Appendix E: Generic Environmental Management Programme (Overhead Transmission Infrastructure)

# REPORT

Generic Environmental Management Programme for Transmission Lines associated with Eight 200MW Photovoltaic (PV) plants on the Remaining Extent of Farm Bokpoort 390, Groblershoop, Northern CapeRef 14/12/16/3/3/1/2142 (Venda) Ref 14/12/16/3/3/1/2143 (Tsonga) Ref 14/12/16/3/3/1/2144 (Tswana) Ref 14/12/16/3/3/1/2145 (Sotho) Ref 14/12/16/3/3/1/2146 (Swati) Ref 14/12/16/3/3/1/2147 (Afrikaans) Ref 14/12/16/3/3/1/2150 (Pedi) Ref 14/12/16/3/3/1/2151 (Zulu)

**Environmental Management Programme** 

Client: ACWA Power Energy Africa Pty Ltd

Reference:MD4195TPRP2005131053Status:0.1/S0

Date: 08-May-20





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### 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 has that meaning, and unless the context requires otherwise –

<u>Clearing</u> means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified;

<u>Construction camp</u> 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;

<u>Contractor</u> - 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.

<u>Hazardous Substances</u> 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.

<u>Method Statement</u> means a written submission by the Contractor to the Project Manager/ ECO/ Engineer in response to this EMPr. 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 shall 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.

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<u>Slope</u> means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units;

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

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

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

Works means the Works to be executed in terms of the Contract.

#### **2** ACRONYMS AND ABBREVIATIONS

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

This EMPr is based on the generic Environmental Management Programme for substation infrastructure for electricity transmission and distribution (Government Gazette No 42323, 22 March 2019), contemplated in Regulations 19(4), 23(4) and Appendix 4 to the Environmental Impact Assessment Regulations, 2014, as amended.

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#### 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 generic EMPr gives guidance to the various environmental roles and reporting lines.

Function			Role and Responsibilities
Developer's Pro (DPM)	ject Mar	nager	<ul> <li><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. </li> <li><u>Responsibilities</u> <ul> <li>Be fully conversant with the conditions of the EA;</li> <li>Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s);</li> <li>Issuing of site instructions to the Contractor for corrective actions required;</li> <li>Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings.</li> <li>Overall management of the project and EMPr implementation; and</li> <li>Ensure that periodic environmental performance audits are undertaken on the project implementation.</li> </ul> </li> </ul>

#### Table 1: Guide to roles and responsibilities for implementation of a generic EMPr



Function	Role and Responsibilities
Developer Site Supervisor (DSS)	Role The DSS reports directly to the DPM, oversees site works, liaises with the Contractor(s) and the ECO. The DSS is responsible for the day to day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr.
	<ul> <li><u>Responsibilities</u></li> <li>Ensure that all Contractors identify a contractor's Environmental Officer (cEO);</li> <li>Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO;</li> <li>Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO;</li> </ul>
	<ul> <li>Issuing of site instructions to the Contractor for corrective actions required;</li> <li>Will issue all non-compliances to contractors; and</li> <li>Ratify the Monthly Environmental Report.</li> </ul>
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, contractor Environmental Officer (cEO) and developer Environmental Officer (dEO) are answerable to the Environmental Control Officer for non-compliance with the Performance Specifications as set out in the EA and EMPr.



Function	Role and Responsibilities
	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.
	<ul> <li>Responsibilities</li> <li>The responsibilities of the ECO will include the following: <ul> <li>Be familiar with the recommendations and mitigation measures of this EMPr;</li> <li>Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them;</li> <li>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;</li> <li>Educate the construction team about the management measures contained in the EMPr and environmental licenses;</li> <li>Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective;</li> </ul> </li> </ul>
	<ul> <li>Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements;</li> <li>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;</li> <li>Liaison between the DPM, Contractors, authorities and other lead stakeholders on all</li> </ul>
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Function	Role and Responsibilities
	<ul> <li>environmental concerns;</li> <li>Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr;</li> <li>Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO);</li> <li>Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken;</li> <li>Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken;</li> <li>Assisting in the resolution of conflicts;</li> <li>Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor;</li> <li>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;</li> <li>Maintenance, update and review of the EMPr;</li> <li>Communication of all modifications to the EMPr to the relevant stakeholders.</li> </ul>
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



Function	Role and Responsibilities
	<ul> <li>these measures;</li> <li>Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s);</li> <li>Confine the development site to the demarcated area;</li> <li>Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO);</li> <li>Assist the contractors in addressing environmental challenges on site;</li> <li>Assist in incident management:</li> <li>Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared;</li> <li>Assist the Contractor in investigating environmental incidents and compile investigation reports;</li> <li>Follow-up on pre-warnings, defects, non-conformance reports;</li> <li>Measure and communicate environmental performance to the Contractor;</li> <li>Conduct environmental awareness training on site together with ECO and cEO;</li> <li>Ensure that the necessary legal permits and/ or licenses are in place and up to date;</li> <li>Acting as Developer's Environmental Representative on site and work together with the ECO and Contractor.</li> </ul>
Contractor	Role         The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development or expansion for overhead electricity transmission and distribution infrastructure activities.



Function	Role and Responsibilities
contractor Environmental Officer (cEO)	<ul> <li><u>Responsibilities</u></li> <li>Project delivery and quality control for the construction services as per appointment;</li> <li>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;</li> <li>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;</li> <li>Attend on site meeting(s) prior to the commencement of construction activities to confirm the construction procedure and designated activity zones;</li> <li>Ensure that Contractors' staff (or sub-contractors) repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in the EMPr, to the satisfaction of the ECO.</li> <li>Role</li> <li>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 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:</li> <li>Responsibilities</li> <li>Be on site throughout the duration of the project and be dedicated to the project;</li> <li>Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site;</li> </ul>



Function	Role and Responsibilities
	<ul> <li>Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements;</li> <li>Attend the Environmental Site Meeting;</li> <li>Undertaking corrective actions where non-compliances are registered within the stipulated timeframes;</li> <li>Report back formally on the completion of corrective actions;</li> <li>Assist the ECO in maintaining all the site documentation;</li> <li>Prepare the site inspection reports and corrective action reports for submission to the ECO;</li> <li>Assist the ECO with the preparing of the monthly report; and</li> <li>Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.</li> </ul>



### 4 ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the generic EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all overhead transmission and distribution electricity 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 generic EMPr file. At a minimum, all documentation detailed below will be stored in the generic 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 Developer's Site Supervisor (where applicable). This duplicate file will be the responsibility of the ECOs and must remain current and up to date. The filing system must be updated, and relevant documents added as required. The generic EMPr file must always be made available on request by the CA (in terms of NEMA EIA regulation) or other relevant authorities. The generic EMPr file will form part of any environmental audits undertaken as prescribed in the Regulations.

#### 4.2 Documentation to be Available

At the outset of the project the following 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;
- 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 shall 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 generic 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 programmed commencement date of the subject works or 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 substances;
- 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 generic 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 generic 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 generic 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 Developer's Site Supervisor or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the generic EMPr file and will at a minimum include the following:

- Time and date of the non-compliance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;
- Recommended/ required corrective action; and
- Date by which the corrective action to be completed.



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

#### 4.8 Corrective Action Records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the DSS, the contractor's cEO will ensure that the corrective actions required to 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:

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:

- Pictures of all areas designated as work areas, camp areas, development sites and storage areas taken before these areas are set up;
- All bunding and fencing;
- Road conditions and road verges;
- Condition of all farm fences;
- Topsoil storage areas;
- All areas to be cordoned off during construction;
- Waste management sites;
- Ablution facilities (inside and out);
- Any non-conformances deemed to be "significant";
- All completed corrective actions for non-compliances;
- All required signage;



- Photographic recordings of incidents;
- All areas before, during and post rehabilitation; and
- 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:

- Record the name and contact details of the complainant;
- Record the time and date of the complaint;
- Contain a detailed description of the complaint;
- Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
- 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:

- Record the full detail of the complaint as described in **Section 4.10** above;
- The DPM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
- 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
- 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:

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



#### 4.13 Environmental Audits

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

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

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

#### 4.14 Final Environmental Audits

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



#### PART B: SECTION 1

#### 5 IMPACT MANAGEMENT OUTCOMES AND 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 Actions	Implementation				
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
All staff must receive environmental awareness					
training;					
The Contractor must allow for sufficient sessions					
to train all personnel with no more than 20					
personnel attending each course;					Record of
Refresher environmental awareness training is					attendance
available as and when required;		Environmental			to awarene
All staff are aware of the conditions and controls		awareness			training and
linked to the EA and within the EMPr and made	DPM	training and	ECO	Monthly	toolbox talk
aware of their individual roles and responsibilities		weekly toolbox			must be file
in achieving compliance with the EA and EMPr;		talks			in the Site
All staff are made aware of their individual roles					Environment
and responsibilities in achieving compliance with					File
the environmental authorisation and EMPr;					
The Contractor must erect and maintain					
information posters at key locations on site; and					
the posters must include the following					



Impa	ct Management Actions	Implementation		Monitoring		
		Responsible	Method of	Responsible	Frequency	Evidence of
		Person/s	Implementation	Person		Compliance
infc	prmation as a minimum:					
a)	Safety notifications; and					
b)	No littering.					
Env	ironmental awareness training must include					
asa	a minimum the following:					
a)	Description of significant environmental					
	impacts, actual or potential, related to their					
	work activities;					
b)	Mitigation measures to be implemented					
	when carrying out specific activities;					
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;					



Impact Management Actions	Imple	mentation	Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
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

**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				
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		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 laydown 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;	Contractor & cEO	Method Statement for site establishment and layout plan	ECO	Once-off approval of method statement On-going monitoring of implementation	Approved Method Statement and layout plan Environmental checklists and reports



Management Outcome: Impacts on the environment are minimised during site establishment and the development footprint are kept

to demarcated development area.

Impact Management Actions	Imple	Implementation		Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
- 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.					



### 5.3 Access Restricted Areas

Impact Management Actions	Imple	mentation	Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
- Identification of access restricted areas is to be					Clearly	
<ul> <li>informed by the environmental assessment,</li> <li>site walk through and any additional areas</li> <li>identified during development;</li> <li>Erect, demarcate and maintain a temporary</li> <li>barrier with clear signage around the</li> <li>perimeter of any access restricted area, colour</li> <li>coding could be used if appropriate; and</li> <li>Unauthorised access and development</li> <li>related activity inside access restricted areas is</li> <li>prohibited.</li> </ul>	Contractor & cEO	Demarcation of Access restricted areas and staying within approved areas for construction	ECO & dEO	Once-off identification of access restricted areas On-going monitoring of implementation	marked access restricted areas Site inspection of No-Go areas	



Impact Management Actions	Implementation		Monitoring		
	Responsible Person/s	Method of Implementation	Responsible Person	Frequency	Evidence of Compliance
Access to the servitude and tower positions must be negotiated with the relevant landowner and must fall within the assessed and authorised area; An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities; The access roads to tower positions must be signposted after access has been negotiated and before the commencement of the activities; All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition; All Contractors must be made aware of all these access routes; Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the Contractor's expense;	Contractor	Access roads must be identified, and agreements formalised before commencing construction	ECO	Monthly	Access road inspection



Management Outcome: Minimise impact to the enviro	Management Outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.					
Impact Management Actions	Imple	mentation		Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
- 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; and						
- Access roads must only be developed on pre-						
planned and approved roads.						



### 5.5 Fencing and Gate Installation

**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	Imple	mentation	Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
<ul> <li>Use existing gates provided to gain access to all parts of the area authorised for development, where possible;</li> <li>Existing and new gates to be recorded and documented in accordance with Section 4.9: Photographic Record;</li> <li>All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner;</li> <li>-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;</li> <li>Care must be taken that the gates must be so erected that there is a gap of no more than</li> </ul>	Contractor	Controlled access to working areas	deo & eco	Monthly	Site inspection	



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	Imple	mentation		Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
100mm between the bottom of the gate and the					
ground;					
<ul> <li>Where gates are installed in jackal-proof fencing,</li> </ul>					
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;					



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	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
<ul> <li>Any temporary fencing to restrict the movement of</li> </ul>					
life-stock must only be erected with the permission					
of the landowner.					
- 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; and					
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

Management Outcome: Undertake responsible water usage.

Impact Management Actions	Implementation		Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
<ul> <li>All abstraction points or boreholes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis;</li> <li>The Contractor must ensure the following: <ul> <li>a) The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river;</li> <li>b) No damage occurs to the riverbed or banks and that the abstraction of water does not entail stream diversion activities; and</li> <li>c) All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented.</li> </ul> </li> <li>Ensure water conservation is being practiced by: <ul> <li>a) Minimising water use during cleaning of equipment;</li> </ul> </li> </ul>	Contractor	Water from appropriately licensed sources Environmental awareness training	ECO & dEO	Monthly	Site	



Management Outcome: Undertake responsible water usage.

Impact Management Actions	Implementation		Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
b) Undertaking regular audits of water systems;						
c) Including a discussion on water usage and						
conservation during environmental awareness						
training; and						
d) The use of grey water is encouraged.						

#### 5.7 Storm and Wastewater Management

**Management Outcome:** Impacts to the environment caused by stormwater and wastewater discharges during construction are avoided.

Impact Management Actions	Implementation		Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
- Runoff from the cement/ concrete batching areas	Contractor, PM & cEO	Method			Site	
must be strictly controlled, and contaminated		Statement for			inspection	
water must be collected, stored and either				ECO & dEO	Monthly	Approved
treated or disposed of off-site, at a location			stormwater			Method
approved by the Project Manager;		and			Statement	



Management Outcome: Impacts to the environment caused by stormwater and wastewater discharges during construction are avoided.

Impact Management Actions	Implementation		Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
- All spillage of oil onto concrete surfaces must be		wastewater			
controlled by the use of an approved absorbent		management			
material and the used absorbent material					
disposed of at an appropriate waste disposal					
facility;					
- Natural stormwater 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					



**Management Outcome:** Impacts to the environment caused by stormwater and wastewater discharges during construction are avoided.

Impact Management Actions	Implementation		Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
ECO.						

#### 5.8 Solid and Hazardous Waste Management

Management Outcome: Wastes are appropriately stor	red, handled c	and safely disposed	of at a recognise	d waste facility.	
Impact Management Actions	Imple	mentation		Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
<ul> <li>All measures regarding waste management must</li> </ul>		General camp			Provision of
be undertaken using an integrated waste		-			waste
management approach;		house-keeping			disposal
- Sufficient, covered waste collection bins		Provision of			facilities
(scavenger and weatherproof) must be provided;	Contractor	bins	dEO	Weekly	(bins &
- A suitably positioned and clearly demarcated	& cEO	Awareness	ECO	Bi-monthly	skips)
waste collection site must be identified and		training on			Proof of
provided;		waste			Safe
<ul> <li>The waste collection site must be maintained in a</li> </ul>		minimisation			Disposal
clean and orderly manner;		and re-use			Certificates



Management Outcome: Wastes are appropriately stored, handled and safely disposed of at a recognised waste facility.								
Impact Management Actions	Implementation		Monitoring					
	Responsible	Method of	Responsible	Frequency	Evidence of			
	Person/s	Implementation	Person		Compliance			
<ul> <li>Waste must be segregated into separate bins and</li> </ul>								
clearly marked for each waste type for recycling								
and safe disposal;								
<ul> <li>Staff must be trained in waste segregation;</li> </ul>								
<ul> <li>Bins must be emptied regularly;</li> </ul>								
- General waste produced onsite must be disposed								
of at registered waste disposal sites/ recycling								
company;								
- Hazardous waste must be disposed of at a								
registered waste disposal site;								
- Certificates of safe disposal for general, hazardous								
and recycled waste must be maintained.								



#### 5.9 Protection of Watercourses and Estuaries

Management Outcome: Pollution and contamination	of the waterc	ourse environment o	and or estuary erc	sion are prever	nted.
Impact Management Actions	Imple	mentation		Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
<ul> <li>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;</li> <li>In the event of a spill, prompt action must be taken to clear the polluted or affected areas;</li> <li>Where possible, no development equipment must traverse any seasonal or permanent wetland;</li> <li>No return flow into the estuaries must be allowed and no disturbance of the Estuarine functional Zone should occur;</li> <li>Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available;</li> <li>There must not be any impact on the long-term</li> </ul>	Contractor & cEO	Method Statement for Working in Watercourses (if applicable)	dEO ECO	Weekly Bi-monthly	Approval and compliance with the Method Statement (if applicable)



Management Outcome: Pollution and contamination	of the waterco	ourse environment	and or estuary ero	sion are prever	nted.
Impact Management Actions	Imple	nplementation Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
morphological dynamics of watercourses or					
estuaries;					
- Existing crossing points must be favoured over the					
creation of new crossings (including temporary					
access);					
- When working in or near any watercourse or					
estuary, the following environmental controls and					
consideration must be taken:					
a) Water levels during the period of construction;					
No altering of the bed, banks, course or					
characteristics of a watercourse;					
b) During the execution of the works, appropriate					
measures to prevent pollution and					
contamination of the riparian environment					
must be implemented e.g. including ensuring					
that construction equipment is well maintained;					
c) Where earthwork is being undertaken in close					
proximity to any watercourse, slopes must be					



	Lange La	Implementation			
Impact Management Actions	Imple	mentation	Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
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 Actions	Imple	mentation	Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
General:					
<ul> <li>Indigenous vegetation which does not interfere</li> </ul>					
with the development must be left undisturbed;					
<ul> <li>Protected or endangered species may occur on</li> </ul>					
or near the development site. Special care should					
be taken not to damage such species;		Woking within			
- Search, rescue and replanting of all protected and		demarcated			
endangered species likely to be damaged during	Contractor	areas	dEO	Weekly	Site
project development must be identified by the	& cEO	Invasive Alien	ECO	Weekly	
relevant specialist and completed prior to any	& CEU		ECO	Monthly	inspection
development or clearing;		Plant (IAP)			
- Permits for removal must be obtained from the		eradication and control			
Department of Agriculture, Forestry and Fisheries		and conirol			
prior to the cutting or clearing of the affected					
species, and they must be filed;					
<ul> <li>The Environmental Audit Report must confirm that</li> </ul>					
all identified species have been rescued and					



Management Outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.

Impact Management Actions	Imple	mentation		Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
replanted and that the location of replanting is					
compliant with conditions of approvals;					
Trees felled due to construction must be					
documented and form part of the Environmental					
Audit Report;					
Rivers and watercourses must be kept clear of					
felled trees, vegetation cuttings and debris;					
Only a registered pest control operator may apply					
herbicides on a commercial basis and commercial					
application must be carried out under the					
supervision of a registered pest control operator,					
supervision of a registered pest control operator or					
is appropriately trained;					
A daily register must be kept of all relevant details					
of herbicide usage;					
No herbicides must be used in estuaries;					
- All protected species and sensitive vegetation not					
removed must be clearly marked and such areas					
fenced off in accordance to Section 5.3: Access					



Management Outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.

Impact Management Actions	Imple	mentation		Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
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 landowner 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;					



Management Outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.

Impact Management Actions	Imple	mentation		Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
- 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.						
<ul> <li>MVCD is determined from SANS 10280;</li> </ul>						
– 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"; and						
- Alternative methods of stringing which limit impact						
to the environment must always be considered.						



## 5.11 Protection of Fauna

Impact Management Actions	Implementation			Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
<ul> <li>No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present;</li> <li>The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme;</li> <li>Breeding sites must be kept intact and disturbance to breeding birds must be avoided.</li> <li>Special care must be taken where nestlings or fledglings are present;</li> <li>Nesting sites on existing parallel lines must documented;</li> <li>Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds;</li> <li>Bird guards and diverters must be installed on the</li> </ul>	Contractor & cEO	Awareness training Injuring, capturing, killing of fauna identified on site must be reported	deo & eco	Monthly	Training material related to faunal managemen



Management Outcome: Disturbance to fauna is minimised.

Impact Management Actions	Imple	mentation		Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
new line as per the recommendations of the					
specialist;					
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 Actions	Imple	mentation		Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
Identify, demarcate and prevent impact to all					
known sensitive heritage features on site in					
accordance with the No-Go procedure in <b>Section</b>					
5.3: Access Restricted Areas;					
Carry out general monitoring of excavations for					
potential fossils, artefacts and material of heritage					
importance;		Working within			
All work must cease immediately, if any human	Contractor	approved			Site
remains and/ or other archaeological,		areas for	dEO & ECO	Monthly	
palaeontological and historical material are	& cEO	construction			inspection
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.					



## 5.13 Safety of the Public

Impact Management Actions	Implementation		Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		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.;					Health and	
<ul> <li>All unattended open excavations must be adequately fenced or demarcated;</li> <li>Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding;</li> <li>Ensure structures vulnerable to high winds are secured; and</li> <li>Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.</li> </ul>	Contractor	Compilation of Health and Safety Plan Maintain Health and Safety File	Occupation Health & Safety Officer	Monthly	safety inspections Investigation of major accident/ incidents	



### 5.14 Sanitation

**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	Imple	mentation		Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		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		Provision of			
permitted under any circumstances;		Ablution			
- Where mobile chemical toilets are required, the		facilities			Proof of
following must be ensured:	Contractor	during	dEO	Weekly	servicing
a) Toilets are located no closer than 100m to any	Contractor	construction	ECO	Monthly	and safe
watercourse or water body;		Management			disposal
b) Toilets are secured to the ground to prevent		of			
them from toppling due to wind or any other		facilities			
cause;					
c) No spillage occurs when the toilets are					
cleaned or emptied and the contents are					
managed in accordance with the EMPr;					



**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.

Impa	ct Management Actions	Imple	mentation		Monitoring	
		Responsible	Method of	Responsible	Frequency	Evidence of
		Person/s	Implementation	Person		Compliance
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; and					
– Ac	opy of the waste disposal certificates must be					
ma	intained.					



## 5.15 Prevention of Disease

Impact Management Actions	Imple	mentation		Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
<ul> <li>Undertake environmentally-friendly pest control in the camp area;</li> <li>Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS;</li> <li>The Contractor must ensure that information posters on AIDS are displayed in the Contractor camp area;</li> <li>Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable;</li> <li>Free condoms must be made available to all staff on site at central points;</li> <li>Medical support must be made available; and</li> <li>Provide access to Voluntary HIV Testing and Counselling Services.</li> </ul>	Contractor	Compilation of Health and Safety Plan Maintain Health and Safety File	Occupation Health & Safety Officer	Monthly	Health and safety inspection:



## 5.16 Emergency Procedures

**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	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation; All staff must be made aware of emergency procedures as part of environmental awareness training; The relevant local authority must be made aware of a fire as soon as it starts; In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented <b>(Section 5.17: Hazardous</b> )	Contractor	ERAP Awareness Training	ECO	Monthly	Approved ERAP & training records



## 5.17 Hazardous Substances

Impact Management Actions	lanagement Actions Implementation		Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence o
	Person/s	Implementation	Person		Compliance
The use and storage of hazardous substances to					
be minimised and non-hazardous and non-toxic					
alternatives substituted where possible;					C:1 -
All hazardous substances must be stored in suitable					Site
containers as defined in the Method Statement;					inspection
Containers must be clearly marked to indicate		Method			of
contents, quantities and safety requirements;		Statement for			hazardou
All storage areas must be bunded. The bunded		the handling,		Monthly	storage
area must be of sufficient capacity to contain a	Contractor	storage, use	ECO		areas
spill/ leak from the stored containers;		and disposal			and
Bunded areas to be suitably lined with a SABS		of hazardous			inspection
approved liner;		substances			of drip tra
An Alphabetical Hazardous Chemical Substance					and
(HCS) control sheet must be drawn up and kept up					imperviou
to date on a continuous basis;					surfaces
All hazardous chemicals that will be used on site					
must have Material Safety Data Sheets (MSDS);					



Impact Management Actions	Imple	mentation		Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
- 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						



Impact Management Actions	Imple	mentation		Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
an oil separator;					
Provision must be made for refuelling at the					
storage area by protecting the soil with an					
impermeable groundcover. Where dispensing					
equipment is used, a drip tray must be used to					
ensure small spills are contained;					
All empty externally dirty drums must be stored on					
a drip tray or within a bunded area;					
No unauthorised access into the hazardous					
substances storage areas must be permitted;					
No smoking must be allowed within the vicinity of					
the hazardous storage areas;					
Adequate fire-fighting equipment must be made					
available at all hazardous storage areas;					
Where refuelling away from the dedicated					
refuelling station is required, a mobile refuelling unit					
must be used. Appropriate ground protection such					
as drip trays must be used;					
An appropriately sized spill kit kept onsite relevant					



Management Outcome: Safe storage, handling, use a	nd disposal of	hazardous substan	ces.			
Impact Management Actions	Imple	mentation		Monitoring	J	
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
to the scale of the activity (ies) 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;						
<ul> <li>In the event of a spill, contaminated soil must be</li> </ul>						
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 Wastewater Management						
and Section 5.8 for Solid and Hazardous Waste						
Management.						



## 5.18 Workshop, Equipment Maintenance and Storage

Impact Management Actions	Implementation		Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
<ul> <li>Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area;</li> <li>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;</li> <li>Leaking equipment must be repaired immediately or be removed from site to facilitate repair;</li> <li>-Workshop areas must be monitored for oil and fuel spills;</li> <li>Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available;</li> <li>The workshop area must have a bunded concrete</li> </ul>	Contractor	Method Statement for workshop, equipment maintenance and storage	ECO	Monthly	Site



Management Outcome: Soil, surface water and groundwater contamination is minimized.

Impact Management Actions	Implementation			Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
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 with					
Section 5.7: Storm and Wastewater Management.					

## 5.19 Batching Plants

Impact Management Actions	Imple	mentation		Monitoring	Aonitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
<ul> <li>Concrete mixing must be carried out on an impermeable surface;</li> <li>Batching plants areas must be fitted with a containment facility for the collection of cement laden water.</li> </ul>	Contractor	Method Statement for batching activities	ECO	Monthly	Site inspection	



Management Outcome: Minimise spillages and contamination of soil, surface water and groundwater

Impact Management Actions	Imple	mentation		Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
- 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 10m 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 licensed 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					



Management Outcome: Minimise spillages and contamination of soil, surface water and groundwater

Impact Management Actions	Implementation		Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
removed or reused from site on completion of					
construction period and disposed at a registered					
disposal facility; and					
- Temporary fencing must be erected around					
batching plants in accordance with Section 5.5:					
Fencing and Gate Installation.					

#### 5.20 Blasting

Impact Management Actions	Imple	mentation	Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
<ul> <li>Any blasting activity must be conducted by a suitably licensed blasting contractor; and</li> <li>Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on site.</li> </ul>	Contractor	Blasting Method Statement	ECO	Monthly	Blasting according the Methoc Statement



Management Outcome: Unnecessary noise is prevented by ensuring that noise from construction activities is mitigated.								
Impact Management Actions	Imple	mentation		Monitoring				
	Responsible	Method of	Responsible	Frequency	Evidence of			
	Person/s	Implementation	Person		Compliance			
<ul> <li>The Contractor must keep noise level within acceptable limits,</li> <li>Restrict the use of sound amplification equipment for communication and emergency only;</li> <li>All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained;</li> <li>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;</li> <li>Develop a Code of Conduct for the construction staff. Operating hours as determined by the</li> </ul>	Person/s Contractor	Implementation Compliance with SANS 10103 and OHS Act	Person dEO ECO	Daily Monthly	Compliance Inspection of Complaints Register			



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

Impact Management Actions	Implementation		Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
must be ensured that development activities must					
still meet the impact management outcome					
related to noise management.					

#### 5.22 Fire Prevention

Management Outcome: Prevention of uncontrollable fires.								
Impact Management Actions	Imple	nentation		Monitoring				
	Responsible	Method of	Responsible	Frequency	Evidence of			
	Person/s	Implementation	Person		Compliance			
- Designate smoking areas where the fire hazard								
could be regarded as insignificant;								
- Firefighting equipment must be available on all					Compliance			
vehicles located on site;		Fire Prevention			Compliance with Fire			
- The local Fire Protection Agency (FPA) must be	Contractor	Plan	ECO Month	Monthly	Prevention			
informed of construction activities;		TIGH			Plan			
- Contact numbers for the FPA and emergency					FIGH			
services must be communicated in environmental								
awareness training and displayed at a central								



Management Outcome: Prevention of uncontrollable fires.

Impact Management Actions	Implementation		Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
location on site;						
- Two-way swop of contact details between ECO						
and FPA.						

#### 5.23 Stockpiling and Stockpile Areas

Impact Management Actions	Imple	mentation	Monitoring		
	Responsible Person/s	Method of 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, wetlands 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;	Contractor	Method Statement to be compiled for stockpile management	dEO ECO	Daily Bi-monthly	Site inspection and compliance with Method Statement



Management Outcome: Erosion and sedimentation as a result of stockpiling are reduced.Impact Management ActionsImplementationMonitoringResponsible<br/>Person/sMethod of<br/>ImplementationResponsible<br/>PersonFrequency

- Stockpiles must not exceed 2m in height;
  During periods of strong winds and heavy rain, the stockpiles should be covered with appropriate material (e.g. cloth, tarpaulin etc.);
  Where possible, sandbags (or similar) should be
- Where possible, sandbags (or similar) should be placed at the bases of the stockpiled material in order to prevent erosion of the material.

#### 5.24 Finalising Tower Positions

Management Outcome: No environmental degradation occurs as a result of the survey and pegging operations.									
Impact Management Actions	Implementation Monitoring								
	Responsible	Method of	Responsible	Frequency	Evidence of				
	Person/s	Implementation	Person		Compliance				
<ul> <li>No vegetation clearing must occur during survey</li> </ul>	PM	Method			Site				
and pegging operations;	Botanical	Statement for			inspection				
- No new access roads must be developed to	specialist	survey and	dEO	Once-off	and				
facilitate access for survey and pegging purposes;	Contractor	pegging	ECO		compliance				
– Project Manager, Botanical specialist and		operations			with				

**Evidence of** 

Compliance



Management Outcome: No environmental degradation occurs as a result of the survey and pegging operations.

Impact Management Actions	Implementation			Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
Contractor to agree on final tower positions based					Method
on survey within assessed and approved areas;					Statement
- 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.					

#### 5.25 Dust Emissions

Management Outcome: Dust prevention measures are applied to minimise the generation of dust.									
Impact Management Actions	Imple	mentation	Monitoring						
	Responsible	Method of	Responsible	Frequency	Evidence of				
	Person/s	Implementation	Person		Compliance				
<ul> <li>Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO;</li> <li>Removal of vegetation must be avoided until such</li> </ul>	Contractor	Regular dust suppression Maintaining a	dEO ECO	Daily Monthly	Site inspection Dust suppression				
time as soil stripping is required and similarly		dust			register				



Management Outcome: Dust prevention measures are applied to minimise the generation of dust.

Impact Management Actions	Imple	mentation	on Monitori		ing	
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
exposed surfaces must be revegetated or		suppression				
stabilised as soon as is practically possible;		register			Inspection	
- Excavation, handling and transport of erodible					of	
materials must be avoided under high wind					Complaints	
conditions or when a visible dust plume is present;					Register	
– During high wind conditions, the ECO must					relating	
evaluate the situation and make					to dust	
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;						
<ul> <li>Where erosion of stockpiles becomes a problem,</li> </ul>						
erosion control measures must be implemented at						
the discretion of the ECO;						
<ul> <li>Vehicle speeds must not exceed 40km/h along</li> </ul>						
dust roads or 20km/h when traversing						



Management Outcome: Dust prevention measures are applied to minimise the generation of dust.

Impact Management Actions	Implementation		Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
unconsolidated and non-vegetated areas;						
- Straw stabilisation must be applied at a rate of one						
bale/ 10m² and harrowed into the top 100mm of						
top material, for all completed earthworks; and						
- For significant areas of excavation or exposed						
ground, dust suppression measures must be used						
to minimise the spread of dust.						

#### 5.26 Excavation and Installation of Foundations

Management Outcome: No environmental degradation occurs as a result of the excavation or installation of foundations.						
Impact Management Actions	Implementation Monitorin			Monitoring	g	
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
<ul> <li>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;</li> <li>Spoil can however be used for landscaping</li> </ul>	Contractor cEO	Method Statement for excavation and	dEO ECO	Daily Monthly	Site inspection	



Management Outcome: No environmental degradation occurs as a result of the excavation or installation of foundations.

Impact Management Actions	Implementation		Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
purposes and must be covered with a layer of		installation of			Approved	
150mm topsoil for rehabilitation purposes;		foundations			Method	
- Management of equipment for excavation					Statement	
purposes must be undertaken in accordance with						
Section 5.18: Workshop Equipment Maintenance						
and Storage;						
- 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.						



## 5.27 Assembly and Erecting Towers

Impact Management Actions	Implementation		Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence o
	Person/s	Implementation	Person		Compliance
Prior to erection, assembled towers and tower					
sections must be stored on elevated surface					
(suggest wooden blocks) to minimise damage to					
the underlying vegetation;					
In sensitive areas, tower assembly must take place					
off-site or away from sensitive positions;					
The crane used for tower assembly must be		Method			Site
operated in a manner which minimises impact to	Cardanalan	Statement for	500		inspection
the environment;	Contractor	assembly and	ECO	Bi-monthly	Approved
The number of crane trips to each site must be	cEO	erection of	dEO		Method
minimised;		towers			Statemen
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					



Management Outcome: No environmental degradation occurs as a result of assembly and erecting of towers.

Impact Management Actions	Imple	mentation	Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
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;					
- 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					



Management Outcome: No environmental degradation occurs as a result of assembly and erecting of towers.

Impact Management Actions	Imple	mentation	Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
and any pieces greater than 150mm 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 channelled					
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					



Management Outcome: No environmental degradation occurs as a result of assembly and erecting of towers.

Impact Management Actions	Implementation		Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
to effect revegetation 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

Management Outcome: No environmental degradation occurs as a result of stringing.									
Impact Management Actions	Implementation								
	Responsible	Method of	Responsible	Frequency	Evidence of				
	Person/s	Implementation	Person		Compliance				
- Where possible, previously disturbed areas must be									
used for the siting of winch and tensioner stations.					Site				
In all other instances, the siting of the winch and		Method	dEO		inspection				
tensioner must avoid Access restricted areas and	Contractor	Statement for	ECO	Monthly					
other sensitive areas;	cEO	stringing of	ECO	MOITIN	Approved				
- The winch and tensioner station must be equipped		towers			Method				
with drip trays in order to contain any fuel,					Statement				
hydraulic fuel or oil spills and leaks;									



Impact Management Actions	Implementation		Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
Refuelling 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;						
Where the stringing operation crosses a public or						
private road or railway line, the necessary						



Impact Management Actions	Imple	mentation		Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
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						



Management Outcome: No environmental degradation occurs as a result of stringing.								
Impact Management Actions	Implementation							
	Responsible	Method of	Responsible Frequency		Evidence of			
	Person/s	Implementation	Person		Compliance			
such as vineyards, orchards, nurseries.								

## 5.29 Socio-economic

Impact Management Actions	Imple	mentation	Monitoring			
	Responsible Person/s	Method of Implementation	Responsible Person	Frequency	Evidence of Compliance	
<ul> <li>Develop and implement communication strategies to facilitate public participation;</li> <li>Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process;</li> <li>Sustain continuous communication and liaison with neighbouring owners and residents;</li> <li>Create work and training opportunities for local stakeholders; and</li> <li>Where feasible, no workers, with the exception</li> </ul>	Contractor	Stakeholder engagement plan Communication plan	ECO	Bi-monthly	Site inspection Approved Stakeholder Engagement and communicatio plan	



Management outcome: Socio-economic development is enhanced.

Impact Management Actions	Implementation		Monitoring			
	Responsible Method of		Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
of security personnel, must be permitted to stay						
over-night on the site. This would reduce the risk						
to local farmers.						

#### 5.30 Temporary Site Closure

**Management Outcome:** Minimise the risk of environmental impact during periods of site closure greater than five days. **Impact Management Actions** Implementation Monitoring Responsible Method of Responsible Frequency **Evidence of** Person/s Implementation Person Compliance Bunds must be emptied (where applicable) and need to be undertaken in accordance with the Site Method impact management actions included in Sections inspection Statement for 5.17: Management of Hazardous Substances and ECO Contractor **Bi-monthly** site closure 5.18 Workshop, Equipment Maintenance and cEO dEO Approved greater than 5 Storage; Method days Hazardous storage areas must be well ventilated; Statement Fire extinguishers must be serviced and accessible.



Management Outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.							
Impact Management Actions	Imple	mentation		Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of		
	Person/s	Implementation	Person		Compliance		
Service records to be filed and audited at last							
service;							
<ul> <li>Emergency and contact details displayed must be</li> </ul>							
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;							
<ul> <li>Toilets must have been emptied and secured;</li> </ul>							



Management Outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.								
Impact Management Actions	Imple	mentation						
	Responsible	Method of	Responsible Frequency		Evidence of			
	Person/s	Implementation	Person		Compliance			
<ul> <li>Refuse bins must have been emptied and secured;</li> </ul>								
<ul> <li>Drip trays must have been emptied and secured.</li> </ul>								

### 5.31 Landscaping and Rehabilitation

Impact Management Actions	Imple	mentation	Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
<ul> <li>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;</li> <li>All slopes must be assessed for contouring, and to</li> </ul>	Contractor cE0	Method Statement for landscaping	ECO dEO	Monthly	Site inspection Approved
contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983;		and rehabilitation	GLO		Method Statement



Impact Management Actions	Imple	mentation		Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
- 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						



Impact Management Actions	Imple	mentation	Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
(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;					
<ul> <li>Subsoil must be ripped before topsoil is placed;</li> </ul>					
- 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					



Impact Management Actions	Imple	mentation		Monitoring	
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
erosion of embankments.					
- The contract design specifications must be					
adhered to and implemented strictly;					
<ul> <li>Spoil can be used for backfilling or landscaping as</li> </ul>					
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 regulation 26 (h) of the Environmental Impact Assessment Regulations, 2014 as amended.



#### PART B: SECTION 2

#### 7 SITE SPECIFIC INFORMATION AND DECLARATION

#### 7.1 Sub-section 1: Contact Details and Description of the Project

7.1.1 Details of the applicant:

Name of applicant: **Prabashen Govender** E-mail address: **pgovender@acwapower.com** Tel No: **(011) 722 4100** Fax No: **(011) 722 4113** Postal Address: **PO Box 650200, Benmore, 2010** Physical Address: **7th Floor, 90 Grayston Drive, Sandton, 2196** 

### 7.1.2 Details and expertise of the EAP:

Name of applicant: Prashika Reddy (Royal HaskoningDHV)

E-mail address: prashika.reddy@rhdhv.com

Tel No: 087 352 1577

Fax No: Not application

Expertise of the EAP (Curriculum Vitae included): Prashika Reddy is a Senior Environmental Scientist with 18 years' experience in various environmental fields including: EIAs, EMPrs, PPP and environmental monitoring and audits. She is/ has been part of numerous multi-faceted large-scale projects, including the establishment of linear developments (roads and powerlines), industrial plants, electricity generation plants, mixed-use developments and mining projects. She is a Professional Natural Scientist (400133/10) with the South African Council for Natural Scientific Professions and a registered EAP with EAPASA.

7.1.3 Project name: Basic Assessment for the Proposed Development of Eight 200MW Photovoltaic (PV) Plants on the Remaining Extent of Farm Bokpoort 390, Groblershoop, Northern Cape

#### 7.1.4 Description of the project:

The PV plant converts the sun's energy directly into electrical energy. The PV plant will consist of 200 MW photovoltaic solar arrays. The general position of the PV plant.



Each of the PV plants will consist of the following infrastructure:

- Solar PV panel that will be able to deliver up to 200 MW to the Eskom National Grid;
- Inverters that convert direct current (DC) generated by the PV modules into alternating current (AC) to be exported to the electrical grid;
- A transformer that raises the system AC low voltage to medium voltage. The transformer converts the voltage of the electricity generated by the PV panels to the correct voltage for delivery to Eskom;
- Transformer substation; and
- Instrumentation and Control consisting of hardware and software for remote plant monitoring and operation of the facility.

Associated infrastructure includes:

- Mounting structures for the solar panels;
- Cabling between the structures, to be lain underground where practical;
- A new 132 kV overhead powerline (servitude spanning 15.5 m on both sides with towers that will be 35 m high) which will connect the facility to the National Grid via Eskom's existing Garona Substation;
- Battery Energy Storage System (BESS);
- Internal access roads (4 6 m wide roads will be constructed but existing roads will be used as far as possible) and fencing (approximately 3 m in height); and
- Shared infrastructure consisting of buildings, including a workshop area for maintenance, storage (i.e. fuel tanks, etc.), laydown area, parking, warehouse, and offices (previously approved).

Table 2 summarises the main technical details for a PV plant and associated infrastructure.

Facility Component	Description/ Dimensions
Height of PV panels	4.5 m
Area of PV Array	150 ha
Area occupied by inverter/ transformer stations/ substations	150 m x 150 m
Capacity of on-site substation	11 kV/132 kV on site substation

### Table 2: Technical details of the proposed PV plant/ s



Facility Component	Description/ Dimensions
Area occupied by both permanent and construction laydown areas	5 ha
Area occupied by buildings	Approximately 5ha (temporary facilities used during the construction and operational phase will be less than as PV does not require a lot of operational staff)
Length of internal roads	To be finalised during detailed design of facility
Width of internal roads	4 m
Proximity to grid connection	Approximately 5 km
Height of fencing	3 m
Type of fencing	Security Fencing
Overhead powerline length	Varies in length
Overhead powerline servitude	15.5 m on each side
Overhead powerline tower height	35 m
BESS (either lead-acid or lithium-ion)	Battery power at point of connection: 150 MW Area required: 400 m x 400 m Quantity of hazardous substance: 4500 m <sup>3</sup>
Construction/ labour camp	Construction camp to be constructed for up to 200 people

# 7.1.5 Project location:

The co-ordinates of each PV plant and associated powerline are provided in Table 3.



### Table 3: Project coordinates

PV Plant Identifier	Co-ordinates – PV Plant	Powerline
PV 3 – Venda	NW: 28°42'41.94"S; 21°59'18.97"E NE: 28°42'41.64"S; 21°59'59.23"E SE: 28°43'10.62"S; 21°59'59.50"E SW: 28°43'10.95"S; 21°59'13.07"E	1: 28°44'17.24''S; 21°59'31.02"E 2: 28°44'14.91"S; 21°59'22.10"E 3: 28°44'12.32''S; 21°59'13.30"E 4: 28°44'6.86''S; 21°59'8.72"E 5: 28°43'58.60"S; 21°59'8.85"E 6: 28°43'50.44"S; 21°59'8.61"E 7: 28°43'42.34"S; 21°59'8.67"E 8: 28°43'34.19"S; 21°59'8.65"E 9: 28°43'26.09"S; 21°59'8.43"E 10: 28°43'17.92"S; 21°59'8.43"E 11: 28°43'9.78"S; 21°59'8.43"E 12: 28°43'1.79"S; 21°59'8.32"E 13: 28°42'55.17"S; 21°59'12.85"E
PV 4 – Pedi	NW: 28°42'12.24"S; 21°59'26.32"E NE: 28°42'12.04"S; 21°59'58.93"E SE: 28°42'40.99"S; 21°59'59.22"E SW: 28°42'41.34"S; 21°59'10.94"E	1: 28°42'51.15"\$; 21°59'8.21"E 2: 28°42'42.91"\$; 21°59'7.99"E 3: 28°42'34.83"\$; 21°59'7.93"E 4: 28°42'27.91"\$; 21°59'10.95"E
PV 5 – Afrikaans	NW: 28°42'11.95"S; 22° 0'5.85"E NE: 28°42'11.64"S; 22° 0'46.12"E SE: 28°42'40.63"S; 22° 0'46.39"E SW: 28°42'40.96"S; 21°59'59.96"E	1: 28°42'21.84"S; 21°59'16.86"E 2: 28°42'15.61"S; 21°59'22.65"E 3: 28°42'11.77"S; 21°59'32.00"E 4: 28°42'11.61"S; 21°59'41.11"E 5: 28°42'11.53"S; 21°59'50.28"E 6: 28°42'11.60"S; 21°59'59.36"E 7: 28°42'19.91"S; 21°59'59.49"E 8: 28°42'27.78"S; 22° 0'0.13"E
PV 6 – Sotho	NW: 28°42'11.57"S; 22° 0'52.77"E NE: 28°42'11.29"S; 22° 1'33.02"E SE: 28°42'55.97"S; 22° 1'5.53"E SW: 28°42'56.01"S; 22° 0'47.02"E	1: 28°44'22.74''S; 21°59'50.77"E 2: 28°44'18.56''S; 21°59'57.64"E 3: 28°44'13.94''S; 22° 0'5.32"E 4: 28°44'4.47"S; 22° 0'13.00"E 5: 28°43'51.54"S; 22° 0'17.42"E 6: 28°43'43.50"S; 22° 0'17.25"E 7: 28°43'35.30"S; 22° 0'17.12"E 8: 28°43'27.23"S; 22° 0'17.26"E 9: 28°43'19.14"S; 22° 0'17.02"E 10: 28°43'10.68"S; 22° 0'16.87"E 11: 28°43'10.64"S; 22° 0'26.13"E 12: 28°43'10.58"S; 22° 0'46.96"E 14: 28°43'2.42"S; 22° 0'46.71"E



PV Plant Identifier	Co-ordinates – PV Plant	Powerline
PV 7 – Swati	NW: 28°41'41.92"\$; 22° 0'52.53"E NE: 28°41'41.62"\$; 22° 1'32.99"E SE: 28°42'10.65"\$; 22° 1'33.07"E SW: 28°42'10.97"\$; 22° 0'46.65"E	16: 28°42'46.15"S; 22° 0'46.67"E 17: 28°42'37.97"S; 22° 0'46.74"E 18: 28°42'27.66"S; 22° 0'47.14"E 1: 28°43'57.55"S; 22° 0'18.35"E 2: 28°43'44.35"S; 22° 0'28.87"E 3: 28°43'31.06"S; 22° 0'39.29"E 4: 28°43'17.82"S; 22° 0'49.70"E 5: 28°43'4.40"S; 22° 1'0.30"E 6: 28°42'51.02"S; 22° 1'0.30"E 7: 28°42'37.80"S; 22° 1'10.98"E 7: 28°42'24.34"S; 22° 1'21.48"E 8: 28°42'24.34"S; 22° 1'32.05"E 9: 28°42'10.93"S; 22° 1'31.90"E 10: 28°42'11.11"S; 22° 1'13.46"E
		11: 28°42'11.26"S; 22° 0'55.01"E 12: 28°42'2.37"S; 22° 0'46.33"E 13: 28°41'58.10"S; 22° 0'46.29"E
PV 8 – Zulu	NW: 28°41'42.32"S; 22° 0'5.58"E NE: 28°41'42.03"S; 22° 0'45.81"E SE: 28°42'11.04"S; 22° 0'46.09"E SW: 28°42'11.35"S; 21°59'59.67"E	1: 28°42'9.27"S; 21°59'28.75"E 2: 28°42'3.04"S; 21°59'34.72"E 3: 28°41'56.96"S; 21°59'40.56"E 4: 28°41'50.88"S; 21°59'47.02"E 5: 28°41'45.23"S; 21°59'53.51"E 6: 28°41'44.46"S; 21°59'57.81"E 7: 28°41'52.77"S; 21°59'57.98"E 8: 28°41'57.98"S; 22° 0'0.03"E
PV 9 – Tsonga	NW: 28°41'12.46"S; 22° 0'32.05"E NE: 28°41'12.24"S; 22° 1'4.55"E SE: 28°41'41.21"S; 22° 1'4.84"E SW: 28°41'41.59"S; 22° 0'16.56"E	1: 28°41'38.11"S; 22° 0'1.83"E 2: 28°41'32.24"S; 22° 0'8.25"E 3: 28°41'26.66"S; 22° 0'14.70"E
PV 10 - Tswana	NW: 28°40'52.02"S; 22° 0'54.44"E NE: 28°40'51.77"S; 22° 1'30.95"E SE: 28°41'20.93"S; 22° 1'41.29"E SW: 28°41'11.54"S; 22° 0'46.87"E	1: 28°41'21.00''S; 22° 0'21.29''E 2: 28°41'15.23''S; 22° 0'27.84''E 3: 28°41'9.58''S; 22° 0'34.28''E 4: 28°41'3.77''S; 22° 0'40.88''E 5: 28°40'58.01''S; 22° 0'47.46''E 6: 28°41'1.65''S; 22° 0'48.76''E



### 7.1.6 Preliminary technical specification of the overhead transmission and distribution:

The standard servitude width for a 132kV powerline is 31m with 15.5m on either side from the centre of the line irrespective of the pylon type.

### 7.2 Sub-section 2: Development Footprint Site Map

This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. Once the web-based screening tool identified in regulation 16(1) (v) of the Environmental Impact Assessment Regulations, 2014 is available, the sensitivity map must be prepared from this system. The map is to indicate areas/ features of sensitivity based on the findings of the assessment and illustrated according to four tiers, Very High, High, Medium or Low. The sensitivity map shall also identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features in the surrounding landscape. The overhead transmission and distribution profile shall be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 m of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions shall be used.



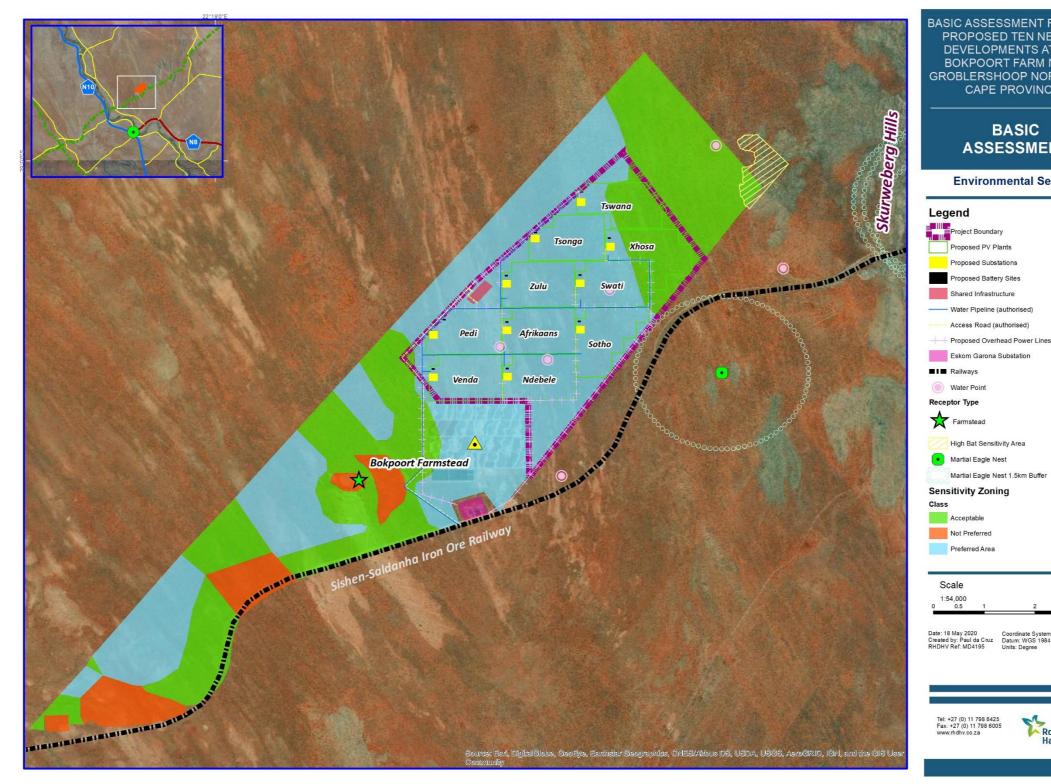


Figure 1: Sensitivity map

BASIC ASSESSMENT FOR THE PROPOSED TEN NEW PV DEVELOPMENTS AT THE BOKPOORT FARM NEAR GROBLERSHOOP NORTHERN CAPE PROVINCE

### BASIC ASSESSMENT

#### **Environmental Senstivity**



1984







### 7.3 Sub-section 3: Declaration

The proponent or applicant or holder of EA affirms that they will abide and comply with the prescribed impact management outcomes and actions as stipulated in part B section 1 of the generic EMPr and have the understanding that the impact management outcomes and actions are legally binding.

Signature Proponent/applicant/ holder of EA

Date: 26 May 2020

he



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 actions must be included in this section. These specific management controls must be referenced spatially, and must include impact management outcomes and actions. The management controls including impact management outcomes and actions must be presented in the format of the pre-approved generic EMPr template. This applies only to additional controls that are necessary. 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.

This section will not be required should the site contain no specific environmental sensitivities or attributes. If Part C is applicable to the site, it is required to be submitted to the competent authority for approval prior to commencement of the activity. Once approved, Part C forms part of the EMPr for the site and is legally binding.



## 8.1 Vegetation Clearing

**Management Outcome:** Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure. All construction work must comply with the conditions of the relevant authorisations, licences and permits.

Impact Management Actions	Imple	mentation	Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
<ul> <li>Prior to site clearance, a detailed 'walkthrough' must be conducted to ascertain the number, abundance and physical conditions of all protected tree species (Acacia erioloba (Camel Thorn), Acacia haematoxylon (Grey Camel Thorn) and Boscia albitrunca (Shepherd's Tree) were observed in the project area) to assist with permit application (DEFF).</li> <li>Prior to site clearance, conduct a detailed 'walkthrough' of the proposed site to ascertain the number, abundance and physical conditions of all protected plant species to assist with permit application (NCDENC).</li> <li>All applications for licences in respect of protected trees must be obtained from the relevant Provincial DEFF/ Northern Cape</li> </ul>	Contractor & cEO Ecologist	Walkthrough DEFF and NCDENC permits	dEO ECO	Once-off	All permits must be filed in the Site Environmental File



**Management Outcome:** Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure. All construction work must comply with the conditions of the relevant authorisations, licences and permits.

Impact Management Actions	Implementation		Monitoring		
	Responsible	Method of	Responsible	Frequency	Evidence of
	Person/s	Implementation	Person		Compliance
Department of Environment and Nature					
Conservation (NCDENC) office.					
Permits for the removal of protected plant					
species must be obtained from NCDENC.					

### 8.2 Protection of Fauna (specifically Avifauna)

Management Outcome: Disturbance to fauna (specifically avifauna) is minimised.						
Impact Management Actions	Implementation		Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
<ul> <li>Prior to construction, an avian specialist must conduct a site walkthrough, covering the final powerline routes to identify any nests/ breeding/ roosting activity of sensitive species, as well as any additional</li> </ul>	Contractor dEO Avian specialist	Walkthrough Training on Red Data avifauna	dEO ECO	Once-off	Walkthrough reports by Avian specialist	
sensitive habitats. The results of which may inform the final construction schedule in		species			Training records	



Management Outcome: Disturbance to fauna (specifically avifauna) is minimised.							
Impact Management Actions	Implen	nentation		Monitoring	ng		
	Responsible	Method of	Responsible	Frequency	Evidence of		
	Person/s	Implementation	Person		Compliance		
close proximity to that specific area,		Implement a					
including abbreviating construction time,		Bird Monitoring			Bird		
scheduling activities around avian		Programme			Monitoring		
breeding and/ or movement schedules,					Reports		
and lowering levels of associated noise.							
• An avian specialist must conduct a site							
walkthrough of the final Grid Connection							
route and pylon positions prior to							
construction to determine if, and where,							
bird flight diverters (BFDs) are required. BFDs							
must be installed as per the instructions of							
the specialist following the site walkthrough,							
which may include the need for modified							
BFDs fitted with solar powered LED lights on							
certain spans.							
The appointed dEO must be trained by an							
avian specialist to identify the potential Red							
Data species as well as the signs that							



Impact Management Actions	Impler	nentation	Monitoring		
		Method of	Deeneneikle	-	Evidence of
	Responsible		Responsible	Frequency	
	Person/s	Implementation	Person		Compliance
indicate possible breeding by these					
species.					
The dEO and ECO must then, during audits/					
site visits, make a concerted effort to look					
out for such breeding activities of Red Data					
species, and such efforts may include the					
training of construction staff (e.g. in Toolbox					
talks) to identify Red Data species, followed					
by regular questioning of staff as to the					
regular whereabouts on site of these					
species.					
• If any of the Red Data species are					
confirmed to be breeding (e.g. if a nest site					
is found), construction activities within 500m					
of the breeding site must cease, and an					
avian specialist must be contacted					
immediately for further assessment of the					
situation and instruction on how to					



Im	pact Management Actions	Impler	nentation		Monitoring	
		Responsible	Method of	Responsible	Frequency	Evidence of
		Person/s	Implementation	Person		Compliance
	proceed.					
•	Any new powerline/ s must be of a design					
	that minimizes electrocution risk by using					
	adequately insulated 'bird friendly'					
	monopole structures, with clearances					
	between live components of 2 m or greater					
	and which provide a safe bird perch. The					
	structures to be constructed must be					
	approved by the Endangered Wildlife					
	Trust's (EWT) Wildlife and Energy Programme					
	or a suitably qualified avian specialist.					
•	A construction phase bird monitoring					
	programme must be implemented by an					
	avian specialist, to document potential					
	impacts on key species such as korhaans,					
	bustards and eagles, and must include the					
	ongoing monitoring of the active					
	Verreaux's Eagle and Martial Eagle nest					



Management Outcome: Disturbance to fauna (specifically avifauna) is minimised.						
Impact Management Actions	Implementation		Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
sites.						
No construction activities or staff are						
permitted within 1.5km of the identified						
Martial Eagle nest buffer.						

# 8.3 Protection of Heritage and Palaeontological Resources

Impact Management Actions	Implementation		Monitoring			
	Responsible	Method of	Responsible	Frequency	Evidence of	
	Person/s	Implementation	Person		Compliance	
All discoveries must be reported immediately						
to a heritage practitioner so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the ECO will advise the necessary actions to be taken. If heritage resources are uncovered during the course of the development, a professional archaeologist	Contractor cEO Archaeologist Palaeontologist	Working within approved areas for construction	dEO & ECO	Once-off	Site inspection	



Management Outcome: Impact to heritage and palaeontological resources is minimised.							
Im	pact Management Actions	Implementation		Monitoring			
		Responsible	Method of	Responsible	Frequency	Evidence of	
		Person/s	Implementation	Person		Compliance	
	or palaeontologist, depending on the nature						
	of the finds, must be contracted as soon as						
	possible to inspect the heritage resource. If						
	the newly discovered heritage resources						
	prove to be of archaeological or						
	palaeontological significance, a Phase 2						
	rescue operation may be required subject to						
	permits issued by SAHRA.						
•	If any evidence of archaeological sites or						
	remains (e.g. remnants of stone-made						
	structures, indigenous ceramics, bones,						
	stone artefacts, ostrich eggshell fragments,						
	charcoal and ash concentrations), fossils or						
	other categories of heritage resources are						
	found during the proposed development,						
	SAHRA APM Unit (Natasha Higgitt/ Phillip						
	Hine 021 462 5402) must be alerted as per						
	section 35(3) of the NHRA. Non-compliance						



Management Outcome: Impact to heritage and palaeontological resources is minimised.

Im	pact Management Actions	Implementation		Monitoring		
		Responsible	Method of	Responsible	Frequency	Evidence of
		Person/s	Implementation	Person		Compliance
	with section of the NHRA is an offense in					
	terms of section 51(1)e of the NHRA and					
	item 5 of the Schedule.					
•	If unmarked human burials are uncovered,					
	the SAHRA Burial Grounds and Graves					
	(BGG) Unit (Thingahangwi Tshivhase/ Mimi					
	Seetelo 012 320 8490), must be alerted					
	immediately as per section 36(6) of the					
	NHRA. Non-compliance with section of the					
	NHRA is an offense in terms of section 51(1)e					
	of the NHRA and item 5 of the Schedule.					