

	PLAN	DISTRIBUTION
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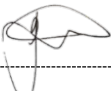
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1. Introduction

This generic Environmental Management Programme (EMPr) is compiled for Category 1 and Category 2 projects as specified by the Standard for Environmental Impact Assessment of Distribution Activities (240-Dx-007T), Standard for Environmental Screening of Distribution Activities (240-Dx-008T) and Eskom Projects Environmental Controls Standard (240-XXXX).

The construction, operational, maintenance and decommissioning of project has potential negative impact on the natural and human environment. The Environmental Management Programme (EMPr) is a plan of action that sets out how activities that could have negative impacts on the environment, will be managed and monitored and how impacted areas will be rehabilitated. This EMPr is compiled to address the potential environmental impacts associated with category 1 and 2 projects within Distribution (Refer to page 5-7 for category 1 and 2 project descriptions). It is compiled in accordance with the requirement of the National Environmental Management Act (NEMA) of 1998 (Act 107 of 1998) and complies with Eskom Safety, Health, Environment and Quality (SHEQ) Policy requirements." Section 28(1) of NEMA (duty of care) requires that every person who causes, has caused, or may cause significant pollution or environmental degradation, shall take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring. Where this cannot be reasonably avoided or stopped, reasonable measures should be taken to minimise or rectify such pollution or environmental degradation."

As part of Eskom's Integrated Environmental Management System (ISO14001), there is a commitment to the development & implementation of an Environmental Management Programme (EMPr) for all Eskom Projects. This document would serve as a guide to Construction and Operations staff (Project Management, Field Services, Major Engineering Works and External Contractors) towards sound environmental practices. Whilst satisfying our customer's needs in the most cost-effective way, due consideration should be given to managing negative environmental impacts identified during the environmental site verification. This is in accordance with and the fulfillment of Eskom's SHEQ Policy [32-727](#) .

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Recommendations are made on management and monitoring of such activities to maximise the benefit and minimise the damage” to the environment and society. The content of this document will also outline the monitoring and management recommendations related to the life cycle of the project to ensure that minimal environmental damage is caused and even avoided.

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

The purpose of this Environmental Management Programme is to provide guidelines for environmental best practice to Project execution, Environmental Officers and Contractors commissioned to construct category 1 and 2 projects (See the tables below). This EMPr shall be seen as part of the contractual documents, and it describes how activities that could have a negative impact on the environment will be managed and monitored and how impacted areas will be rehabilitated. It ultimately has a long-term objective to ensure that a cradle to grave approach is implemented through ensuring that environmental management considerations are implemented throughout the lifespan of the project. It is meant to be read in conjunction with the Standard for Environmental Impact Assessment of Distribution Activities (240-Dx-007T), Standard for Environmental Screening of Distribution Activities (240-Dx-008T) and Eskom Projects Environmental Controls Standard (240-XXXX).

CATEGORY 1 PROJECTS INVOLVE ACTIVITIES THAT DO NOT REQUIRE ENVIRONMENTAL EVALUATION OR SCREENING. THESE PROJECTS MAY PROCEED SUBJECT TO THE CONDITIONS OF THE DX GENERIC (EMPr) ENVIRONMENTAL MANAGEMENT PROGRAMME.

Note: Should any environmental features or sensitivities identified on site, the Land Development Environmental Officer must be notified and to screen for any Environmental Authorisation or permit requirement and come up with appropriate mitigation where required.

Exceptions where no environmental screening required:

- Refurbishment work within substations that do not require an extension of site property, [excluding extending the height of the communication tower or lightening rod which trigger the need for an environmental authorisation or an increase in capacity of the substation] (On condition that an EMPr is implemented for the project)

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- Metering projects
- Regular or routine maintenance and the replacement of inefficient or old plant, equipment or machinery **(on condition that the refurbishment/maintenance does not involve any other listed activity that has a maintenance component that may require a maintenance management plan to be approved by Department of Forestry, Fisheries and Environment (DFFE) for e.g the infilling or removal of soil, rock etc of >10 cubic metres from a watercourse (activity 19 of listing notice 1, 2014 EIA regs as amended) in which case the DFFE approved maintenance management plan for this activity should be applied for.) Should this activity trigger the above listed activity, the project may not proceed, it must be referred to Land Development Environmental Management.**
- Refurbishment work within substations that do not require an extension of the site property boundaries,
- Installation of voltage regulators on existing structures where there are no new poles/structures to be planted
- Projects where the carrying capacity of the receiving environment is not exceeded, e.g. storage of wood poles
- Installation of fibre-optic cables on existing powerlines
- Labelling or Re-labelling of lines
- Mini-substation or Ring Main Units in urban and built-up areas and not within close proximity to environmental features (rivers, wetlands, protected trees, indigenous vegetation, graves, monuments, etc

CATEGORY 2 PROJECTS: PROJECTS THAT OCCUR FREQUENTLY AND ARE NOT NORMALLY CLASSIFIED AS BEING LISTED ACTIVITIES IN TERMS OF EIA LEGISLATION AND HAVE A PREDICTABLE RANGE OF ENVIRONMENTAL IMPACTS.

Note: These projects are to be subjected to environmental screening prior to proceeding. The outcome of the screening process will determine what risks and impacts the activity may have, determine whether permits/ licenses and other compliance obligations are required and recommend mitigation measures that must be implemented to reduce or avoid environmental impact.

The detailed process for environmental screening of Category 2 projects is contained in the Distribution Standard for Environmental Screening (240-Dx-008T).

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CATEGORY 2 PROJECTS INVOLVE THE PLANNING, ACQUISITION OF RIGHTS OF WAY, SURVEY,

DESIGN AND CONSTRUCTION OF:

- **Electrification, minor and major reticulation projects 11kV** and above which may not trigger the thresholds of the listed activities according to the latest NEMA: EIA regulations requiring an environmental authorisation to be applied for.
- **Decommissioning of substations and powerlines up to 132kV** (dependant on the receiving/affected environment and thresholds of activities in the NEMA: EIA listing notices requiring environmental authorisation)
- The **modification, alteration or upgrading of a substation** where the capacity and footprint will not be exceeded.
- **Refurbishment projects where re-routing of infrastructure occurs** outside of the thresholds requiring an environmental authorisation to be applied for
- **Upgrade or rebuilding of powerlines** with no increase in capacity or footprint and does not trigger activities in the NEMA: EIA listing notices requiring environmental authorisation
- **Facilities for storage of hydrocarbon** (petrol, diesel, oil, paraffin) on condition that capacities of such storage containers don't exceed / cross the thresholds outlined in the listing notices
- **Access Roads** that don't trigger the thresholds of the listed activities in the NEMA: EIA listing notices requiring environmental authorisation
- **Mini-substation or Ring Main Units** outside urban areas or within close proximity to environmental features (rivers, wetlands, indigenous vegetation, graves, monuments, etc)
- Sub-transmission **underground cables** in sensitive areas that may not fall under the NEMA: EIA listing notices thresholds
- **Replacing a transformer** without increasing capacity.
- Construction, upgrading or demolition of major oil holding/storage facilities not requiring an environmental authorisation
- **Refurbishment projects on powerlines within the existing servitudes** (on condition that the refurbishment/maintenance does not involve the infilling or removal of soil, rock etc. of >10 cubic metres from a watercourse (activity 19 of listing notice 1, 2014 EIA regulations as amended) in which case the DFFE approved maintenance management plan for this activity should be adhered to)
- **Electrification Low Voltage** (networks below 1000V) connections in an urban, residential, commercial or industrial environment (known as electrification), provided that the feeder line does not trigger other legal requirements identified from the DESD.

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(a) Instructions on how to use the EMPr document

Annexure A automatically applies to all Category 1 projects (refer to page 22) and Annexure B applies to all Category 2 projects (refer page 27). The Environmental Officer must make use of the Annexure B Generic EMPr template to select applicable Environmental aspects and compile the project specific EMPr for Category 2 projects based on that. The Environmental Officer should only keep the applicable EMPr recipient on the EMPr cover page (refer to page 27) and remove the rest. The project specific EMPr will form part of the contractor's scope of work. The declaration must be signed off by the applicable EMPr recipient to acknowledge that they have received the EMPr and that they understand the content of the EMPr. Note that Annexure C applies to both category 1 and category 2 projects.

(b) Communication

The project specific Environmental Management Programme compiled by the Environmental Officer as per the instructions set out in 2.1.1 (a) of this document, must be handed over to the Network Engineering Design along with all other applicable documents from Land Development-Environmental to form part of the final design package that will be made available to Project Execution.

The specific EMPr must be communicated to the project team including the contractor in a form of induction prior to the project construction commencement and must be signed off by all applicable signatories as per annexure B.

2.1.2 Applicability

This Generic Environmental Management Programme is applicable to all Distribution Division and contractors.

2.1.3 Effective date

This plan will be effective from the date of signature.

2.2 Normative/Informative References

Parties using this plan shall apply the most recent edition of the documents listed in the following paragraphs.

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2.2.1 Normative

- [1] 32-727: Safety, Health, Environment and Quality Policy
- [2] Hazardous Substances Act, 1993 (Act 85 of 1993)
- [3] The Constitution of the Republic of South Africa (particularly Section 24 of the Bill of Rights)
- [4] National Environmental Management Act 107 of 1998, as amended
- [5] National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)
- [6] National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003)
- [7] National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004)
- [8] National Environmental Management: Waste Act, 2008 (Act 59 of 2008)
- [9] National Water Act, 1998 (Act 36 of 1998)
- [10] General Authorisation in terms of Section 39 of the national Water Act, 1998 (Act No. 36 of 1998) for Water Uses as defined in Section 21(c) or Section 21(i), General Notice 509 in Government Gazette 40229 dated 26 August 2016.
- [11] Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002)
- [12] Animals Protection Act, 1962 (Act No. 71 of 1962)
- [13] National Road Traffic Act, 1996 (Act No. 93 of 1996)
- [14] National Heritage Resources Act, 1999 (Act No. 25 of 1999)
- [15] Fencing Act, 1963 (Act No. 31 of 1963)
- [16] Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
- [17] National Veld and Forest Fires Act, 1998 (Act No. 101 of 1998)
- [18] Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)
- [19] Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947)
- [20] Standard for Distribution Environmental Project Controls (240-XXXXX), Draft 2022
- [21] Standard for Environmental Screening of Distribution Projects (240-Dx-008T), Draft 2022
- [22] Department of Forestry, Fisheries and the Environment (DFFE) Environmental On-line GIS Screening Tool, 2019
- [23] 32-245: Waste Management Standard
- [24] 32-124: Eskom Fire Risk Management
- [25] 32-123: Emergency Planning
- [26] 32-477: Safety, Health and Environment Training and Development Procedure
- [27] 32-736: Eskom Land and Biodiversity Policy

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[28] 32-95: Environmental Incident Management Procedure

[29] 32-815: Land and Biodiversity Standard

[30] 240-701725/32-247: Vegetation management and maintenance within Eskom Land, servitude and rights of way

[31] WTB003: Management of Protected and Indigenous Vegetation

[32] 240-125346322: Eskom Biodiversity Implementation Plan

[33] 240-163056325: Distribution Project Life Cycle Model and Work Package

[34] Questions and responses relating to relationship between the environmental impact assessment regulations, 2014/ National Appeal Regulations, 2014 and the Protection of Personal Information Act, 2013 (Act no. 14 of 2013)

[35] 32-1034: Eskom Procurement and Supply Chain Management Procedure Rev 4

[36] Process for uploading of files to the Department of Forestry, Fisheries and the Environment – May 2022

This document contains provisions that, through reference in the text, constitute requirements of this plan. At the time of publication, the edition(s) indicated were valid. All standards, specifications and legislation are subject to revision, and parties to agreements based on this EMP are encouraged to investigate the possibility of applying the most recent edition(s) of the document(s) listed above. Information on currently valid national and international standards and specifications can be obtained from the relevant legal register service provider appointed by Eskom at the time.

2.2.1 Informative

Standard for Environmental Impact Assessment of Distribution Activities (240-Dx-007T)

Standard for Environmental Screening of Distribution Activities (240-Dx-008T)

Eskom Projects Environmental Controls Standard (240-XXXX)

2.3 Definitions

Environmental Authority: Statutory body that governs and prescribes the processes that needs to be undertaken for certain construction activities. They are also the decision-making authority granting authorisation for specific projects.

Environmental impact: Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services.

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Environmental Management Programme (EMPr): A plan that guarantees the desired end state of the environment and describes how activities, that could have a negative impact, will be managed and monitored and impacted areas rehabilitated.

Eskom Environmental Officer (EEO): An individual appointed by Eskom to implement and monitor compliance to the EMPr.

Contractor: A person or company appointed by Eskom to carry out stipulated activities.

Environment: Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans and their interactions.

Environmental aspect: Elements of an organization's activities, products or services which can interact with the environment.

Mitigate: The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

Monitoring: An activity which ensures that the requirements of the Environmental Management Programme is met.

Clearing: means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified.

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

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

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

Method statement: means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and Eskom Environmental Officer. The method statement must set out the equipment, materials, labour and method(s) the Contractor propose 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 EEO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification.

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

- Construction procedures.
- Plant, materials and equipment to be used.
- Transporting the equipment to and from site.
- How the plant/ material/ equipment will be moved while on site.
- How and where the plant/ material/ equipment will be stored.
- The containment and handling of leaks or spills of any liquid or solid material that may occur.
- Timing and location of activities.
- Compliance/ non-compliance; and

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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.

2.4 Abbreviations

Abbreviation	Explanation
COW	Clerk of Works
CEO	Contractor Environmental Officer
CPM	Contractor Project Manager
DFFE	Department of Forestry, Fisheries and Environment
DWS	Department of Water and Sanitation
EEO	Eskom Environmental Officer
ECO	Environmental Control Officer
EPM	Eskom Project Manager
ERAP	Emergency Response Action Plan
FPA	Fire Protection Agency
LD	Land Development
OHSA	Occupational Health and Safety Act
PE	Project Execution
PPE	Personal Protective Equipment
SAHRA	South African Heritage Resources Agency
SAPS	South African Police Services
SS	Senior Supervisor

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2.5 Roles and Responsibilities

The professionals which will form part of the project team are the Eskom Project Manager, Network Engineering Designers, Clerk of Works, Eskom Environmental Officer, Contractor Project Manager, Contractor Environmental Officer, Engineering Surveyor, Customer Network Centres and Customer Advisors

Eskom Project Manager (EPM)	Clerk of Works (COW)	Eskom Environmental Officer (EEO)	Contractor Project Manager (CPM)	Contractor Environmental Officer (CEO)	Network Engineering Designers (NED)	Engineering Surveyor (ES)	Customer Advisors (CA)	Customer Network Centres (CNCs)
The Eskom Project Manager is accountable for ensuring compliance with the EMPr.	The COW reports directly to the EPM, oversees site works, liaises with the contractor(s) and the EO.	The EEO will report to the Eskom Project Manager and is responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the EPM and CPM, liaising with the contractor and the landowner, as well as a range of environmental coordination responsibilities.	The CPM 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.	The Contractor should appoint a CEO, who is responsible for the on-site implementation of the EMPr.	NED has the responsibility to ensure that all environmental input is considered and incorporated into the project design, with the aim of minimizing and mitigating possible impacts on the environment	Engineering Surveyor should ensure that all environmental attributes are identified and documented on the survey pack as they appear on a project site	Customer advisors must ensure that they capture environmental attributes that may trigger environmental permits requirements and ensure that such information is shared with EEO	Should the CNC be responsible for executing the project, this EMPr should be complied with

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Eskom Project Manager (EPM)	Clerk of Works (COW)	Eskom Environmental Officer (EEO)	Contractor Project Manager (CPM)	Contractor Environmental Officer (CEO)	Network Engineering Designers (NED)	Engineering Surveyor (ES)	Customer Advisors (CA)	Customer Network Centres (CNCs)
Ensure that Eskom appoint an Environmental Control Officer (ECO) to make sure of the compliance to this EMPr and to applicable legislation.	The COW 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.	Be fully conversant with the EMPr.	Method Statements are implemented as described.	The CEO can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant.				
Eskom Project Manager is further responsible for providing and giving mandate to enable the EO to perform responsibilities and must ensure that the EO is integrated	Ensure that the contractors appoint an Environmental Officer.	Be familiar with the recommendations and mitigation measures of this EMPr and implement these measures.	The CPM must ensure compliance with this EMPr while performing the onsite activities as per the contract with Eskom.	The CPM must ensure that the CEO is suitably qualified / experienced to perform the necessary tasks and able to interact effectively with the EEO and the landowner.				

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Eskom Project Manager (EPM)	Clerk of Works (COW)	Eskom Environmental Officer (EEO)	Contractor Project Manager (CPM)	Contractor Environmental Officer (CEO)	Network Engineering Designers (NED)	Engineering Surveyor (ES)	Customer Advisors (CA)	Customer Network Centres (CNCs)
as part of the project team.								
Ensure that all stipulations within the EMPr are communicated and adhered to by Eskom and its Contractor(s).	Oversees site works, liaison with Contractor, EPM and EO. Must ensure that all landowners have the relevant contact details of the site staff, EEO and CEO.	Ensure that all stipulations within the EMPr are communicated and adhered to by Eskom and Contractor employees.		Be on site throughout the duration of the project and be dedicated to the project.				
Issuing of site instructions to the Contractor for corrective actions required.	Issuing of site instructions to the Contractor for corrective actions required.	Confine the development site to the demarcated area.	Project delivery and quality control for the development services as per appointment.	Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all their activities on site.				

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Eskom Project Manager (EPM)	Clerk of Works (COW)	Eskom Environmental Officer (EEO)	Contractor Project Manager (CPM)	Contractor Environmental Officer (CEO)	Network Engineering Designers (NED)	Engineering Surveyor (ES)	Customer Advisors (CA)	Customer Network Centres (CNCs)
Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings.	Will issue all non-compliances to the contractor and Ratify the Monthly Environmental Report.	Conduct environmental inspections with regards to the EMPr.	Employ a suitably qualified person to monitor and report to Eskom's representative on the daily activities on-site during the construction period.	Implementing the environmental conditions, guidelines and requirements as stipulated within the EMPr and Method Statement.				
Overall management of the project and EMPr implementation.		Assist the contractor in addressing environmental challenges on site.	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	Attend the project progress Meetings.				

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Eskom Project Manager (EPM)	Clerk of Works (COW)	Eskom Environmental Officer (EEO)	Contractor Project Manager (CPM)	Contractor Environmental Officer (CEO)	Network Engineering Designers (NED)	Engineering Surveyor (ES)	Customer Advisors (CA)	Customer Network Centres (CNCs)
			operation to be carried out safely.					
Ensure that periodic environmental inspections are undertaken, and registers kept in accordance with this EMPr.		Report environmental incidents to Eskom and ensuring that corrective action is taken, and lessons learnt shared.	Attend site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones.	Undertaking corrective actions where non-compliances are registered within the stipulated timeframes.				
		Assist the contractor in investigating and managing environmental incidents, and compile investigation reports.	Ensure that contractors' staff 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 EEO.	Report back formally on the completion of corrective actions.				

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Eskom Project Manager (EPM)	Clerk of Works (COW)	Eskom Environmental Officer (EEO)	Contractor Project Manager (CPM)	Contractor Environmental Officer (CEO)	Network Engineering Designers (NED)	Engineering Surveyor (ES)	Customer Advisors (CA)	Customer Network Centres (CNCs)
		Follow-up on pre-warnings, defects, non-conformance reports.		Assist the EEO in maintaining all the site documentation. Prepare the site inspection reports and corrective action reports for submission to the EEO.				
		Measure and communicate environmental performance to the CPM.		Assist the EEO with the preparing of the monthly report.				
		Conduct environmental awareness training on site together with the CEO.						
		Ensure that the necessary legal permits and / or licenses are in place and up to date.						

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2.6 Process for Monitoring

Compliance to this EMPr will be monitored through reviews

2.7 Related/Supporting Documents

Standard for Environmental Impact Assessment of Distribution Activities (240-Dx-007T), Standard for Environmental Screening of Distribution Activities (240-Dx-008T) and Eskom Projects Environmental Controls Standard (240-XXXX).

3. Generic Environmental Management Programme

3.1 Layout of the generic EMPr

The EMPr is divided into 4 phases of development, namely Planning, pre-construction, construction and post construction/rehabilitation. Environmental impacts and mitigation/management actions are identified and outlined according to the project phases. The section for capturing specific conditions forms part of the EMPr document.

3.2 Environmental Documentation

The Environmental Management file should be kept on site and maintained throughout the project lifecycle. The file should consist of the following documents where applicable:

- Environmental Management Programme
- Environmental Induction presentation and attendance registers
- Environmental Incident Log (Diary) and record of corrective actions
- All applicable Environmental permits/licences
- Complaints register
- Minutes of the progress meetings and attendance registers
- Compliance review reports/audits reports
- Appointment letter for environmental representative
- Methods statement
- Waste disposal register

3.3 Generic Environmental Management Plan conditions

Note: Refer to Annexure A: Generic EMPr for Category 1 projects on page 22-26 and Annexure B: Generic EMPr conditions template for Category 2 projects on page 27-54. Annexure C: Chance Find Protocol

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4. Acceptance

This document has been seen and accepted by:

Name	Designation
Brenda Cebekhulu	Distribution Asset Creation Committee Chair
Noxolo Galela	Distribution Land Development Managers Committee Chair
Shamaine Thulasaie	Distribution Environmental Advisory Committee (DEAC) (Represented by the Chair
Angelina Shalang	Distribution Environmental Advisory Committee -Asset creation (DEAC-AC) Chair

5. Revisions

Date	Rev.	Compiler	Remarks
September 2022	00	DEAC Asset Creation workgroup	

6. Development Team

The following members of the Distribution DEAC Asset Creation Working Group were involved in the development of this document:

- Bruce Burger (Central East Cluster)
- Frederick Ludeke (Gemma Cluster)
- Maria Rampjapedi (LimLanga Cluster)
- Marshal Felaar (Cape Costal Cluster)
- Mulalo Muelelwa (Gemma Cluster)
- Rosina Ndou (Gemma Cluster)
- Thabelo Mugwedi (Central East Cluster)

7. Acknowledgements

The contributions of the members of DEAC-AC Workgroup, represented by all Distribution Clusters are acknowledged and greatly valued in the drafting of this Environmental Management Plan

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Appendix A: Generic Environmental Management Programme for Category 1 projects**1. General conditions**

- 1.1** The Eskom project manager or co-ordinator shall be responsible for ensuring that the landowners have been informed before any work is carried out on site. Contractors shall find out if the landowners have been informed before moving onto site.
- 1.2** No fences, gates or locks shall be damaged to obtain access onto a line route. Arrangements shall be made in advance to obtain permission for access.
- 1.3** Use of private roads shall be arranged in advance. Any damage to private roads shall be repaired at the contractor's expense and to the satisfaction of the landowner. This shall be the responsibility of the project manager or co-ordinator.
- 1.4** Gates shall be left as they are found, i.e closed gates shall be kept closed and open gates shall be left open. Gates to adjacent properties or onto public roads shall be closed at all times. Any Eskom gates installed on the line route shall be kept closed and locked except while stringing is taking place. Open gates shall be guarded to prevent animals straying and unauthorised persons and vehicles entering into adjacent camps or properties.
- 1.5** Written permission shall be obtained from landowners before any water is used.
- 1.6** No fires shall be lit on private property. If fires are lit on Eskom's property or in the construction camp, provision shall be made that no accidental fires are started. No firewood shall be collected in the veld.
- 1.7** If activities that can cause a fire are carried out, fire extinguishers shall be available on site and in the construction camp.
- 1.8** No property may be accessed after normal working hours except with the permission of the landowner. Privacy shall be respected at all times.
- 1.9** Eskom's contractors and their employees shall at all times be courteous towards landowners, tenants and the local community.
- 1.10** Eskom's contractors and their employees shall not cause damage to property, crops or animals. Activities that may cause conflict with landowners, tenants, the local work force or the local community shall be avoided. Should conflict arise it shall be immediately reported to the Eskom project manager or co-ordinator.
- 1.11** Vehicles shall be driven at a moderate speed on private roads and stay within the statutory speed limit on public roads.
- 1.12** All movement of vehicles shall take place on the established Eskom servitude road or on private roads as agreed in advance. Keep to existing tracks. No movement shall take place through the veld. Special care shall be taken to prevent excess damage during wet weather.
- 1.13** If any vehicle should get stuck, the damage shall be repaired immediately so that no deep ruts remain.
- 1.14** Any damage to private property shall immediately be reported to Eskom and the owner. The damage shall be rectified immediately if possible and/or appropriate compensation shall be paid to the owner at the discretion of the project manager/co-ordinator in consultation with the property owner. A record of damages and rectifying action shall be kept. The landowner's satisfaction with the outcome of rectifying action shall be obtained in writing.

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- 1.15** A proper system of waste management shall be instituted in the construction camp. This entails that sufficient labelled waste bins are available on site and in the construction camp. The waste shall be disposed at an approved waste disposal site. No containers, scrap metal, conductor etc. shall be left on site.
- All scrap shall be removed and taken to an appropriate disposal site. No oil, diesel or other chemicals shall be spilled or discarded anywhere. If an accidental spill occurs, it shall be reported immediately and cleaned to the satisfaction of Eskom and the landowner. No waste shall be left in the veld or on the line route.
- 1.16** Washing and toilet facilities shall be provided on site and in the construction camp. The facilities shall comply with Eskom standards and shall have the consent of the landowner.
- 1.17** The long drops/pit toilet may be used in cases where mobile toilets are not available. Should all other toilet facilities be inaccessible, human increment shall not be left in the field and shall be buried *immediately*. No human increment shall be left anywhere near a watercourse under any circumstances.
- 1.18** Herbicides shall only be applied with Eskom's permission and in accordance with the Eskom standard on Herbicides **240-125477962**.
- 1.19** Camp and office sites shall be dismantled and removed after completion of the construction phase of the project. The site shall be rehabilitated to as close as possible to its original condition to the satisfaction of the landowner, which shall be in writing.
- 1.20** All excavations shall be enclosed to prevent animals or people from accidentally falling into excavations.
- 1.21** No trees shall be cut or removed without prior permission from the landowner. Permits shall be obtained for the cutting and removal protected trees
- 1.22** Should any natural heritage object be found, or exposed during excavations, all work shall be terminated immediately, and the finding reported to the Project Manager who shall inform the Eskom Environmental Officer and the Heritage Resources Agency. Refer to Annexure C-Chance Find Protocol for further details on how to handle

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TYPICAL MITIGATION MEASURES

ENVIRONMENTAL CONCERNS	MITIGATION MEASURES
AGRICULTURE	
Loss of standing crop due to access road and tower work site.	- limit width of access and size of tower site. - avoidance of crop areas. - monetary compensation for crop loss. - time construction to avoid growing season.
Soil Compaction	- scheduling activities to times of the year when soils are least susceptible to compaction. - stop activities when ground conditions are poor. - use of equipment with low bearing capacity. - chisel ploughing.
Construction of new lines	- where possible locate access roads along existing tracks.
Topsoil – subsoil mixing/soil rutting	- stop activity when ground conditions are poor. - use of equipment with low bearing capacity. - addition of manures to offset fertility loss. - removal of spoil and/or bentonite from foundation operations. - segregation of topsoil and subsoil.
Disturbance to farm operations	- maintain contact with landowner/tenant regarding preferences.
Loss of livestock	- employ noise control measures near sensitive livestock. - construction of farm gates. - securing farm gates. - clean-up construction materials which could be ingested. - compensation for lost injured livestock.
SOCIAL IMPACTS	
Mud and Dust	- wetting down dry soils. - chemical control of dust.

Aesthetics	- screen with natural of planted vegetation restoration. - addition of topsoil to gravel access roads. - clustering construction sites together
Inconvenience	- select route and method of installation to suit landowners' conditions. - select timing of activity.
Heritage	- avoid heritage resources/features

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	- design measures to make facility less obtrusive. - protection by use of enclosures, barrier fencing, covering. - salvage in conjunction with SAHRA. - relocation in conjunction with SAHRA.
Tourism and recreation resources	- design measures to make facility less obtrusive of disruptive. - screening and restoration. - minimise noise and dust. - safety precautions to protect the public. - scheduling to avoid peak use periods.
WATER QUALITY	
Sedimentation of streams due to erosion from the right-of way.	- minimise use of slopes adjacent to streams during soils testing, construction, and maintenance. - maintain a cover crop. - retain buffers.
Stream bank erosion.	- retain shrubby stream bank vegetation and selectively cut or prune trees during line clearing/maintenance. - selective spraying of herbicides.
Impedance of natural flow streams/others surface waters.	- use and maintenance of appropriate stream crossing device.
Contamination of surface or ground waters through spills or leaks of toxic substances.	- spill control material and procedures readily available. - site selection where possible.
Soil compaction/topsoil-subsoil mixing.	- avoidance of rutting by vehicles where possible. - construction timing. - use of gravel roads. - use of vehicles with low bearing pressures. - stop activities when ground conditions are poor.
Wind/water erosion.	- avoidance of areas with high erosion potential. - timing activities to the most stable ground conditions. - slope stabilisation. - mechanical erosion control. - vegetation erosion control. - re-compaction of trenches. - avoid trenching parallel to the fall of a slope.

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Contamination by petrochemicals.	- spill control material and procedures made readily available.
FAUNA & FLORA	
Loss of habitat, breeding and/or food source for terrestrial wildlife.	- environmental mapping to identify sensitive areas. - avoidance of areas containing rare/endangered species. - construction and maintenance activities to be timed where possible to avoid peak breeding periods. - promotion of wildlife habitat through vegetation control. - avoid the filling of small wetlands. - use design with low risk to wildlife electrocution or collision - fit bird flight divertors to powerlines in bird migration areas.
Changes in composition of vegetation as a result of disturbance.	- construction timing to minimise soil disturbance. - restoration of soils to a stable condition.
Removal or burial of stream bottom habitat and increased turbidity due to sedimentation.	- minimise erosion from the right-of-way by maintaining a cover crop. - mechanical erosion control. - minimise stream bank erosion by retaining shrubby bank vegetation and selective cutting, pruning of trees near watercourses. - installation of sediment traps when necessary.
Possible loss of wildlife/fish migration/travel routes.	- avoid filling small wetlands servings as staging areas for waterfowl migration. - Installation and maintenance of a proper stream crossing device. - time construction activities to avoid disturbance to migrating fish and wildlife or during breeding. - Follow Eskom standards for the application of herbicides near watercourses. - Preserve and/or augment existing natural corridor crossings; investigate tower placement to optimise clearances to preserve existing vegetation.

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Annexure B: Generic Environmental Management Programme template for Category 2 Projects



ENVIRONMENTAL MANAGEMENT PROGRAMME

Project title

Project number

Project scope

Compiler details and signature

Engineering Designer

Project execution stakeholder

Project initiator (Customer services)

CNC/MEW/External contractor

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1. Planning phase

Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
Infrastructure Design	Degradation of sensitive areas.	Identified sensitive areas such as ephemeral drainage will be avoided.	Eskom Engineering Designer Eskom EO		
Finalizing tower positions	Land degradation, erosion, disturbance/loss of flora and fauna during pegging/survey.	No vegetation clearing must occur during survey and pegging operations. No new access roads must be developed to facilitate access for survey and pegging purposes. Project manager, EEO and Eskom engineer to agree on final tower positions based on survey within assessed and approved areas.	Eskom Engineer Eskom EO Eskom project manager/COW		
No-go areas	Degradation of sensitive/preserved areas.	Identification of No-Go areas is to be informed by the environmental assessment, site walk through, and any additional areas identified during development.	Eskom Engineering Designer Eskom EO		

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2. Pre-construction phase

Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
Site establishment	Inappropriate site selection may result in damage to the environment/ degradation.	Selection of the proposed site for the construction lay down areas requires permission from Eskom. 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. Sites should be located where possible on previously disturbed areas. The camp must be fenced and the use of existing accommodation for contractor staff, where possible, is encouraged.	Contractor, Eskom Project Coordinator		
Emergency procedure	Failure to identify possible environmental incidents and how to respond to those incidents can result in	Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project. The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation.	Contractor, Eskom Project Manager		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
	environmental pollution.	All staff must be made aware of emergency procedures as part of environmental awareness training.			
Environmental awareness training	Environmental degradation/contravention	All staff must receive environmental awareness training prior to commencement of the activities. The training must also outline the requirements of the EMPr as a management tool for the protection of the environment.	Contractor, Eskom Project Coordinator, EEO		
Fire prevention	Veld fire resulting in loss of habitat, flora and fauna.	Designate smoking areas where the fire hazard could be regarded as insignificant.	Contractor		
No-go areas	Degradation of sensitive/preserved areas	Demarcate No-Go areas by whatever means as authorised by EEO	Eskom EO Contractor		
Water Supply Management	Responsible water management practices	Obtain approval from local municipality / water user association for supply of water required during construction.	Construction Team		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
Protection of Water Resources	Erosion, Sedimentation, Water pollution	Eskom Environmental resources should be consulted to screen project area and identify water courses. Eskom Environmental staff will indicate whether any statutory requirements is needed for the proposed activities. The new footprint and the area of disturbance should be limited as far as possible to those areas already disturbed. In this regard the preferred alternative would have the lesser impact as much of the proposed activities will be located within previously cultivated lands.	Eskom EO & Project Team		
Site clearance (Vegetation Clearing)	Degradation of sensitive areas/Loss of Habitat.	Restrict vegetation clearing to the development footprint. Protected and or endangered vegetation species must be identified and left untouched where possible. Where practically possible relocated/transplant protected and or endangered vegetation species instead of clearing it.	Eskom Engineering Designer Eskom EO		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		Permits for the removal of protected vegetation must be obtained from the relevant competent authority (CA) before any vegetation clearing can start (permits should always be available on site). Records of vegetation clearing should be kept e.g., number of protected trees cut. Debris from vegetation clearing should be kept out of rivers and watercourses. 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. A register must be kept of all relevant details of herbicide usage. Protected or sensitive vegetation identified and not removed during the clearing activity should be marked as No-Go areas and all staff on site should be made aware of them.			

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
Stormwater Management	Minimize loss of topsoil and enhancement of erosion	Design stormwater infrastructure so that stormwater is kept separate from contaminated water and bunded areas Design the drainage systems (of stormwater infrastructure, trenches, drains and outlets) to encourage dissipation of water, decreasing velocity of water and prevent erosion, ponding and flooding of the site and surrounding environment.			
Access route/haul roads	Degradation on the environment	Planning of any new access routes must be done in conjunction with the Eskom and the relevant landowner. No unauthorized access is permitted. Any authorized clearing for access roads must be done with approval of the Eskom Environmental Department/Unit. Any damage or degradation will be investigated, the affected areas must be immediately rehabilitated. No damage, whether accidental or deliberate, to natural areas should result from vehicles driving through them.	All Eskom staff and contractors		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		Speed limits of 20 km/h shall be enforced on project site All roads shall be repaired to their current state prior to construction, upon completion of the project. Existing roads and services must be utilized as far as possible. No driving off from the marked roads is permitted and designated parking areas must be identified and demarcated with applicable signage. Any work or access near or in a permanent drainage system may have implications in terms of the National Water Act, 1998 (Act No. 36 of 1998), and therefore may well require application for a Water Use license.			

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3. Construction phase

Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
Blasting	Vibration from blasting works cause disturbance or damage to structures and leads to community complaints.	Any blasting activity must be conducted by a suitably licensed blasting contractor; and Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	Contractor		
Noise	Disturbance of neighbours and damage to employee hearing.	Operating hours must be limited to daylight. Provide and ensure that employee wear appropriate PPE. Maintain the construction equipment.	Contractor		
Fire prevention	Veld fire resulting in loss of habitat, flora and fauna.	Firefighting equipment must be available on all vehicles located on site. The local Fire Protection Agency (FPA) must be informed of construction activities.	Eskom EO Contractor		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site.			
Stockpiling and stockpile areas	Improper stockpiling of topsoil and the loss of valuable topsoil.	All material that is excavated during the project construction phase must be stored appropriately on site. All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods. Stockpiles must not exceed 2 m in height. Erosion control measures such as placing sandbags at the bases of the stockpile or covering the stockpile with a cloth or tarpaulin should be implemented.	Contractor		
No-go areas	Degradation of sensitive/preserved areas.	Unauthorised access and development related activity inside No-Go areas is prohibited.	Contractor		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
Emergency procedure	Failure to identify possible environmental incidents and how to respond to those incidents can result in environmental pollution.	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.	Contractor		
Hazardous substance	Improper handling, storage and disposal of hazardous chemicals can lead to environmental pollution and lead to legal contravention and non-compliances.	The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible. All hazardous substances will be stored in suitable containers as defined in the Method Statement. Containers will be clearly marked to indicate contents, quantities and safety requirements. All storage areas will be bunded. All hazardous chemicals that will be used on site will have Material Safety Data Sheets (MSDS).	Contractor		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		All employees working with Hazardous Chemical Substance will be trained in the safe use and potential impacts of the substance and according to the safety data sheet and follow appropriate safety measures. The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowzers. No unauthorised access into the hazardous substance storage areas shall be permitted. No smoking must be allowed within the vicinity of the hazardous storage areas. An appropriately sized spill kit must be available at all times and the responsible operator must have the required training to make use of the spill kit in emergency situations. Hazardous waste should not be stored on site for more than 90 days			

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
Workshop, equipment maintenance and storage	Incorrect storage of material on site can lead to poor housekeeping, spillage and litter to the environment.	Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area. During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. Leaking equipment must be repaired immediately or be removed from site to facilitate repair. Workshop areas must be monitored for oil and fuel spills. Appropriately sized spill kit place must be available. The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil Water drainage from the workshop must be contained and managed appropriately.	Contractor		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
Batching plants	Incorrect handling of cement product may lead to spillages, soil, surface and ground water contamination.	Concrete mixing must be carried out on an impermeable surface (such as on boards and/or within a bunded area with an impermeable surface. Concrete mixing areas must be fitted with a containment facility for the collection of cement laden water. This facility must be impervious to prevent soil and groundwater contamination. Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains. A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted. Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licenced disposal facility. Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site.	Contractor		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		Sand and aggregates containing cement must be kept damp to prevent the generation of dust. Any excess sand, stone and cement must be removed from site or reused on completion of construction period and disposed at a registered disposal facility. temporary fencing must be erected around batching plants.			
Dust emission	Air pollution due to dust generated by vehicle used on construction site.	Take all reasonable measures to minimise the generation of dust. Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re-vegetated or stabilised as soon as is practically possible. Vehicle speeds must not exceed 20km/h along dust roads when traversing unconsolidated and non-vegetated areas. Appropriate dust suppression measures must be used when dust generation is unavoidable, e.g., dampening with water, etc.	Contractor		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		employees must be issued with appropriate PPE to deal with dust impact.			
Vegetation clearing	Degradation of sensitive areas/Loss of Habitat.	Restrict vegetation clearing to the development footprint. Protected and or endangered vegetation species must be identified and left untouched where possible. Where practically possible relocated/transplant protected and or endangered vegetation species instead of clearing it. Permits for the removal of protected vegetation must be obtained from the relevant competent authority (CA) before any vegetation clearing can start (permits should always be available on site). Records of vegetation clearing should be kept e.g., number of protected trees cut.	Eskom Engineering Designer Eskom EO		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		Debris from vegetation clearing should be kept out of rivers and watercourses. 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. A register must be kept of all relevant details of herbicide usage. Protected or sensitive vegetation identified and not removed during the clearing activity should be mark as No-Go areas and all staff on site should be made aware of them.			
Vegetation Clearing in or near any watercourse or wetland	Degradation of sensitive areas/Loss of Habitat.	Only vegetation growing high enough to cause interference with the overhead infrastructure, could cause a fire hazard or restrict access should be trimmed or cut. When clearing for access restrict clearing to what is absolutely necessary.	Eskom Engineering Designer Eskom EO		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		Alien invasive vegetation should be removed according to the Eskom, Monitoring, Control and Eradication Plan for Invasive Species on Eskom Land (ENV16-R175) and disposed of at a recognized waste disposal facility. Vegetation should be trimmed to maintain safe clearance distances. Debris resulting from clearing and pruning must be disposed of at a recognized waste disposal facility unless the landowners wish to retain the cut vegetation.			
Protection of fauna	Loss/theft of animals.	No interference with livestock or any animals is allowed on site. Breeding sites of vulnerable and or endangered birds must be kept intact and disturbance to breeding birds must be avoided. Bird guards and diverters must be installed where there is a high risk of collisions and electrocution of birds.	Eskom EO Contractor Site Supervisor Contractor EO		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		No poaching/hunting will be tolerated under any circumstances.			
Protection of heritage	Loss or damage to heritage.	Identify, demarcate as No-Go areas and prevent impact to all known sensitive heritage features on site. All work must cease immediately in the vicinity of the find, if any human remains and/or other archaeological, paleontological and historical material are uncovered. Such material, if exposed, must be reported to the site supervisor or environmental officer for them to report it to the relevant authorities. Sufficient time should be allowed to remove/collect such material before development recommences.	Eskom EO Contractor Site Supervisor Contractor EO		
Safety of the public	Injury or harm of members of the public.	Identify fire hazards, demarcate and restrict public access to these areas. All unattended open excavations must be adequately fenced or demarcated. Measures must be in place to restrict and prevent members of the	Contractor Site Supervisor Contractor SHE Officer		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		public climbing partly constructed towers. Ensure structures vulnerable to high winds are secured. Maintain an incidents and complaints register.			
Sanitation	Disease/Pollution	Have mobile chemical toilets available on site if no other ablution facilities are available. The use of ablution facilities and or mobile toilets must be always used and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances. Chemical toilets should not be located closer than 100 m to any watercourse or water body. Mobile Chemical toilets should be secured to the ground to prevent them toppling over. Ensure that no spillage occurs when chemical toilets are cleaned.	Contractor Site Supervisor Contractor EO		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		Chemical toilets should be emptied before long weekends and workers holidays and must be locked after working hours. Chemical toilets should be service regularly. Copies of the waste disposal certificates must be maintained. One chemical Toilet should be provided for every ten employees on site (1:10).			
Prevention of disease	Disease	Undertake environmentally friendly pest control in the camp area. Medical support must be made available on site. Ensure hand washing facilities at chemical toilets are available.	Contractor Site Supervisor Contractor SHE Officer		
Installation of foundations	Degradation of sensitive area. Pollution	With reference to the OHSA 85 of 1993, the Hazardous substances Act and the Eskom waste management standard (EPC 32-245), cement mixing only take place within a designated bunded area.			

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		Ready mixed concrete must be utilized where possible. No vehicle that transports concrete to the construction site must be washed on site. Cement contaminated water must not enter the water system as this disturbs the natural acidity of the soil and ultimately affects plant growth. Cement mixing on site must take place on an impermeable surface. The contractor is responsible to ensure that the cement bags are disposed of at a registered land fill site for hazardous substances			
Stringing	Degradation of surrounding environment.	The winch, tensioner station and any kind of vehicle used must be equipped with drip trays to contain any fuel, hydraulic fuel or oil spills and leaks. Re-fueling of the winch and tensioner stations must be undertaken away from site, this also	Contractor EEO Eskom Project Manager		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		applies if vehicles are used for pulling of the conductor/cable. Alternative methods of stringing which limit impact to the environment must always be considered e.g., by hand 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.			
Water management	Water pollution, impeding the natural flow of water Scarring of the soil surface and land features Damage to river and stream embankments	Increased run-off during construction must be managed using berms and other suitable structures as required to ensure flow velocities are reduced; this must be done in consultation with the Construction/Maintenance and Eskom Environmental representative. Storm water, wherever possible, should be	Eskom Staff and contractors		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
	Erosion and siltation of rivers and streams Damage to seasonally wet habitats	allowed to soak into the land in the area on which the water fell. In the event of pollution caused by construction activities, the Contractor, according to section 20 of the National Water Act, 1998 (Act No. 36 of 1998) is responsible for all costs incurred by organizations called to assist in pollution control and/or to clean up polluted areas. The Contractor must ensure that excessive quantities of sand, silt and silt-laden water do not enter the storm water system or pan areas. Appropriate measures, e.g., erection of silt traps, or drainage retention areas to prevent silt and sand entering drainage or watercourses must be taken. Approval must be obtained from DWS for any activities that require authorization in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998). It must be ensured that all equipment to be used is not the cause of irreparable damage to wet			

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		areas. The contractor must, where required, use alternative methods of construction in such areas.			
Fencing and gate installation	Environmental degradation	Where the Eskom infrastructure have impact on inhabited areas, the necessary precautions according to the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) shall be incorporated by the Contractor to safeguard the lives & property of inhabitants. No damage or tampering with existing services in the area is permitted. All pipelines shall be clearly marked and protected. Any damage to pipelines shall be repaired immediately.	Eskom staff and contractors		

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4. Post construction/Rehabilitation

Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
Noise pollution	Disturbance of neighbours and damage to employee hearing.	Operating hours must be limited to daylight. Provide and ensure that employee wear appropriate PPE. Maintain the construction equipment.	Contractor		
Fire prevention	Veld fire resulting in loss of habitat, flora and fauna.	Firefighting equipment must be available on all vehicles located on site. Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site.	Eskom EO Contractor		
Stockpile areas	Improper stockpiling of topsoil and the loss of valuable topsoil	The topsoil should be used during rehabilitation. All stockpiles to be cleared on site.	Contractor		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
No-go areas	Degradation of sensitive/preserved areas	Permanent site notice board must be erected to show a no-go area during operational phase.	Contractor Eskom EO		
Landscaping and rehabilitation		All areas disturbed by construction activities must be subject to landscaping and rehabilitation. All waste must be disposed at a registered disposal waste site and certificates of disposal should be provided. Topsoil must be stockpiled, covered to reduce the risk of erosion and re-used for rehabilitation. Indigenous species will be used for revegetation Stockpiled topsoil will be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed. Subsoil must be ripped before topsoil is placed.	Contractor		

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Environmental Aspects	Environmental Impacts	Mitigation/Management actions	Responsibility	Compliance status	Comments
		The project must be timed so that rehabilitation can take place at the optimal time for vegetation establishment			
Temporary closure of site		Hazardous storage areas must be well ventilated Fire extinguishers must be serviced and accessible. Emergency and contact details displayed must be displayed Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel Fire hazards identified and the local authority must have been notified of any potential threats	Contractor		

5. Operational and maintenance Phase

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Refer to Generic Environmental Management Programme for Operation and Maintenance standard, document identifier **240-71555378** for comprehensive management actions required to mitigate environmental aspects during the operation and maintenance phase of the projects.

6. Specific conditions (Site specific issues identified during the screening process that requires attention such as permits requirements, bird flappers, erosion berm)

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Appendix C: Chance Find Protocol

Monitoring Programme for Palaeontology – to commence once the excavations / drilling activities begin.

1. The following procedure is only required if fossils are seen on the surface and when drilling/excavations commence.
2. When excavations begin the rocks and must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (plants, insects, bone, coal) should be put aside in a suitably protected place. This way the project activities will not be interrupted.
3. Photographs of similar fossils must be provided to the developer to assist in recognizing the fossil plants, vertebrates, invertebrates or trace fossils in the shales and mudstones. This information will be built into the EMP's training and awareness plan and procedures.
4. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.
5. If there is any possible fossil material found by the developer/environmental officer then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible.
6. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued, and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.
7. If no good fossil material is recovered then no site inspections by the palaeontologist will be necessary. A final report by the palaeontologist must be sent to SAHRA once the project has been completed and only if there are fossils.
8. If no fossils are found and the excavations have finished then no further monitoring is required.

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