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

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

Responsible Person (s)	**Role and Responsibilities**
Developer's Project Manager (DPM)	<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.
Developer Site Supervisor (DSS)	<u>Role</u>

Responsible Person (s)	Role and Responsibilities
	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 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.

Responsible Person (s)	Role and Responsibilities
	Responsibilities 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; - Assisting in the resolution of conflicts; - Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor; - In case of non-compliances, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; - Maintenance, update and review of the EMPr; - Communication of all modifications to the EMPr to the relevant stakeholders.

Responsible Person (s)	Role and Responsibilities
developer Environmental Officer (dEO)	Role 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. Responsibilities - Be fully conversant with the EMPr; - Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) ; - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared; - Assist the contractor in investigating environmental incidents and compile investigation reports; - Follow-up on pre-warnings, defects, non-conformance reports; - Measure and communicate environmental performance to the Contractor; - Conduct environmental awareness training on site together with ECO and cEO; - Ensure that the necessary legal permits and / or licenses are in place and up to date; - Acting as Developer's Environmental Representative on site and work together with the ECO and contractor;
Contractor	Role The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where

Responsible Person (s)	Role and Responsibilities
	specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development or expansion for overhead electricity transmission and distribution infrastructure activities. Responsibilities - project delivery and quality control for the development services as per appointment; - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period; - ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely; - attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones; - ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO.
contractor Environmental Officer (cEO)	Role 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: Responsibilities - Be on site throughout the duration of the project and be dedicated to the project; - Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site; - Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements; - Attend the Environmental Site Meeting;

Responsible Person (s)	Role and Responsibilities
	- Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; - Report back formally on the completion of corrective actions; - Assist the ECO in maintaining all the site documentation; - Prepare the site inspection reports and corrective action reports for submission to the ECO; - Assist the ECO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

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

4.1 Document control/Filing system

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

4.2 Documentation to be available

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

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

4.3 Weekly Environmental Checklist

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

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

4.4 Environmental site meetings

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

4.5 Required Method Statements

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

The method statement must cover applicable details with regard to:

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

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

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

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

4.6 Environmental Incident Log (Diary)

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

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

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

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

The Environmental Incident Log will be captured in the EAR.

4.7 Non-compliance

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

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

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

4.8 Corrective action records

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

4.9 Photographic record

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

The Contractor shall:

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

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

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

4.10 Complaints register

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

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

4.11 Claims for damages

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

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

4.12 Interactions with affected parties

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

The ECOs shall:

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

4.13 Environmental audits

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

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

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

4.14 Final environmental audits

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

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

5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS

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

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

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

5.1 Environmental awareness training

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All staff must receive environmental awareness training prior to commencement of the activities; – The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course; – Refresher environmental awareness training is available as and when required; – All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr; – The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: a)Safety notifications; and b) No littering. – Environmental awareness training must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities;	Contractor & CEO	Contractor to provide Training Programme Induction course Refresher Daily toolbox talks Courses to be provided by suitably qualified persons and in a language and medium understood by the workers Erect signage and place posters	From Pre-construction Phase and Construction Period	DEO & ECO	As and when the training is required.	Records of training and awareness conducted (e.g. training material such as training presentation, programme, completed attendance registers, etc.)

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

5.2 Site Establishment development

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;	DPM & Contractor	Signed agreements with land-owners Clear layout of the construction camp Inspection of conditions of private roads Rehabilitation Method Statement to	Pre-construction & construction phases	DEO & ECO	Monthly	Visible signage Proof of training Public Complaints Register Inspection of access roads

– 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.		include temporary access roads Training and awareness				Approved method statement

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	Contractor & CEO	Report capturing findings of site walk through (pre-construction survey) Training Method Statement for barricading / colour coding	Pre-construction & construction phases	dEO & ECO	Monthly	Visible signage (photographic records) Visible Demarcations Proof of training

– Unauthorised access and development related activity inside access restricted areas is prohibited.						Temporary barrier with clear signage.

5.4 Access roads

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Access to the **PV Solar Energy Facility**, servitude and tower positions must be negotiated with the relevant landowner and must fall within the assessed and authorised area; – An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities; – The access roads to **PV Solar Energy Facility** and Powerline & substation **servitude areas** must be signposted after access has been negotiated and before the commencement of the activities; – All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition	DPM & Contractor	Signed agreements with landowners clear Mapped access roads Inspection of conditions of private roads Rehabilitation Method Statement to include temporary access roads	Pre-construction & construction phases	dEO & ECO	Monthly	Visible signage (photographic records) Proof of training Related entries by Public Complaints Register & Inspection of access

– All contractors must be made aware of all these access routes. – Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense; – Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads; – In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with ***section 4.9: photographic record***; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor; – Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands – Access roads must only be developed on pre-planned and approved roads. –		Training				

5.5 Fencing and Gate installation

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

Impact Management Actions	Implementation	Monitoring

	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Use existing gates provided to gain access to all parts of the area authorised for development, where possible; – Existing and new gates to be recorded and documented in accordance with section 4.9: *photographic record*; – All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner; – At points where the line crosses a fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner; – Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground; – Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate; – Original tension must be maintained in the fence wires; – All gates installed in electrified fencing must be re-electrified; – All demarcation fencing and barriers must be maintained in good working order for the duration of overhead transmission and distribution electricity infrastructure development activities; – Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where appropriate and would not cause harm to the sensitive flora; – Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the land owner.	DPM & Contractor	Signed agreements with landowners Mapped access roads and gates Inspection of access gates	Pre-construction & construction phases	dEO & ECO	Monthly	Inspection of access gates (photographic records) Related entries into Public Complaints Register

– All fencing must be developed of high quality material bearing the SABS mark; – The use of razor wire as fencing must be avoided; – Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times; – On completion of the development phase all temporary fences are to be removed; – The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.						

5.6 Water Supply Management

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

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

– All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis; – The Contractor must ensure the following: a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river; b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented. – Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training. d. The use of grey water is encouraged.	dEO/ ECO	Monitoring of water usage and abstraction volumes Inspection of water abstraction point Ensure DWS permits are acquired where abstraction exceed exempted threshold. Training Awareness	From registration of use with DWS and throughout the period during which water is abstracted	dEO & ECO	Daily (dEO) & Monthly (ECO)	Proof of registration (GA/ or WULA) from DWS Monitoring records of water use Visual inspections (photographic records) Training Records

5.7 Storm and waste water management

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

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

– Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager; – All spillage of oil onto concrete surface and the ground 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.	DPM & Contractor	Signed agreements with landowners Mapped access roads Inspection of conditions of private roads Rehabilitation Method Statement to include temporary access roads Training	Pre-construction & construction phases	dEO & ECO	Monthly	Visible signage (photographic records) Proof of training Public Complaints Register Monitoring & Inspection (photographic records) Approved method statement

5.8 Solid and hazardous waste management

Impact management outcome: Waste is appropriately stored, handled and safely disposed of at a recognised waste facility**.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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.	DPM & Contractor	Signed agreements with landowners Ensure appropriate labels for all temporary waste storage areas Method Statement to include the construction of temporary segregation Areas.	Pre-construction, Construction & Operational Phases	dEO & ECO	Weekly / Monthly	Visible labels for all segregation bins or facilities (photographic records) Safe Disposal Certificates. Records of approved waste removal companies used. Proof of Related training Inspection / Monitoring reports Approved method statement

5.9 Protection of watercourses and estuaries

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities; – In the event of a spill, prompt action must be taken to clear the polluted or affected areas; – Where possible, no development equipment must traverse any seasonal or permanent wetland. – 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;	dEO/ ECO	Inspections of watercourses Rehabilitation Method Statement to include watercourses within PV Solar Energy Facility and powerline corridors Training	Pre-construction & Construction & Operational Phases	dEO & ECO	Daily by dEO / Monthly by ECO	Visual inspections of watercourses within PV Solar Energy Facility and powerline corridors (photographic records) Approved method statement Proof of training

No altering of the bed, banks, course or characteristics of a watercourse b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must be implemented e.g. including ensuring that construction equipment is well maintained; c) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and d) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.						

5.10 Vegetation clearing

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

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

General: - Indigenous vegetation which does not interfere with the development must be left undisturbed; - Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species; - Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing; - Permits for removal must be obtained from the Department of Agriculture, Forestry and Fisheries prior to the cutting or clearing of the affected species, and they must be filed; - The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals; - Trees felled due to construction must be documented and form part of the Environmental Audit Report; - Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris; - 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;	dEO	Report capturing findings of site walk through (pre-construction survey) Method Statement for managing Species of Conservation Concern (SCC) Method Statement for managing alien invasive species Management programme for managing alien invasive species during the operational phase Applications for permits Identification of felled trees Daily register of herbicide usage Training and Awareness	Pre-construction, construction & operational phases	DEO & ECO	Daily (dEO) & Monthly (ECO)	Pre-construction survey report Permits on Records of felled trees Records of herbicide usage Visual inspections (photographic records), including relocated species Approved method statement Proof of training

– 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***. **Servitude:** – Vegetation that does not grow high enough to cause interference with overhead transmission and distribution infrastructures, or cause a fire hazard to any plantation, must not be cut or trimmed unless it is growing in the road access area, and then only at the discretion of the Project Manager; – Where clearing for access purposes is essential, the maximum width to be cleared within the servitude must be in accordance to distance as agreed between the land owner and the EA holder – Alien invasive vegetation must be removed according to a plan (in line with relevant municipal and provincial procedures, guidelines and recommendations) and disposed of at a recognised waste disposal facility; – Vegetation must be trimmed where it is likely to intrude on the minimum vegetation clearance distance (MVCD) or will intrude on this distance before the next scheduled clearance. MVCD is determined from SANS 10280; – Debris resulting from clearing and pruning must be disposed of at a recognised waste disposal facility, unless the landowners wish to retain the cut vegetation; – In the case of the development of new overhead transmission and distribution infrastructures, a one metre "trace-line" must be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along the "trace-line". Alternative methods of stringing which limit impact to the environment must always be considered.						

5.11 Protection of fauna

Impact management outcome: Minimise disturbance to fauna.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present; – The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme; – Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present; – Nesting sites on existing parallel lines must documented; – Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds; – Bird guards and diverters must be installed on the new line as per the recommendations of the specialist;	Contractor & dEO	Agreements with landowners Report capturing findings of site walk through (pre-construction survey) Method Statement for managing SCC Applications for permits Training	Pre-construction, construction and operational phases	dEO & ECO	Monthly	Pre-construction survey report Monthly Audits/ Monitoring reports Visual inspections (photographic records) Proof of training

– 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.						

5.12 Protection of heritage resources

Impact management outcome: Minimise impact to heritage resources.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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	Deo/ ECO	Inspections of sensitive heritage features General Monitoring	Pre-construction & Construction & Operational Phases	DEO & ECO	Monthly	Visual inspections Monitoring records (photographic records)

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.		Method Statement to fence the area with graves. No-Go procedure to be used where necessary.				Approved method statement Proof of training / awareness

5.13 Safety of the public

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.; – All unattended open excavations must be adequately fenced or demarcated; – Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding; – Ensure structures vulnerable to high winds are secured; – Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.	DPM & Contractor	Demarcate dangerous zones to avoid injury & harm Inspection and monitoring. Training and awareness	Pre-construction & construction phases	DEO & ECO	Monthly	Visible signage (photographic records) Proof of training Complaints Register

						Approved method statement

5.14 Sanitation

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Mobile chemical toilets are installed onsite if no other ablution facilities are available; – The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances; – Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body;	DEO / DPM	Use appropriate ablution facilities Method Statement for managing chemical toilets and disposal of waste Acquire relevant permits where required	Pre-construction, construction, and operational phases	DEO & ECO	DEO Daily / ECO Monthly	Inspection & Monitoring report (photographic records) Related entries into Public Complaints Register

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.						Training records

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;	Contractor & CEO	Awareness Posters Training & Awareness on effects of sexually transmitted	Pre-construction & construction phases	DEO & ECO	Monthly	Visual inspections of facilities and Awareness posters

– 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.		diseases, especially HIV AID				(photographic records)

5.16 Emergency procedures

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; – The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation;	Contractor & dEO	Emergency Response Action Plan Emergency contact list	Pre-construction, construction, and operational phases	DEO & ECO	Monthly	Approved Emergency Response Action Plan on record

– 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***).		EP Training				Emergency contact list displayed

5.17 Hazardous substances

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible **(BESS Facility and hazardous -substance storage facility).** – 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;	DPM & Contractor	Controlled Access to the storage facilities Approved Method Statement	Pre-construction & construction phases	DEO & ECO	Monthly	Visible signage (photographic records) Proof of training Related entries into Public

– All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers; – Bunded areas to be suitably lined with a SABS approved liner; – An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis; – All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS); – All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet; – Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available; – The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers; – The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall); – The floor of the bund must be sloped, draining to an oil separator; – Provision must be made for refueling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained;		Training and awareness Relevant Permits acquired – where required				Complaints Registers Inspection of access to these facilities (photographic records) Visible No smoking signages Approved method statement

– All empty externally dirty drums must be stored on a drip tray or within a bunded area; – No unauthorised access into the hazardous substances storage areas must be permitted; – No smoking must be allowed within the vicinity of the hazardous storage areas; – Adequate fire-fighting equipment must be made available at all hazardous storage areas; – Where refueling away from the dedicated refueling station is required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used; – An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times; – The responsible operator must have the required training to make use of the spill kit in emergency situations; – An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken; – In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to ***Section 5.7*** for procedures concerning ***storm and waste water management*** and ***5.8*** for ***solid and hazardous waste management.***						

5.18 Workshop, equipment maintenance and storage

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area; – During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts; – Leaking equipment must be repaired immediately or be removed from site to facilitate repair; – Workshop areas must be monitored for oil and fuel spills; – Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available; – The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed; – Water drainage from the workshop must be contained and managed in accordance ***Section 5.7: storm and waste water management***.	DPM & Contractor	Signed Method Statement to include establishment of a workshop area for possible maintenance of construction vehicles Training & awareness of staff more specially on how to clean chemical spillages	Pre-construction & Construction phases	dEO & ECO	Monthly	Monitoring and inspection reports Training records Public Complaints Register Inspection of site (photographic records) Approved method statement

5.19 Batching plants

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Concrete mixing must be carried out on an impermeable surface; – Batching plants areas must be fitted with a containment facility for the collection of cement laden water. – Dirty water from the batching plant must be contained to prevent soil and groundwater contamination – Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains; – A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted; – Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licenced disposal facility; – Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site; – Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to ***Section 5.20: Dust emissions***) – Any excess sand, stone and cement must be removed or reused from site on completion of construction period and disposed at a registered disposal facility; – Temporary fencing must be erected around batching plants in accordance with ***Section 5.5: Fencing and gate installation***.	DPM & Contractor	Rehabilitation and management Method Statement to include how hazardous substance like cement dust/ powder, diesel & petrol should be managed in terms of storage and spillage incidents. Training & Awareness	Construction & Operational phases	DEO & ECO	Monthly	Visible signage (photographic records) Proof of training Public Complaints Register Inspection of affected sites. Approved method statement

5.20 Dust emissions

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO; – Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re-vegetated or stabilised as soon as is practically possible; – Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present; – During high wind conditions, the ECO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level; – Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind;	Contractor & dEO	Dust monitoring Dust suppression schedule Signage displaying speed limits Training	Pre-construction & construction phases	dEO & ECO	Monthly	Updated dust suppression schedule Dust monitoring results Related entries into Public Complaints Register Visual inspections (photographic records

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

5.21 Blasting

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Any blasting activity must be conducted by a suitably licensed blasting contractor; and – Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	Contractor / dEO	Compliance with blasting-related legislation and standards and	Prior to blasting up to safe completion of blasting	dEO & ECO	Monthly	Approved method statement Proof of notification

		the Noise regulations Method statement for operating the relevant equipment's				Public complain register

5.22 Noise

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only; – All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained; – Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers;	Contractor & dEO	Code of Conduct Noise monitoring Training and awareness	Construction and Operational phases	DEO & ECO	Monthly	Monitoring results Public Complaints Register Visible signage

– 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.						Proof of training

5.23 Fire prevention

Impact management outcome: Prevention of uncontrollable fires.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Designate smoking areas where the fire hazard could be regarded as insignificant; – Firefighting equipment must be available on all vehicles located on site; – The local Fire Protection Agency (FPA) must be informed of construction activities; – Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site; – Two way swop of contact details between ECO and FPA.	Contractor & dEO	Notification of FPA Emergency contact list Training	Pre-construction & construction phases	DEO & ECO	Monthly	Proof of notification of FPA Emergency contact list displayed Related entries into Public Complaints Register Proof of training

5.24 Stockpiling and stockpile areas

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses, watercourses and water bodies; – All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods; – Topsoil stockpiles must not exceed 2 m in height; – During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.); – Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.	Contractor & dEO	Inspection of stockpile areas Training	Construction phase	DEO & ECO	Monthly	Updated inspection register Visual inspections (photographic records)

5.25 Finalising tower positions

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No vegetation clearing must occur during survey and pegging operations; – No new access roads must be developed to facilitate access for survey and pegging purposes; – Project manager, botanical specialist and contractor to agree on PV Solar Facility Arrays Position and powerline tower positions based on survey within assessed and approved areas; – The surveyor is to demarcate (peg) access roads/tracks in consultation with ECO. No deviations will be allowed without the prior written consent from the ECO.	Contractor & DEO	Professionals involved should adhere to available standards of operation to minise environmental impacts. Training and awareness	Pre-Construction phase	dEO & ECO	As and when survey is conducted	Visual inspections (photographic records

5.26 Excavation and Installation of foundations

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a recognised disposal site, if not used for backfilling purposes; – Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes; – Management of equipment for excavation purposes must be undertaken in accordance with ***Section 5.18: Workshop equipment maintenance and storage***; and – Hazardous substances spills from equipment must be managed in accordance with ***Section 5.17: Hazardous substances***. – Batching of cement to be undertaken in accordance with **Section *5.19 : Batching plants***; – Residual cement must be disposed of in accordance with **Section *5.8: Solid and hazardous waste management***.	Contractor & DEO	Method statements for: Managing spoil material Managing hazardous substances Rehabilitation	Construction phase	dEO & ECO	Monthly by ECO / Daily by dEO	Approved method statements Visual inspections (photographic records)

5.27 Assembly and erecting towers

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Prior to erection of the PV Solar Energy Facility Components, and Assembled towers, tower sections must be stored on elevated surface (suggest wooden blocks) to minimise damage to the underlying vegetation; – In sensitive areas, tower assembly must take place off-site or away from sensitive positions; – The crane used for tower assembly must be operated in a manner which minimises impact to the environment; – The number of crane trips to each site must be minimised; – Wheeled cranes must be utilised in preference to tracked cranes; – Consideration must be given to erecting towers by helicopter or by hand where it is warranted to limit the extent of environmental impact; – Access to tower positions to be undertaken in accordance with access requirements in specified in Section 8.4: Access Roads; – Vegetation clearance to be undertaken in accordance with general vegetation clearance requirements specified in Section 8.10: Vegetation clearing; – No levelling at tower sites must be permitted unless approved by the Development Project Manager or Developer Site Supervisor; – Topsoil must be removed separately from subsoil material and stored for later use during rehabilitation of such tower sites; – Topsoil must be stored in heaps not higher than 1m to prevent destruction of the seed bank within the topsoil;	Contractor & dEO	Method statements for: Tower assembly, Solar Arrays assembly and Erection Managing of vegetation	Construction phase	dEO & ECO	Monthly (during relevant construction activities)	Approved method statements Vegetation Management Plan Implementation Report Inspection Reports

– Excavated slopes must be no greater that 1:3, but where this is unavoidable, appropriate measures must be undertaken to stabilise the slopes; – Fly rock from blasting activity must be minimised and any pieces greater than 150 mm falling beyond the Working Area, must be collected and removed; – Only existing disturbed areas are utilised as spoil areas; – Drainage is provided to control groundwater exit gradient with the spill areas such that migration of fines is kept to a minimum; – Surface water runoff is appropriately channeled through or around spoil areas; – During backfilling operations, care must be taken not to dump the topsoil at the bottom of the foundation and then put spoil on top of that; – The surface of the spoil is appropriately rehabilitated in accordance with the requirements specified in Section 5.29: Landscaping and rehabilitation; – The retained topsoil must be spread evenly over areas to be rehabilitated and suitably compacted to effect re-vegetation of such areas to prevent erosion as soon as construction activities on the site is complete. Spreading of topsoil must not be undertaken at the beginning of the dry season.						

5.28 Stringing

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible, previously disturbed areas must be used for the siting of winch and tensioner stations. In all other instances, the siting of the winch and tensioner must avoid Access restricted areas and other sensitive areas; – The winch and tensioner station must be equipped with drip trays in order to contain any fuel, hydraulic fuel or oil spills and leaks; – Refueling of the winch and tensioner stations must be undertaken in accordance with Section 5.17: Hazardous substances; – In the case of the development of overhead transmission and distribution infrastructure, a one metre "trace-line" may be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along "trace-lines". Vegetation clearing must be undertaken by hand, using chainsaws and hand held implements, with vegetation being cut off at ground level. No tracked or wheeled mechanised equipment must be used; – Alternative methods of stringing which limit impact to the environment must always be considered e.g. by hand or by using a helicopter;	Contractor & dEO	Method statements for: Managing hazardous substances Managing hazardous waste Dust monitoring Equipment maintenance programme Training & Awareness	Construction phase	DEO & ECO	Monthly (during relevant construction activities)	Approved method statements Dust monitoring results Disposal records Visual inspections (photographic records) Proof of training

– Where the stringing operation crosses a public or private road or railway line, the necessary scaffolding/ protection measures must be installed to facilitate access. If, for any reason, such access has to be closed for any period(s) during development, the persons affected must be given reasonable notice, in writing; – No services (electrical distribution lines, telephone lines, roads, railways lines, pipelines fences etc.) must be damaged because of stringing operations. Where disruption to services is unavoidable, persons affected must be given reasonable notice, in writing; – Where stringing operations cross cultivated land, damage to crops is restricted to the minimum required to conduct stringing operations, and reasonable notice (10 work days minimum), in writing, must be provided to the landowner; – Necessary scaffolding protection measures must be installed to prevent damage to the structures supporting certain high value agricultural areas such as vineyards, orchards, nurseries.						

5.29 Socio-economic

Impact management outcome: Socio-economic development is enhanced.

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

	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Develop and implement communication strategies to facilitate public participation; – Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process; – Sustain continuous communication and liaison with neighboring owners and residents – Create work and training opportunities for local stakeholders; and – Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to local farmers.	Contractor & dEO	Public complain register Communication Strategy and Share contact details of ECO with stakeholders Training and awareness	Pre-construction, construction and operational phases	dEO & ECO	Monthly	Proof of communication Related project matters Updated Public Complaints Register Awareness records

5.30 Temporary closure of site

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management	Contractor & dEO	Method statement for temporary closure of site	Construction phase	dEO & ECO	Before and during site closure	Approved method statement

actions included in ***sections 5.17: management of hazardous substances*** and ***5.18 workshop, equipment maintenance and storage***; – Hazardous storage areas must be well ventilated; – Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service; – Emergency and contact details displayed must be displayed; – 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.		Training & Awareness				Disposal records Visual inspections (photographic records) Proof of training / awareness

5.31 Landscaping and rehabilitation

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed to a registered waste site and certificates of disposal provided; – All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983 – All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983; – Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition; – Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners; – Rehabilitation of tower sites and access roads outside of farmland; – Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition; – Stockpiled topsoil must be used for rehabilitation (refer to Section ***5.24: Stockpiling and stockpiled areas***); – Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion; – Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed;	Contractor & dEO	Method statement for dismantling, storage and disposal of old equipment Government Permits Training & Awareness	Construction phase	dEO & ECO	Before and during dismantling, storage and disposal of old equipment	Approved method statement Disposal records Visual inspections (photographic records) Proof of training

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

6 ACCESS TO THE GENERIC EMPr

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

PART B: SECTION 2

7 SITE SPECIFIC INFORMATION AND DECLARATION

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

7.1.1 **Details of the applicant**: Contrarians Capital (Pty) Ltd

Name of applicant: Mr Nkosilathi Ncube

Tel / Cell No: 083 352 6057

Fax No: N/a

Postal Address: 5 Courtday Crescent, Randjesfontein, Midrand, Johannesburg

Physical Address:

7.1.2 Details and expertise of the EAP:

Name of applicant: Cate Rapudi

Tel No: 082 4562584

Fax No: N/a

E-mail address: cate.rapudi@crrenewables.com

Expertise of the EAP (Curriculum Vitae included):

ENVIRONMENTAL ASSESSMENT PRACTITIONER

Name:	Mmatsie Cate Rapudi EAP & Chief Executive Officer – CRRENEWABLES (Pty) Ltd
Qualifications	BSc (Hons) in Environmental Management and Analysis – University of Pretoria Bachelor of Environmental Sciences Degree – University of Venda Management Development Programme (MDP), University of Pretoria Middle Management Talent Programme, Henley Business School
Professional Registration:	**SACNASP** (200002/04) **EAPASA** (2021/3313)
Work History	March 2021-todate: CEO & Founder of CRRENEWABLES Pty Ltd

	January 2005- Feb 2021: Eskom Distribution Environmental Manager – Limpopo Province August 2003- Jan 2005: Eskom Distribution Environmental Practitioner Feb 2001- 2003: Department of Agriculture, Conservation & Environment- Senior Environmental Officer Feb 1999- 2001: Department of Agriculture, Conservation & Environment Environmental Officer Dec 1997- February 1998: Phalaborwa Mining Company as a EO trainee
Experience in Years	**23 Years**
Skills and Experience	**EIA / WULAS (ESKOM)** o Conducted Environmental Impacts study assessments o Developed environmental management plans (EMP) for existing powerline servitudes and new servitudes. o Conducted Site Inspections, Evaluations and Monitoring at construction sites to ensure compliance to EIA Authorizations issued in terms of NEMA Regulations, EMP's, National Forest Act SAHRA, NEMBA, NWA, o Applied for water uses license permits with DWS o Conducted notifications in terms SAHRA legislation o Performed environmental Incident's investigations. o Training and Awareness on Legal Requirements / EA Conditions / Authorizations **Completed EIA / BA Projects are, but not limited to the following:** o Gull 1 X 20MVA 88_ 11 Kv substation o Germiston East-New 20 MVA additional Transformer o Clayglass 88/11 KV substation replace 3 x 10 MVA transformer upgrade to 3 x 20 MVA. o Houtkoppen Albatros 11KV Underground electrical cable o The Durban West Decommission Substation o Glen Install 20 MVA transformer o Morningside 4th 10 MVA 44_11 KV transformer o Fourways Hilda 22KV Underground electrical cable o Gull 1 X 20MVA 88_ 11 Kv substation o Germiston East-New 20 MVA additional Transformer o Clayglass 88/11 KV substation replace 3 x 10 MVA transformer upgrade to 3 x 20 MVA. o Astra to Sentra new 88 KV line o Sentra to Jetta new DC 88 KV line o The Durban West Decommission Substation o Glen Install 20 MVA transformer o Morningside 4th 10 MVA 44_11 KV transformer

- Magaliesburg substation refurbishment of Hekpoort 11 KV feeder
- Klevebank Substation upgrade
- Zonkizizwe New 20 MVA 88/22 KV transformer
- Bapsfontein Rural Substation 2nd 88/11 kv 10 MVA
- Vanderbijl 88kV Substation - Install 3rd 40MVA at transformer 5B &6
- Vorna Valley Install 40MVA 88_11kV TRFR
- Fourways Install 2X40MVA 88_22kV TRFRs

EIA'S (GAUTENG DEPARTMENT OF AGRICULTURE, CONSERVATION AND ENVIRONMENT)

- Gull 1 X 20MVA 88_ 11 Kv substation
- Germiston East-New 20 MVA additional Transformer
- Clayglass 88/11 KV substation replace 3 x 10 MVA transformer upgrade to 3 x 20 MVA.
- Houtkoppen Albatros 11KV Underground electrical cable
- The Durban West Decommission Substation
- Glen Install 20 MVA transformer
- Morningside 4th 10 MVA 44_11 KV transformer
- Fourways Hilda 22KV Underground electrical cable
- Gull 1 X 20MVA 88_ 11 Kv substation
- Germiston East-New 20 MVA additional Transformer
- Clayglass 88/11 KV substation replace 3 x 10 MVA transformer upgrade to 3 x 20 MVA.
- Astra to Sentra new 88 KV line
- Sentra to Jetta new DC 88 KV line
- The Durban West Decommission Substation
- Glen Install 20 MVA transformer
- Morningside 4th 10 MVA 44_11 KV transformer
- Magaliesburg substation refurbishment of Hekpoort 11 KV

ENVIRONMENTAL MANAGEMENT SYSTEM (ESKOM)

- Established, Implemented and Maintained an Environmental Management System (EMS) in terms of ISO 14001: 2015 in Eskom Distribution LOU
- Facilitated, co-ordinated, and integrated EMS at Regional level
- Provided professional support, in order to minimise financial, legal and customer service environmental related risks to the Region
- Ensured that staff (both management & employees), customers and suppliers / contractors are trained and, also made aware of environmental issues and their legal obligations within the Region
- Conducted Environmental Risk Assessments
- Conducted OU Environmental Legal Compliance audits
- Conducted EMS Internal Audits (1st & 2nd Tier Audits)
- Conducted Environmental Training for Eskom Contractors, Consultants and Employees including top management.
- Member of the Governance Committee called SHEQ, responsible for addressing all SHEQ related issues affecting the

	Operating Unit. All SHEQ incidents are presented in this committee for strategic inputs, and preventative measures. o Established environmental tender specifications o Conducted SHEQ technical evaluation for new contractors and consultants prior to listing them as vendors. o Member of the SHEQ STEECO, that is responsible for evaluating and monitoring the establishment, implementation and sustain the ISO 14001/ ISO 9001 and OSHAS 18001 of the operating unit, to ensure ISO Certification is acquired and maintained.

7.1.3 Project name: The Proposed Heuningspruit 50MW PV Solar Facility and Storage.

7.1.4 Description of the project:

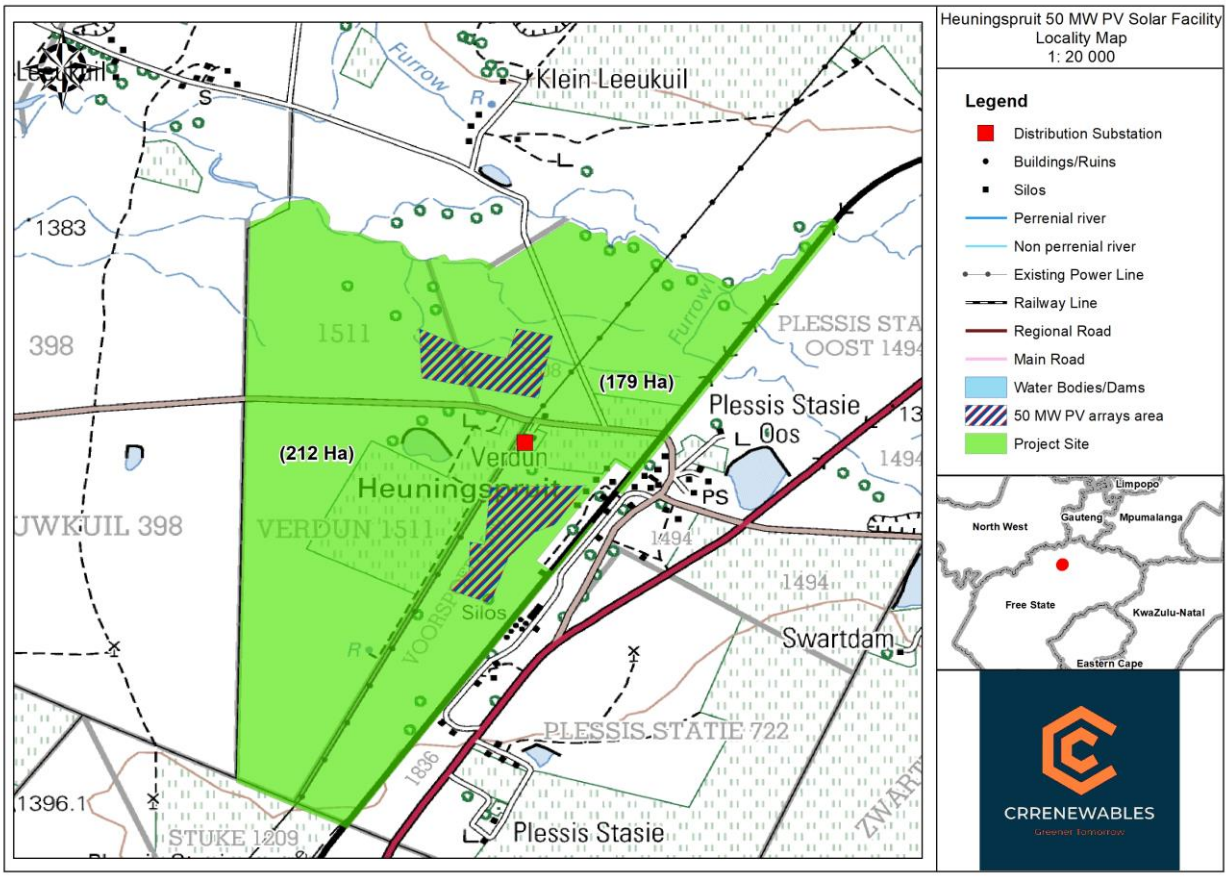
Contrarians Capital (Pty) Ltd is proposing the establishment of a commercial photovoltaic (PV) solar energy facility with a capacity of up to 50 MW to be established on the farm Voorspoed 1508 and Verdun 1511 which are located 35km south-west of Koppies in the Free State Province. The Heuningspruit PV solar energy facility will have a development footprint of 150 hectares within which the following typical infrastructure will be established:

- Arrays of photovoltaic (PV) panels with a capacity of up to 50MW.
- Mounting structures to be either rammed steel piles or piles with pre-manufactured
- Concrete footing to support the PV panels.
- Cabling between the project components, to lie underground.
- Inverters/Transformer enclosures.
- An on-site 88kV or lower voltage kV switching station.
- An overhead power line of approximately 250m in length to tie into the existing power line (Heuningspruit Rural-Syferfontien Traction 88kV Eskom power line) on site.
- An application to Eskom has been made to connect to Eskom's existing Heuningspruit Rural Substation which is located adjacent (north-western boundary) of the development site.
- Eskom will confirm the voltage of connection power line and connection point.
- Eskom may request an adjustment or possible expansion or inclusion of additional transformers or bays or switching gear associated with the existing substation and 88kva overhead transmission line.
- Internal access roads (4 to 5 m wide)
- Fencing.
- The office area (20m x 30m)
- Workshop area (50 m x 50 m) for maintenance, storage, offices and small modular
- Water filtration or di-ionisation unit (approx. 25 X 25m), should the need be more an additional 5m x 5m can be added.
- Parking
- Water storage tanks (100 000 L), Approximately 20 X 5000L tanks.
- Laydown area
- BESS

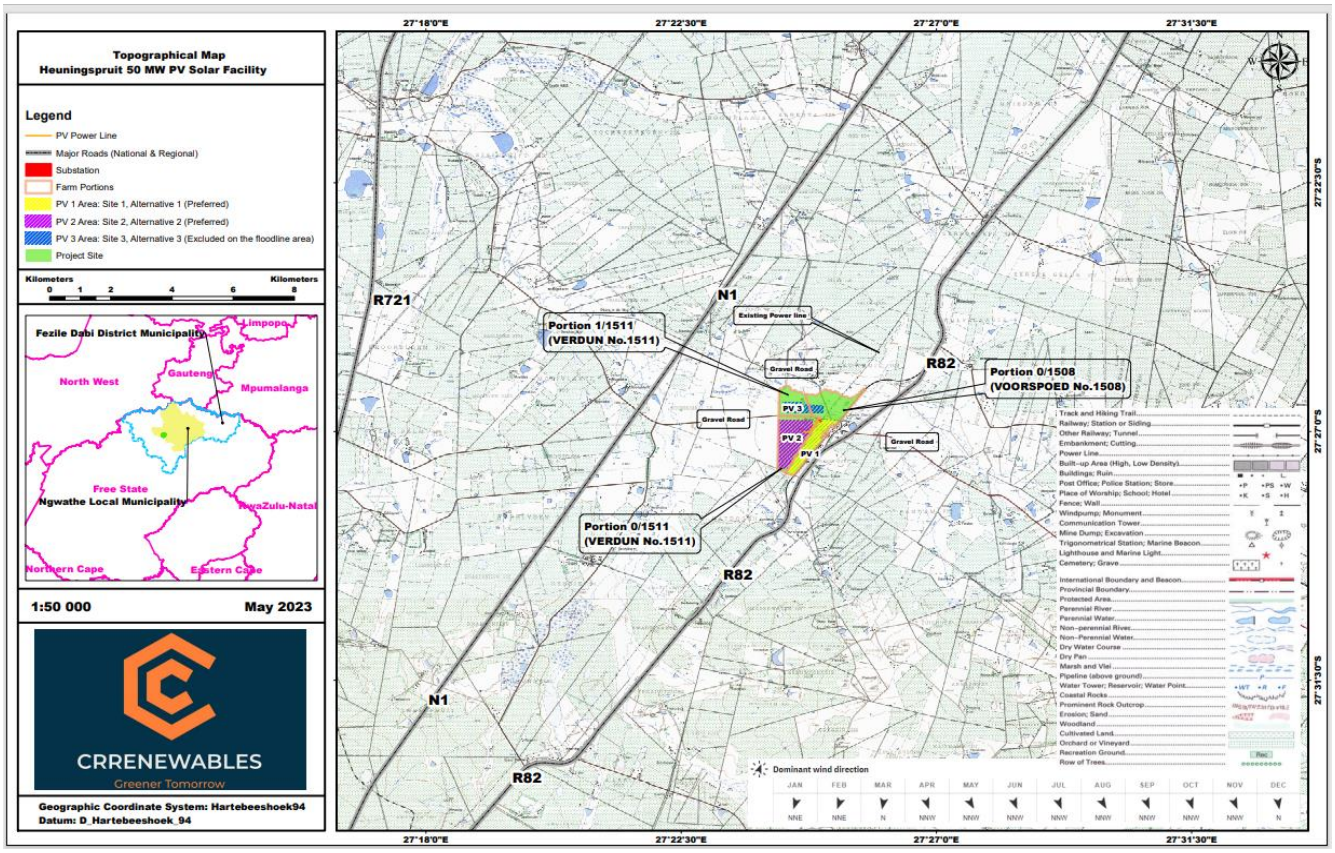
7.1.5 Project location

The proposed Heuningspruit 50 Megawatt PV Solar Energy Facility and storage will be located on the farm Voorspoed 1508. The earmarked site is located approximately 35 km south west of Koppies, within Ngwathe Local Municipality , in the Free State Province.

Project Locality Map Draft: Showing the proposed PV Solar Energy Facility



Project Locality Map Final: Showing the proposed PV Solar Energy Facility with Alternatives (PV1,2 & 3)



Site Alternatives

A. PV Solar Facility Alternatives

Site 1, Alternative 1 (Preferred)		Lat (DDMMSS)	Long (DDMMSS)
Description: Farm Voorspoed 1508 **PV 1**	**P3.1**	27°26'46,36" S	27°25'0,09" E
	P3.2	27°26'48,11" S	27°25'16,87" E
	P3.3	27°26'52,88" S	27°25'12,87" E
	P3.4	27°26'51,35" S	27°25'10,56" E
	P3.5	27°27'6,95" S	27°24'57,40" E
	P3.6	27°27'8,54" S	27°25'1,30" E
	P3.7	27°27'47,59" S	27°24'28,76" E
	P3.8	27°27'44,78" S	27°24'23,03" E
	P3.9	27°26'49,38" S	27°24'55,98" E
	P3.10	27°26'50,47" S	27°24'58,36" E

Site 2, Alternative 2 (Preferred)		Lat (DDMMSS)	Long (DDMMSS)
Description: Farm Verdun 1511 Ptn 2 **PV 2**	**P4.1**	27°26'47,59" S	27°24'29,98"
	P4.2	27°26'59,35" S	27°24'47,33"
	P4.3	27°26'40,17" S	27°24'23,22"
	P4.4	27°26'40,17" S	27°25'12,93"
	P4.5	27°26'47,59" S	27°25'12,93"
	P5.1	27°26'44,19" S	27°25'24,16"
	P5.2	27°26'40,61" S	27°25'12,62"
	P5.3	27°26'43,57" S	27°25'12,83"
	P5.4	27°26'44,00" S	27°25'49,78"
	P5.5	27°26'45,81" S	27°25'56,67"

Site 3, Alternative 3 (Excluded-on flood-line area)		Lat (DDMMSS)	Long (DDMMSS)
Description: Farm Verdun 1511 Ptn 1 **PV 3**	**A**	27°26'27,8905" S	27°24'17,6814" E
	B	27°26'28,4842" S	27°24'39,5190" E
	C	27°26'31,2450" S	27°24'39,4556" E
	D	27°26'31,8379" S	27°25'1,2932" E
	E	27°26'40,4455" S	27°25'1,0963" E
	F	27°26'39,2590" S	27°24'17,4200" E

B. POWERLINE ALTERNATIVES

250 M 88/11KV

Starting point of the activity	**Latitude (S)**	27° 27' 0, 50"	**Longitude (E)**	27°24'39, 54"
Middle point	**Latitude (S)**	27° 27' 0, 67"	**Longitude (E)**	27° 24' 45, 85"
	Latitude (S)	27° 26' 48, 00"	**Longitude (E)**	27° 24' 53, 61"
Ending Point	**Latitude (S)**	27°26'49, 73"	**Longitude (E)**	27° 24'57, 18"

7.1.6 Preliminary technical specification of the PV Solar Facility and Storage, Overhead Powerline and Substation

a. PV Solar Facility Technical Information

	Components	Description / Dimensions
1.	Height of PV panels	Estimated at ± 2.4 m High X 1.35m Wide
2.	Area of PV Array	± 125 -150 ha (Divided into two PV areas)
3.	Number of Solar Panels	To be confirmed by PV engineer
4.	Types of Solar Panels to used	Monocrystalline / Polycrystalline depending on the budget allocated
5	Number of batteries to be used	To be confirmed by the PV Engineer
6.	Number of inverters required	Approximately 20 Inverters of a suitable capacity
7.	Inverter Footprint / Transformer stations Footprint / Substations	• Inverter stations (10 inverter stations) = 0.1 x 20 = ± 1 ha • Control room = 500 m2 Approximately • Facility (step-up) substation = 1 ha Approximately
8.	On-site Substation Capacity	50MW, 88 kV/22 kV
9.	Area occupied by both permanent and construction laydown areas	Less than 1 ha approximately
10.	Area to be occupied by buildings	• Area occupied by Control room = 500 m2 • Area occupied by Battery Energy Storage System (BESS) = Up to 0,2 ha • Office / Workshop area: 600 m2 • Water filtration or di-ionisation unit :100 m2 • Laydown Area: 400 m2 • Capacity of Water Tanks: 25 000 litres (5000 l x 5 tanks)
11.	Length of internal roads	Estimated @ 4-8 km
12.	Width of internal roads	4m to 7m wide and will be gravel.

13.	Proximity to grid connection	Length of proposed 88 kV power line between on-site substation and grid connection point is ± 250m-1km and 1-2km for Route Option A and Option B, respectively.
14	Height of fencing	+/- 2,4 m high
15	Type of fencing	Type of fence to be used may vary around the site, maybe a mixture of welded mesh and palisade fence.
16	Amount of water required for construction activities	2 million litres approximately
17	Amount of water required for Operational/ Maintenance purposes	500 000 L (500 m3)

b. Powerline Technical Information

	Alternative 1	**Alternative 2**	
Route Length	250m	250m	
Tower parameters	Unknown (is still pre-liminary phase)	Unknown	

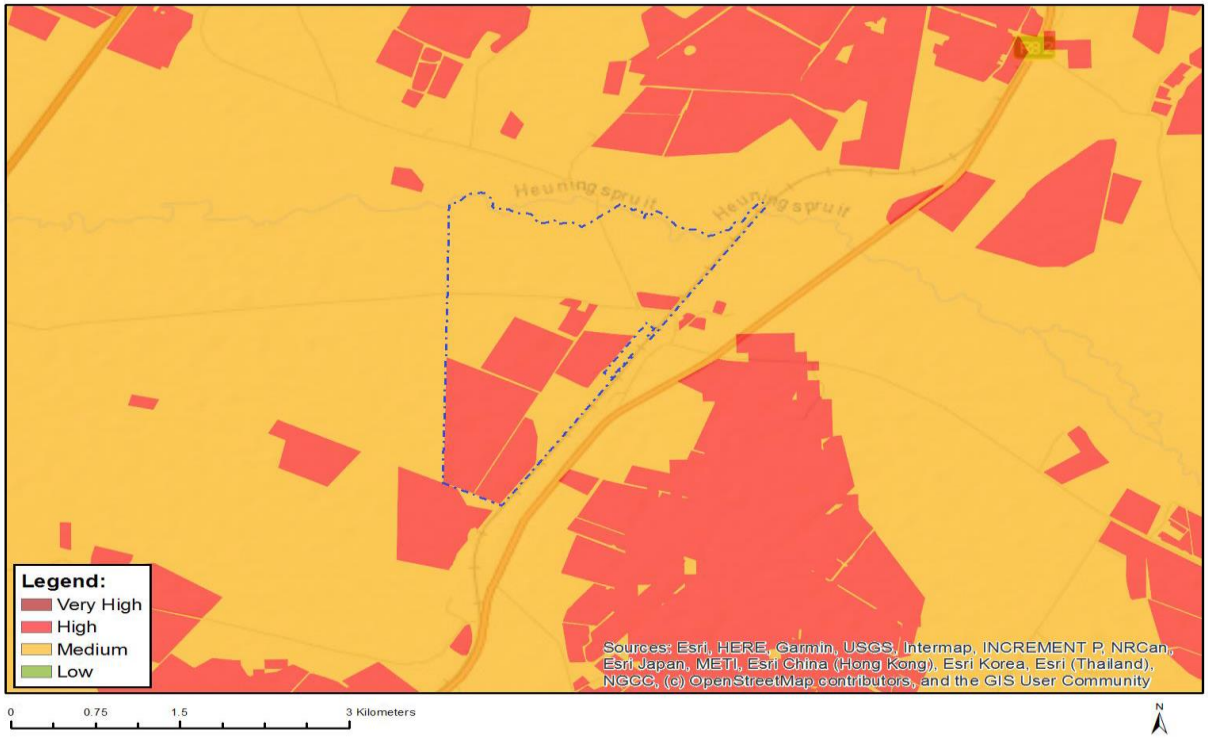
- Number and types of towers: **Unknown at this stage**
- Tower spacing (mean and maximum): **Unknown at this stage**
- Tower height (lowest, mean and height): **Unknown at this stage**
- Conductor attachment height (mean): **Unknown at this stage**
- Minimum ground clearance: **Unknown at this stage**

7.2 Sub-Section 2: Development Footprint site Maps:

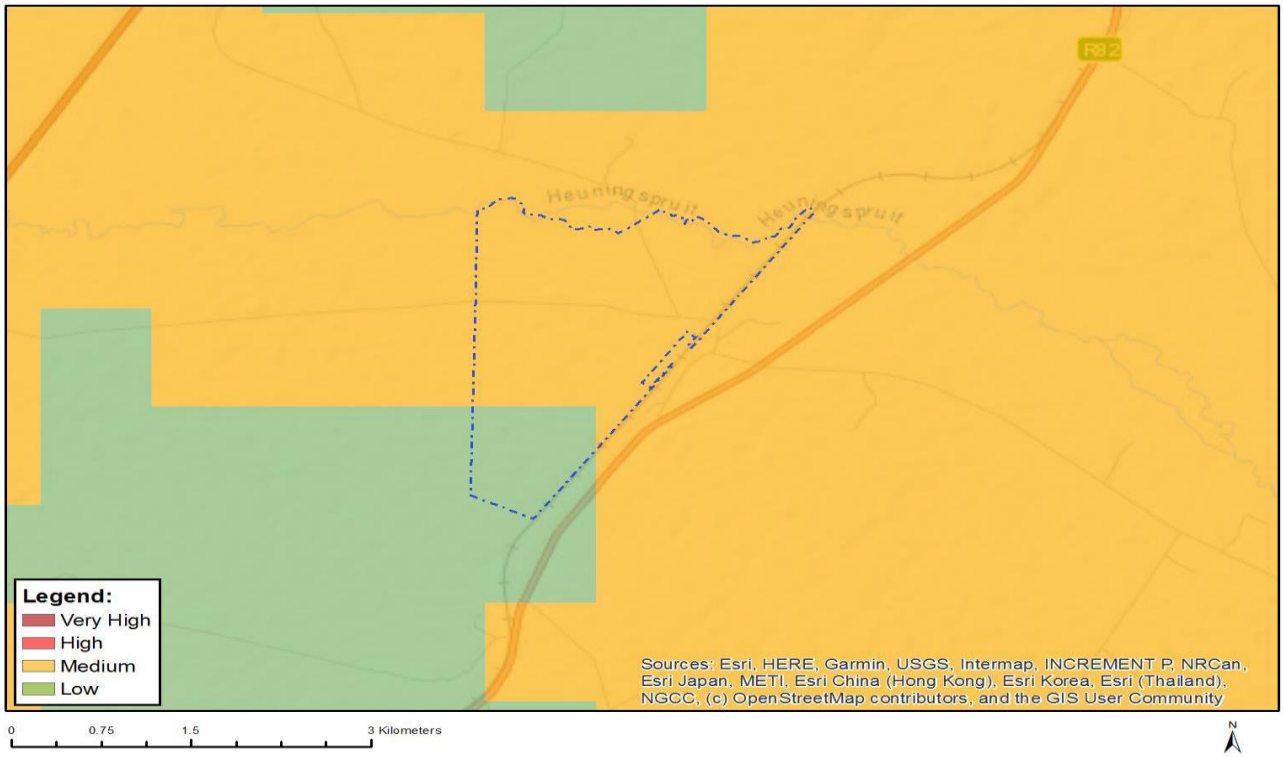
Proposed Development Area Environmental Sensitivity

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme		X		
Animal Species Theme			X	
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme		X		
Civil Aviation Theme				X
Defence Theme				X
Palaeontology Theme		X		
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

7.2.1 MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

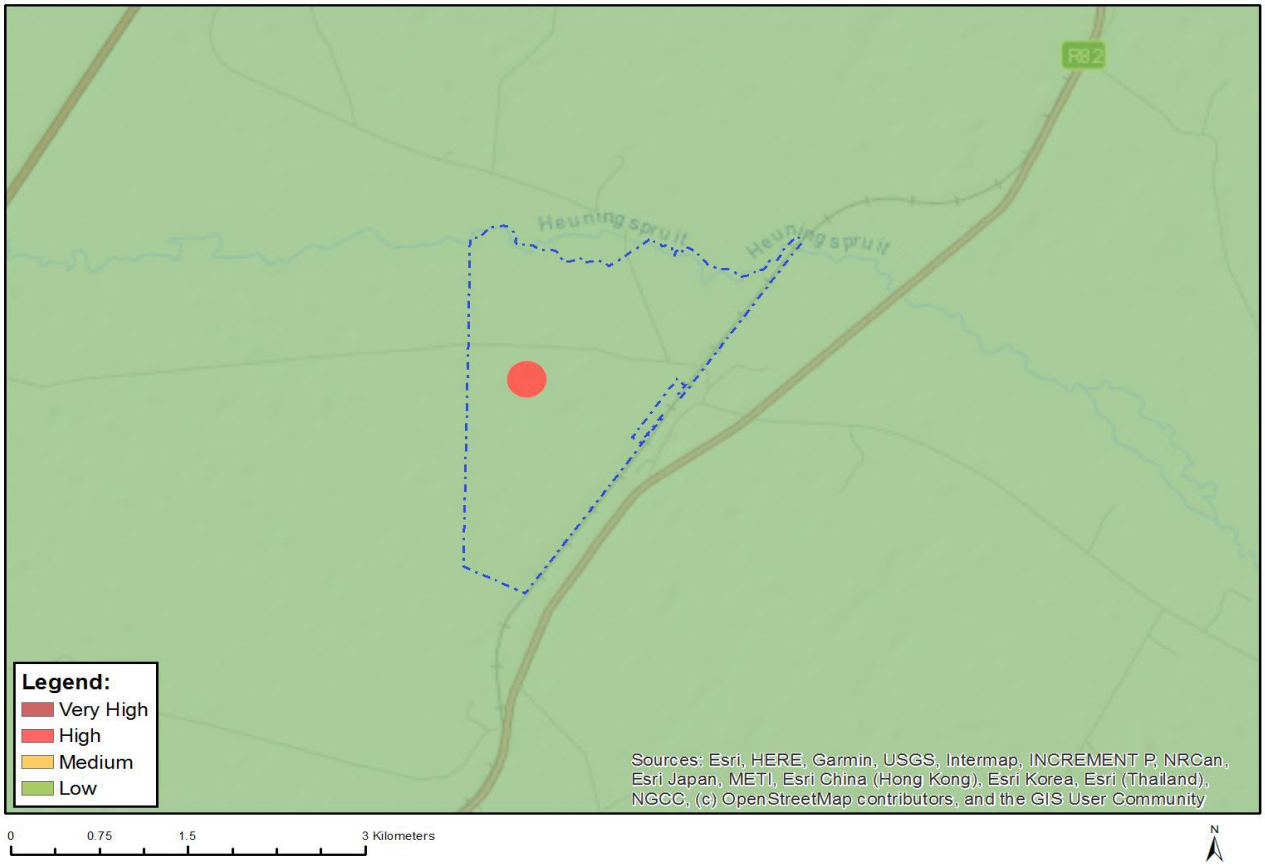


7.2.2 MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY

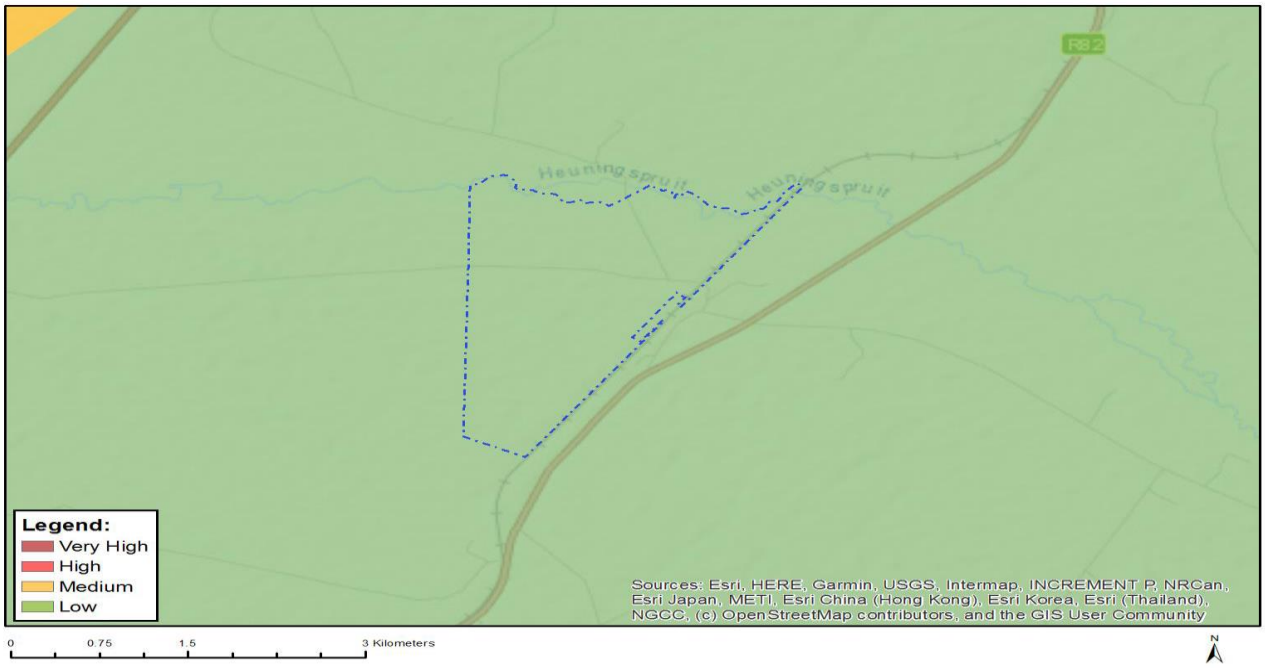


7.2.3 MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

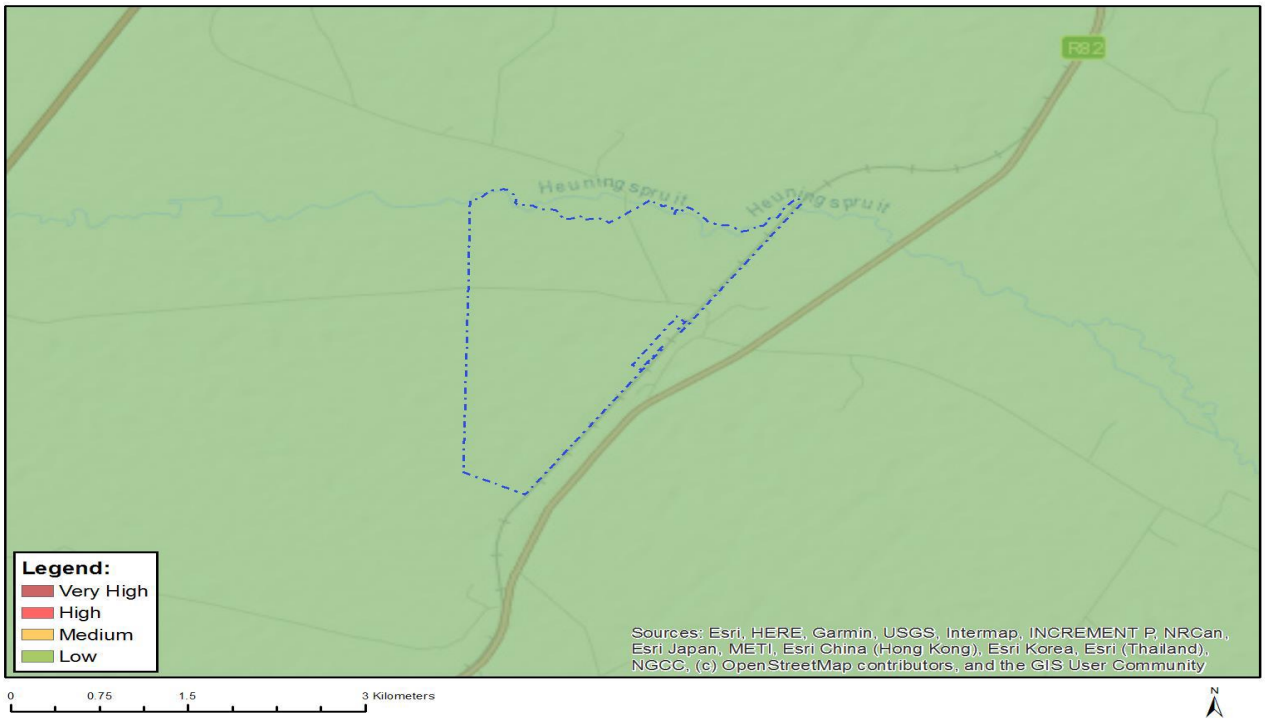
7.3.4 MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



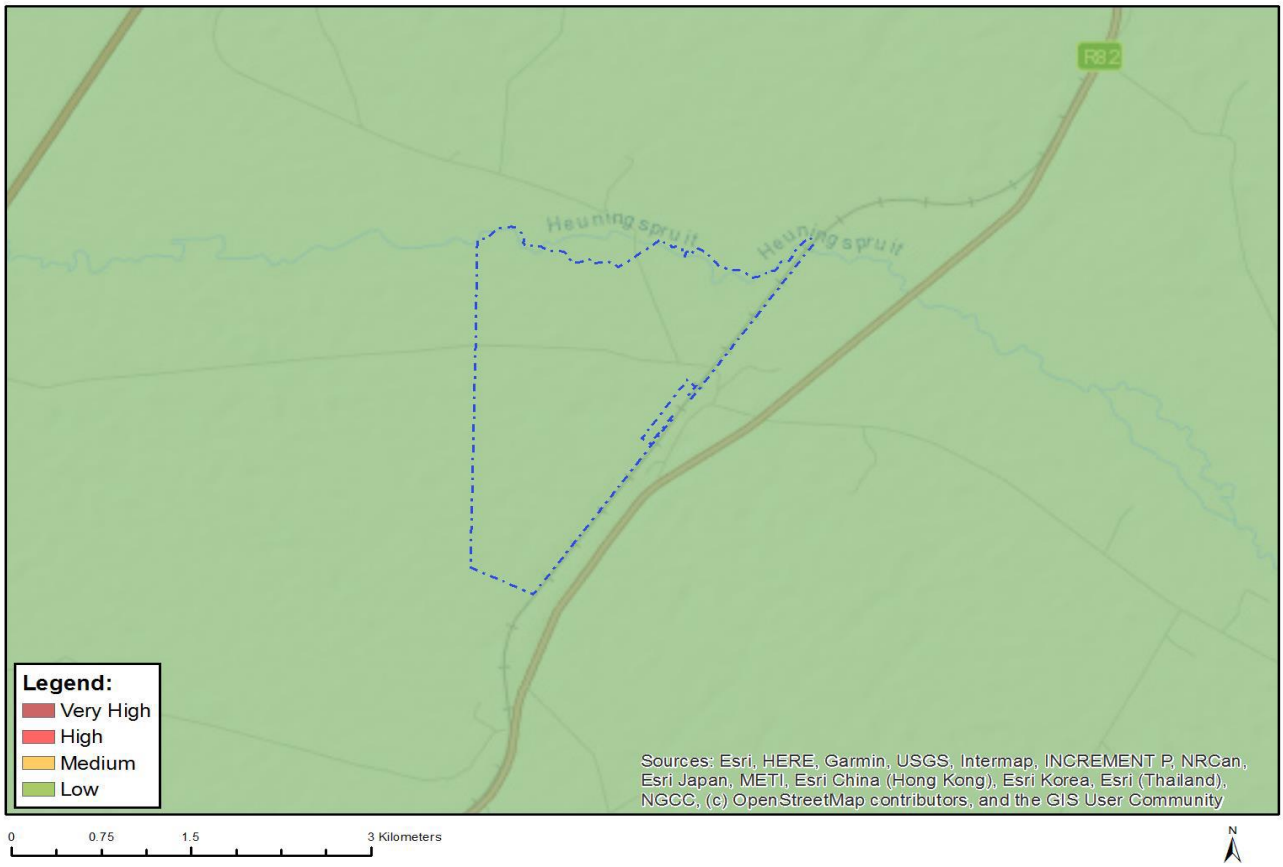
7.2.5 MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY



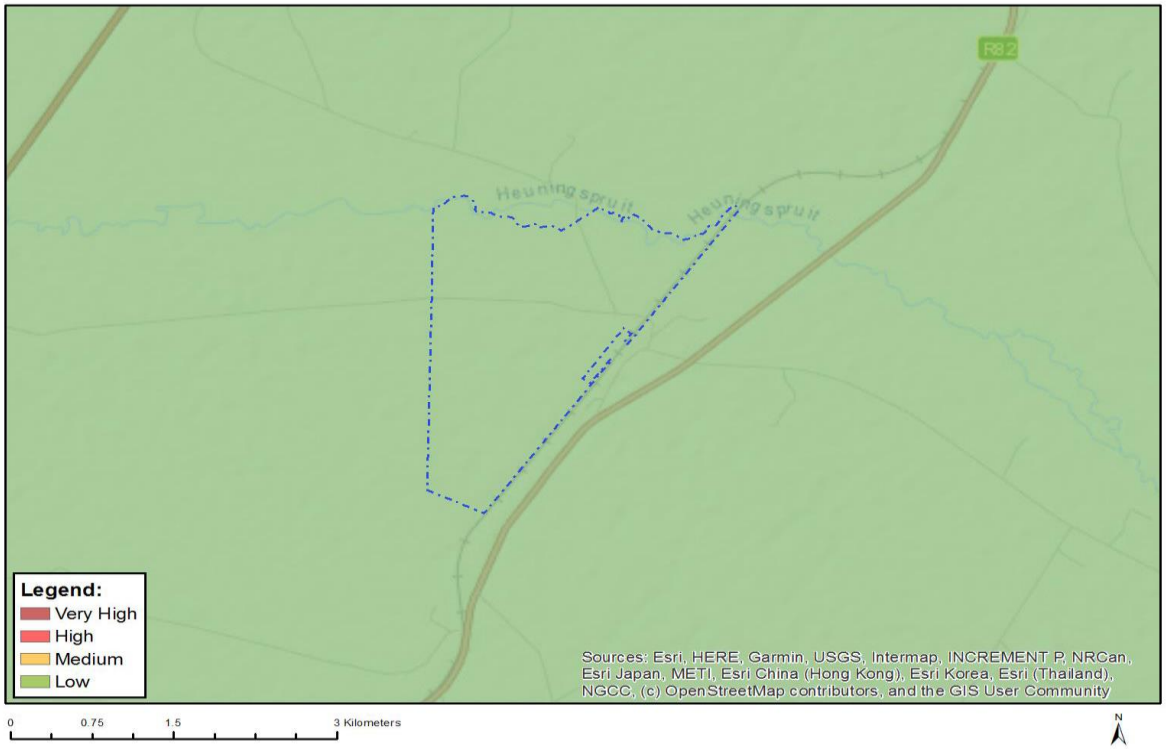
7.2.6 MAP OF RELATIVE DEFENCE THEME SENSITIVITY



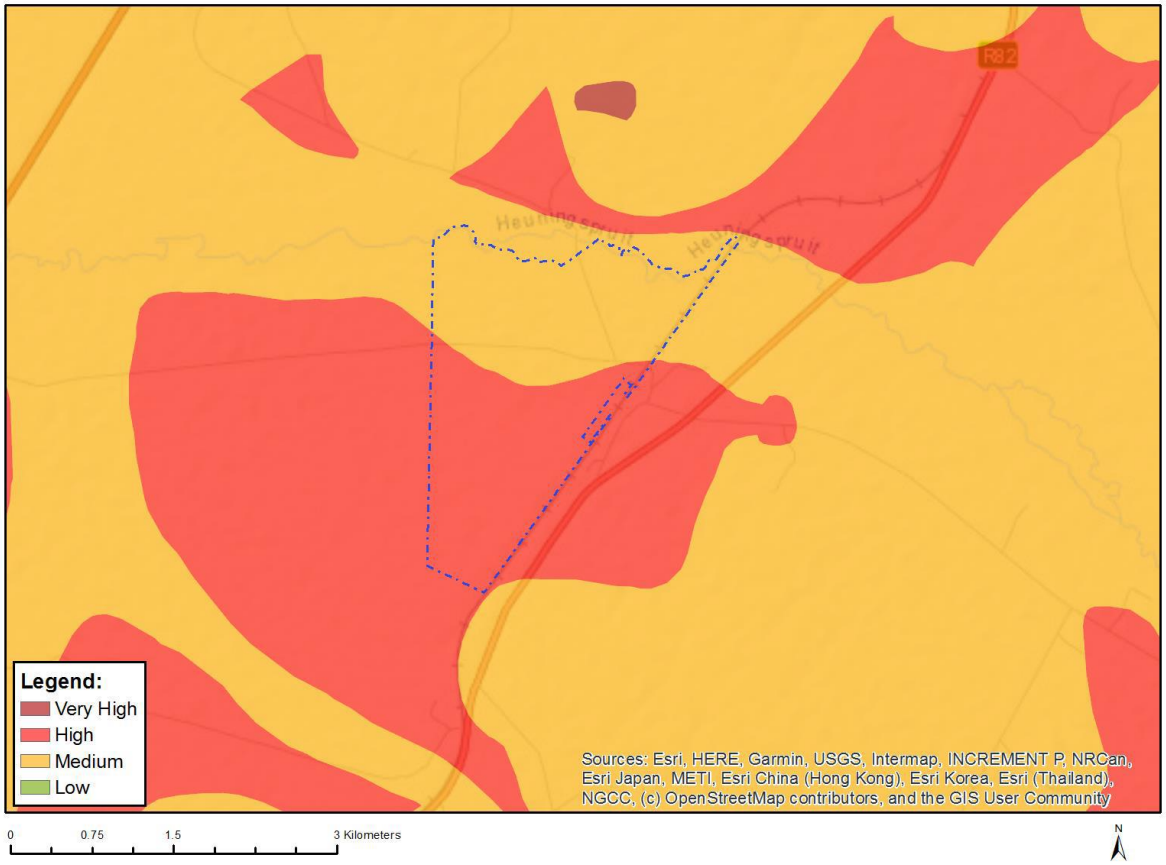
7.2.7 MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



7.2.8 MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



7.2.9 MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY



7.3 Sub-section 3: Declaration

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

Signature Proponent/applicant/ holder of EA Date:

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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 f or the development and the EMPr becomes legally binding to the new EA holder.

PART C

8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

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

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

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

8.1 Terrestrial Biodiversity (Fauna, Flora and Avifauna)

Impact management outcome: Minimize Impacts to Terrestrial Biodiversity and Avifauna						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
M1. The proponent must be committed to a conservation approach of practice and the actual footprint of disturbance must be kept to a minimum. **M2.** As much of the natural environment must be conserved, there should be minimal vegetation clearing. **M3.** Relocation of important species, identification and demarcation of specimens and sub habitats not to be disturbed will have to be done beforehand by a specialist. **M4.** Important species (flora) that will be threatened by the development must be relocated to safer habitats by suitable specialists.	Contractor & dEO	Method statements for: Managing Terrestrial Biodiversity & Rehabilitation methods as per the specialist report Training and awareness of all involved	Construction, & Operational	dEO & ECO	Monthly by dEO/ Quarterly by CEO (during construction phase and bi-annually during Operational Phase)	Approved method statements Visual inspections (photographic records Monitoring Reports Awareness Records

M5. Preventative erosion control measures to be put in place. **M6.** Conduct alien invasive species monitoring on an annual basis. **M7.** The proponent must be committed to a conservation approach of practice and the actual footprint of disturbance must be kept to a minimum. **M8.** Relocation of important species, identification and demarcation of specimens and sub habitats not to be disturbed will have to be done beforehand by a specialist. **M9.** Important species (fauna) that will be threatened by the development must be relocated to safer habitats by suitable specialists. **M10.** Preventative erosion control measures to be put in place. **M11.** As much of the natural habitat as possible should be preserved during construction and operation to lessen the operational impacts and to reduce the irreversibility of impacts.						

M12. Effective restoration of the natural habitats that were intact before the development should be implemented and reported on after decommissioning. **M13.** Monitoring of implementation of mitigation controls, along with reporting, should be undertaken at least quarterly throughout the construction phase, and bi-annually during the operational phase. Monitoring, at the minimum, should consist of a quarterly monitoring of the development area;						

8.2 Heritage and Cultural Resources

Impact management outcome: Prevent unnecessary disturbance and/or destruction of archaeological sites or features that has not been mitigated for the development						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Ensure that workers and construction vehicles remain away from the grave sites by demarcating the sites with danger tape or by fencing the sites. No pedestrians or construction vehicles allowed inside the demarcated area.	Contractor & dEO	No need for method statement but avoidance of the sensitive and demarcated area is needed. Training and awareness	Construction Phase	dEO & ECO	Monthly	Monitoring report confirming undisturbed archaeological and cultural sites such as graves etc. Visual inspections (photographic records Awareness Records

8.3 Aquatic Resources and Management

Impact management outcome: Minimise Impacts to Aquatic Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
M1: Manage Invasive Plants • Alien and invader vegetation must not be allowed to colonise the area. Control involves killing alien invasive plants present, seedlings and establishing an alternative plant cover to limit re-growth. The use of indigenous plants must be encouraged in the rehabilitated areas (stormwater canals). Control must begin prior to construction phase considering that small populations of invader plant species occur around the project area.	Contractor & dEO	Method statements for: Controlling Alien Invasive Species. Routine monitoring by ECO to ensure no pollution occurs and that erosion control measures are implemented,	Construction, & Operational	dEO & ECO	Monthly	Approved method statements Visual inspections (photographic records Monitoring Reports Awareness Records

• Institute strict control over materials brought onto site, which must be inspected for seeds and steps taken to eradicate these before transport to the site. The contractor is responsible for the control of weeds and invader plants. • Rehabilitate disturbed areas outside the development footprint as quickly as possible. • Institute a monitoring programme during construction, undertaken by the IEO or the ECO, to detect alien invasive species early. Monitoring must be done periodically by the ECO. • Institute an eradication/control programme for early intervention if invasive species are detected. The use of indigenous plants must		Training and awareness of all involved				

be encouraged in the rehabilitated areas.						
M2. Avoid or Minimise Soil and water pollution. • Ensure that all hazardous storage containers and storage areas comply with the relevant SABS standards to prevent leakage. Regularly inspect all vehicles for leaks. Re-fuelling must take place on a sealed surface area to prevent ingress of hydrocarbons into topsoil. • No dumping of waste must take place within the wetlands or their buffer zones. If any spills occur, they must be cleaned up immediately. • Contain all dirty water in the dirty water system and contain all dirty stormwater up to a 1:50 year flood line as a minimum. Ensure that all activities impacting on groundwater resources of the						

subject property are managed according to the relevant DWS Licensing regulations and groundwater monitoring and management requirements. • Appropriate sanitary facilities must be provided for the duration of the proposed development and all waste removed to an appropriate waste facility. • Excess waste or chemicals must be removed from site and discarded in an environmentally friendly way. The Environmental Control Officer (ECO) must enforce this rule rigorously. • Hazardous chemicals to be stored on an impervious surface protected from rainfall and stormwater run-off. • Spill kits must be on-hand to deal with spills immediately.						

• All vehicles must be inspected for oil and fuel leaks on a regular basis. Vehicle maintenance yards on site must make provision for drip trays to capture spills. Drip trays must be emptied into a holding tank and returned to the supplier. • Implement standard dust control measures, including periodic spraying (frequency will depend on many factors including weather conditions, soil composition and traffic intensity and must thus be adapted on an on-going basis) and chemical dust suppressants of construction areas and access roads, and ensure that these are continuously monitored to ensure effective implementation. • A speed limit (preferably 40 km/hour) must be enforced on dirt roads.						

• Limit pesticide use to non-persistent, immobile pesticides and apply in accordance with the label and application permit directions and stipulations for terrestrial and aquatic applications. **M3. Avoid Disturbance of watercourse habitat and fringe vegetation** As far as possible, disturbance must be kept outside of the wetlands and their buffer zones. Existing access roads must be used where possible. **M4. Compaction, Soil Erosion and Sedimentation** • Compaction of soils must be limited and / or avoided as far as possible. Compaction will reduce water infiltration and will result in increased runoff and erosion. Where any disturbance of the soil takes place (have taken place in						

the past), these areas must be stabilised and any alien plants which establish must be cleared and follow-up undertaken for the duration of the construction and decommissioning phases. It is to be undertaken by the Internal Environmental Officer or the Environmental Control Officer. Where compaction becomes apparent, remedial measures must be taken (e.g., "ripping" the affected area). • Reseed any areas where earthworks have taken place with indigenous grasses to prevent further erosion. • Erosion control mechanisms must be established as soon as possible. • A stormwater plan must be developed with the aid of an engineer to ensure that water runoff is diverted off the site without pooling and stagnation causing						

erosion. Financial provision for closure will include the estimated costs for erosion control post-construction and post-decommissioning. • If compaction occurs, rectification can be done by application and mixing of manure, vegetation mulch or any other organic material into the area. Use of well cured manure is preferable as it will not be associated with the nitrogen negative period associated with organic material that is not composted. • Vehicle traffic must not be allowed on the rehabilitated areas, except on allocated roads, due to adverse impacts of dispersive/compaction characteristics of soils and its implications on the long term. • Appropriate design and mitigation measures must be developed and implemented to minimise						

impacts on the natural flow regime of the watercourse i.e., through placement of structures/supports and to minimise turbulent flow in the watercourse. • The indiscriminate use of machinery within the wetland area will lead to compaction of soils and destruction of vegetation and must therefore be strictly controlled. • Solar panels may not be placed within 32 m of the waterbodies. • Perform scheduled maintenance to be prepared for storm events. Ensure that culverts have their maximum capacity, ditches are cleaned, and that channels are free of debris and brush than can block structures.						

8.5 Paleontological

Impact management outcome: Minimise Impacts on Paleontological Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
M1. Monitoring Programme for Palaeontology – to commence once the excavations and construction activities begin. The following procedure is only required if fossils are seen on the surface and when excavations commence: When excavations begin the rocks must be given a cursory inspection by the environmental officer or designated person.	Contractor & dEO	Monitoring and Awareness	Construction Phase	dEO & ECO	Monthly	Monitoring report confirming undisturbed archaeological and cultural sites such as graves etc. Visual inspections (photographic records Awareness Records

Any fossiliferous material (tracfossils, stromatolites, plants, insects, bone or bone fragments) should be put aside in a suitably protected place. This way the project activities will not be interrupted. Lists of possible fossils can be provided to the developer to assist in recognizing them. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment. If there is any possible fossil material found by the contractor, developer or environmental officer then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and						

check the dumps where feasible. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits. If no good fossil material is recovered then no site inspections by the palaeontologist will be necessary. A final report by the palaeontologist must be						

sent to SAHRA once the project has been completed and only if there are fossils. If no fossils are found and the excavations have finished then no further monitoring is required.						

8.7 Social Impact

Impact management outcome: Minimise Social Impacts						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
M1: Maximise local employment and business opportunities associated with the construction phase. CCH should aim to employ a minimum of 80% of the low-skilled workers from the local area. This should also be made a requirement for all contractors. CCH should also develop a database of local BEE service providers. **M2:** Avoid the potential impacts on family structures and social	Contractor & dEO	Implement the SIA recommendations in full Training and Awareness	Construction	dEO & ECO	Weekly / Monthly	Monitoring reports records, confirming social impact mitigations are implemented effectively Visual inspections (photographic records Complaints register to address any concerns raised Awareness Records

networks associated with presence of construction workers from outside the area. To avoid and or minimise the potential impact of construction workers on the local community. This can be achieved by maximising the number of locals employed during the construction phase and minimising the number of workers housed on the site. **M3.** To avoid and or minimise the potential impact of the activities during the construction on the safety of local communities and the potential loss of stock and damage to farm infrastructure. Avoid and or minimise the potential impact on local communities and their livelihoods by **-**						

- Establishing an MF with the adjacent farmers and develop a Code of Conduct for construction workers. - Inform all workers of the conditions contained in the Code of Conduct. - Dismiss all workers that do not adhere to the code of conduct for workers. All dismissals must be in accordance with South African labour legislation. - Compensating farmers / community members at full market related replacement cost for any						

losses, such as livestock, damage to infrastructure etc. **M4.** To avoid and or minimise the potential risk of increased veld fires during the construction phase. Avoid and or minimise the potential risk of increased veld fires during the construction phase by: - Ensuring that open fires on the site for cooking or heating are not allowed except in designated areas. - Providing adequate fire fighting equipment onsite.						

- Providing fire-fighting training to selected construction staff. - Compensating farmers / community members at full market related replacement cost for any losses, such as livestock, damage to infrastructure etc. - Joining Fire Protection Agency **M5.** To avoid and or minimise the potential impacts of safety, noise and dust and damage to roads caused by construction vehicles during the construction phase.						

Avoid and or minimise the potential noise and dust impacts associated with heavy vehicles, and minimise damage to roads by: - Implementing dust suppression measures for heavy vehicles such as wetting roads on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers. - Ensure that all vehicles are road-worthy; drivers are qualified and are made aware of the potential						

noise, dust and safety issues. - Ensure that drivers adhere to speed limits. Vehicles should be fitted with recorders to record when vehicles exceed the speed limit. - Ensure that damage to roads is repaired before completion of construction phase **M6:** To avoid and or minimise the potential impact on current and future farming activities during the construction phase.						

To minimise the loss of land taken up by the PV facility and associated infrastructure and to enable farming activities to continue where possible, specifically grazing by: Minimising the footprint of the PV facility and the associated infrastructure Rehabilitating disturbed areas on completion of the construction phase.						

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
M7: Maximise local employment and business opportunities associated with the operational phase. In the medium to long term employ as many locals as possible to fill the full-time employment opportunities.	**Contractor & dEO**	Training and awareness of all involved	Operational Phase	**dEO & ECO**	As and when required	CCH and Department of Labour Monitoring Reports Awareness Records

M8: To avoid and or minimise the potential impacts associated with the decommissioning phase. Decommissioning will result in job losses, which in turn can result in a number of social impacts, such as reduced quality of life, stress, depression etc. The rehabilitation process should avoid and or minimise	Contractor & dEO	Training and awareness of all involved	Decommissioning Phase	dEO & ECO	During Decommissioning	CCH and Department of Labour Monitoring Reports Awareness Records

the potential social impacts associated with decommissioning phase of the PV facility, when it occurs.						

8.6 Agricultural

Impact management outcome: Minimise Impacts on Agricultural Resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
M1. Limit soil erosion Plan and implement proper soil cover measures and storm water drainage mechanisms. Care should also be taken to control and contain storm water runoff and not to concentrate its runoff, specifically under the solar arrays. Rehabilitate construction sites with indigenous grasses like Eragrostis curvula, Digitaria eriantha, Panicum maximum and Chloris gayana or mixtures thereof.	Contractor & CEO	Implement soil erosion and storm water run-off control measures. Implement Rehabilitation Plans / and oil spill measures. Training and awareness of all involved	Construction, & Operational	dEO & ECO	ECO & dEO	Approved method statements Visual inspections (photographic records Monitoring Reports Awareness Records

Proper road construction and maintenance Apply dust control measures **M2. Limit construction and vehicle impact on dust production and wind erosion** Plan and implement proper soil cover measures and storm water drainage mechanisms Monitor roads and construction sites on a regular basis. **M3. Prevent contamination of the soil, vegetation and underground water by oil, diesel, petrol and other contaminants use by vehicles and construction equipment's.** • Vehicles and equipment must be serviced regularly and maintained in a good running condition. • Vehicles must be fitted with spill skills.						

• Storage of contaminants must be limited to low quantities and done under strict industry standards. • There must be strict control over the safe usage of vehicles and equipment to minimise vehicle accidents and damage to vehicles by rocks and boulders which may cause spillages. • Contingency plans must be in place to deal with spillages. • The solar arrays should only be cleaned with water and soaps and detergents should not be allowed.						

8.7 Visual Impact

Impact management outcome: Minimise Visual Impacts						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Objective 1: To establish a facility that would fit in with the landscape and not create a detrimental visual impact. **M.1:** Prepare environmental constraints plan to establish the environmental sensitive areas and those areas upon which the development may occur. **M.2** Plan vegetated and landscaped berms around the perimeter of the project site to minimise visual impacts onto the site.	Contractor & CEO	Training and awareness of all involved	Planning Phase/ Operational	dEO & ECO	ECO & dEO	• Approved method statements • Visual inspections (photographic records • Monitoring Reports • Awareness Records

M3. Design buildings/ Solar facility structures to reflect the local architecture and sense of place of the region. **M4.** Consider raising the PV platforms so that cattle and sheep and goats can roam underneath the PV 'string'. **M5.** Continue farming practices elsewhere on the property to ensure that the property is not completely denude of agricultural activities. **M6.** Reduce and control dust through the use of approved dust suspension techniques as and when required. **M7.** Construction to occur only during daytime. Should the ECO authorize night work, low flux and frequency lighting shall be used. **M8**. Rehabilitate all disturbed areas in accordance with the development plan.						

M9. Institute a rigorous planting regime in collaboration with the appointed botanica						
Objective 2: Mitigate the possible visual impact associated with the Construction phase. **M1.** An Environmental Control Officer (ECO) must be appointed to oversee the construction process and ensure compliance with conditions of approval. **M2.** Contractor to sign and undertake to comply with Environmental Specifications. **M3.** Demarcate sensitive areas and no-go areas with danger tape to prevent disturbance during construction. **M4.** Keep disturbed areas to a minimum. **M4**. Identify suitable areas within the construction site for fuel	Contractor & CEO	Training and awareness of all involved	Construction Phase	dEO & ECO	dEO & ECO	• Approved method statements • Visual inspections (photographic records • Monitoring Reports • Awareness Records

storage, temporary workshops, eating areas, ablution facilities and washing areas. **M5.** Institute a solid waste management programme to minimise waste generated on the construction site and recycle where possible.						
Objective 3: Mitigate the possible visual impact associated with the Operational phase. **M1:** Maintain the general appearance of the facility as a whole (i.e. the PV panels, buildings and associated infrastructure, roads and natural environment). **M2.** Monitor land surface below PV 'strings' to prevent loss of vegetation and first signs of desertification. **M3.** Maintain access roads to prevent scouring and erosion, especially after rains.	Contractor & CEO	Training and awareness of all involved	Operational Phase	dEO & ECO	dEO & ECO	• Approved method statements • Visual inspections (photographic records • Monitoring Reports • Awareness Records

OBJECTIVE 4: To restore the property to is former natural state **M1.** Prepare a decommissioning plan to establish a timeframe and order of decommissioning of the plant. **M2.** Removal of all infrastructure introduced into the landscape (i.e. PV panels, ancillary infrastructure such as a maintenance workshop, storage building and offices) **M3.** Rehabilitate all new access roads created during the construction period. **M4.** Institute monitoring of all decommissioned and rehabilitated sections of the project site at regular intervals.	Contractor & CEO	Training and awareness of all involved	Decomission Phase	dEO & ECO	dEO & ECO	• Approved method statements • Visual inspections (photographic records • Monitoring Reports • Awareness Records

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.