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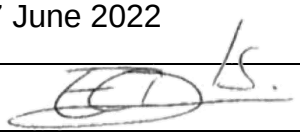
FREE STATE OPERATING UNIT
LAND DEVELOPMENT
ENVIRONMENTAL MANAGEMENT

GENERIC ENVIRONMENTAL MANAGEMENT PLAN (EMP) FOR THABA NCHU TRUSTS ELECTRIFICATION

Report Date: 07.06.2022

Environmental Officer:	Earl Daniels 051 404 5759 0736263503 danielec@eskom.co.za
Project Name:	Job: **Thaba nchu trusts electrification**
Project Number:	**FS-EBC-2608-604250-0001**
Scope of work:	Job ID: **FS-EBC-1303-306431-0001** SCOPE OF WORK 1) Build MV and LV to connect 174 stands 2) Install transformer(s) per trust 3) Install 20 amp meter per household Thaba Nchu Trusts 174 stands Electrification Primary Plant 1) Construct MV and LV network within 6 different trusts. 2) Connect stands to network within 6 different trusts.
Property Name:	Paradys, Merino, Ratabane, Thubisi, Middeldeel, Maraisdal
Landowner:	Tribunal land
Local Municipality:	Mangaung Metro Local Municipality
EMP handover Date:	07 June 2022
Signature	

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1. ACRONYMS

EMP	Environmental Management Plan
EO	Environmental Officer
DWS	Department of Water Affairs and Sanitation
DEFF	Department of Environmental Affairs, Forestry and Fishery
SAHRA	South African Heritage Resources Agency
PPE	Personal Protective Equipment
OHSA	Occupational Health and Safety Act
SAPS	South African Police Services
DALRRD	Department of Agriculture, Land reform and Rural development
PM	Project Manager
PC	Project Co-ordinator
LD&E	Land development and Environmental management
SS	Senior Supervisor

2. GLOSSARY

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 organisation's activities, products or services.
Environmental Management Plan (EMP): a programme that developed to reach 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: An individual appointed by Eskom to implement and monitor compliance to the EMP
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 Issues (Aspect): Elements of an organisation'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 Plan is met

3. DEFINITIONS

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

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

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

”contractor” - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management 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 EMP or a request by the Project Manager and EEO. 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 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
- Any other information deemed necessary by the Project Manager.

“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;

4. Introduction

As part of Eskom's strategy to protect the environment through the sustainable management of its activities, it is required that an Environmental Management System (EMS) be developed and implemented. Part and parcel of the EMS is the development and implementation of environmental management programmes (EMPs) according to EPC 32-248. These programmes are essentially plans of action which outline how activities that have the potential to have negative impacts on the environment will be managed and monitored as well as how areas that were affected will be rehabilitated.

This particular Environmental Management Plan (EMP) is aimed at identifying negative environmental activities and any proposed management, mitigation, protection or remedial measures that will be undertaken to address the environmental impacts that have been identified with regards to activities associated with the **electrification of Thaba nchu trusts** as per Section 24N (2) of National Environmental Management Act 107 of 1998 on integrated environmental management. **This EMP must form part of the contractual agreement between Eskom and the contractor.**

Recommendations are made on management and monitoring of such activities in order 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's activities in order to ensure that minimal environmental damage is caused and even avoided.

5. Scope of EMP

The development of the Environmental Management Programme is in accordance with the Eskom EMP procedure EPC 32-248. In reference to it, EMPs developed and implemented need to take into consideration all significant environmental issues and they are to be included in the document.

The scope of this Environmental Management Plan (EMP) for a township electrification project and is to give **guidelines for environmental best practice**, to the contractor commissioned to construct the proposed infrastructure for electrification purposes. This EMP document should be regarded as part of the contract. This EMP will ensure that all proposed infrastructure is environmentally correct and effectively constructed.

Furthermore, an EMP must be carried out in terms of the relevant line division's Environmental Management System. This is applicable to all of Eskom's future and present servitudes as well as to projects for which an environmental impact assessment (EIA) or environmental screening was done.

This EMP ultimately has a long term objective to ensure that this project is approached with a cradle to the grave perspective and will be followed throughout the full life cycle of the project.

The Environmental Management Programme Procedure EPC 32-248 complies with national environmental legislation such as the National Environmental Management Act (NEMA) act 107 of 1998 under which the provision for EMPs is made in Section 11: Environmental Implementation Plans and Management Plans. In compliance with the above mentioned requirements, an EMP had to be developed for the **electrification of Thaba nchu trusts.**

6. EMP Objectives

The EMP aims to establish the following:

A process to identify existing or to predict potential negative environmental impacts resulting from the **electrification of Thaba nchu trusts** ;

Objectives and targets are set to ensure negative impacts are mitigated and existing impacts rehabilitated;

Resources and responsibilities are allocated to each target; and

Actions are implemented to mitigate the identified negative environmental impacts; and Monitoring programmes are developed to track the actions that have been implemented so as to ensure the effectiveness of the action.

7. EMP Compliance

The following are required for compliance with the EMP:

Environmental training to be given to all resources working on project to understand what the possibly environmental impacts will be. This training to be given by the contractor to their employees.

An Environmental register is to be kept on site at all times.

The EMP must be available at all times on the construction site.

8. Project Responsibilities

The effective implementation of this EMP is dependent on established of clear roles, responsibilities and reporting lines within an institutional framework. This section of the EMP gives guidance to the various environmental roles and responsibilities and reporting lines. The Eskom Project Manager is responsible for ensuring that the duties indicated in this document for action by the Environmental Officer are undertaken.

Table 1: Roles and responsibilities for implementation of the EMP Responsible Person(s)	Role and Responsibilities
Eskom Project Manager (EPM)	**Role:** The Eskom Project Manager is accountable for ensuring compliance with the EMP. Ensure that Eskom appoint an Environmental Control Officer (ECO) to make sure of the compliance to this EMP and to applicable legislation. Eskom is further responsible for providing and giving mandate to enable the EO to perform responsibilities, and must ensure that the EO is integrated as part of the project team. **Responsibilities** - Ensure that all stipulations within the EMP are communicated and adhered to by Eskom and its Contractor(s); - Issuing of site instructions to the Contractor for corrective actions required; - Monitor the implementation of the EMP throughout the project by means of site inspections and meetings. Overall management of the project and EMP implementation; and - Ensure that periodic environmental inspections are undertaken and registers kept in accordance with this EMP.

Table 1: Roles and responsibilities for implementation of the EMP Responsible Person(s)	Role and Responsibilities
Eskom Site Supervisor/ Clerk of Works (COW)	**Role:** The COW reports directly to the EPM, oversees site works, liaises with the contractor(s) and the EO. The COW is responsible for the day to day implementation of the EMP and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMP. **Responsibilities** - Ensure that the contractors appoint an Environmental Officer; - Oversees site works, liaison with Contractor, EPM and EEO; - Must ensure that all landowners have the relevant contact details of the site staff, EEO and CEO; - Issuing of site instructions to the Contractor for corrective actions required; - Will issue all non-compliances to the contractor; and - Ratify the Monthly Environmental Report.
Contractor Project Manager (CPM)	**Role** 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 EMP. Method Statements are implemented as described. The CPM must ensure compliance with this EMP while performing the onsite activities as per the contract with Eskom. The CPM is required, where specified, to provide an Environmental Management Plan setting out in detail how the impact management actions contained in this EMPR will be

Table 1: Roles and responsibilities for implementation of the EMP Responsible Person(s)	Role and Responsibilities
	implemented during construction of the electrification network. **Responsibilities** - Project delivery and quality control for the development services as per appointment; - Employ a suitably qualified person to monitor and report to Eskom's representative on the daily activities on-site during the construction period; - Ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely; - Attend site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones; - Ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMP, to the satisfaction of the EEO.
Eskom Environmental Officer (EEO)	**Role** The EEO will report to the EPM via the Eskom Project Manager and is responsible for implementation of the EMP, 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.

Table 1: Roles and responsibilities for implementation of the EMP Responsible Person(s)	Role and Responsibilities
	Responsibilities - Be fully conversant with the EMP; - Be familiar with the recommendations and mitigation measures of this EMP, and implement these measures; - Ensure that all stipulations within the EMPR are communicated and adhered to by Eskom and Contractor Employees; - Confine the development site to the demarcated area; - Conduct environmental inspections with regards to the EMP; - Assist the contractor in addressing environmental challenges on site; - Report environmental incidents to Eskom and ensuring that corrective action is taken, and lessons learnt shared; - Assist the contractor in investigating and managing environmental incidents, and compile investigation reports; - Follow-up on pre-warnings, defects, non-conformance reports; - Measure and communicate environmental performance to the CPM; - 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.

Table 1: Roles and responsibilities for implementation of the EMP Responsible Person(s)	Role and Responsibilities
Contractor Environmental Officer (CEO)	**Role** The Contractor should appoint a CEO, who is responsible for the on-site implementation of the EMP. The CEO can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. 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 land owner. As a minimum the CEO shall meet the following criteria: **Responsibilities** - Be on site throughout the duration of the project and be dedicated to the project; - Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site; - Implementing the environmental conditions, guidelines and requirements as stipulated within the EMP and Method Statement; - Attend the project progress Meetings; - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; - Report back formally on the completion of corrective actions; - Assist the EEO in maintaining all the site documentation; - Prepare the site inspection reports and corrective action reports for submission to the EEO; - Assist the EEO with the preparing of the monthly report.

9. Environmental legislation framework

LEGISLATION	SECTION	RELATES TO
The constitution of South Africa	Chapter 2 Section 24 Section 25	• Bill of Rights • Environmental rights • Rights in property
National Environmental Management Act No. 107 of 1998 (NEMA)	Section 2 Section 24 (a), (d) & (5) Section 28	• Defines the strategic environmental management goals and objectives of the government. Applies throughout the Republic to the actions of all organs of state that may affect the environment detrimentally. • Listed activities and Regulations • The developer has a general duty of care for the environment and to institute such measures as needs be to demonstrate duty of care
Conservation of Agricultural Resources Act No. 43 of 1983	Section 6	• Implementation of control measures for alien and invasive plant species
National Heritage Resources Act No. 25 of 1999	The general principles for governing heritage resources in South Africa.	• Provides general principles for governing heritage resources management throughout South Africa including national and provincial heritage sites, burial grounds and graves; archaeological and palaeontological sites, and public monuments and memorials.
National Water Act No. 36 of 1998	Section 14 Section 19 Section 21	• Water pollution prevention and regulation of water uses
National Environmental Management Air Quality Act No. 39 of 2004	Sections 26-27 Section 32	• Control of fuels • Control of dust

LEGISLATION	SECTION	RELATES TO
Occupational Health and Safety Act No. 85 of 1993	Section 8 Section 9 Section 14 Section 24	• General duties of employers to their employees. • General duties of employers and self-employed persons to persons other than their employees. • General duties of employees at work • Reporting of incidents
Noise control regulations of Environmental Conservation Act No. 73 of 1989	Section 25	• Control of Noise
National Forest Act No. 84 of 1998	Section 15	• Declaration of protected trees
Hazardous Substances Act		•
Fencing Act 31 of 1963	Sections 17 Section 22	• Any person erecting a boundary fence may clean any bush along the line of the fence up to 1.5 metres on each side thereof and remove any tree standing in the immediate line of the fence • Any person who opens and leaves a gate open or unfastened or finding a gate open on passing through, neglects to shut and fasten a gate shall be guilty of an offence and liable for conviction.
National Roads Act 54 of 1971	Section 16	• Prohibits the dumping of material on or near a national road
National Environmental Management: Biodiversity Act 10 of 2004		• Provides for the provisions of the protection of South African flora, fauna and microorganisms.

10. Eskom Policies and Procedures

PROCEDURES	DESCRIPTION
EPL 32-727	SHEQ POLICY
EPL 32-97	LAND MANAGEMENT POLICY
EPL 32-114	ESKOM SPOKESPERSON POLICY
EPL 32-1163	ESKOM WATER MANAGEMENT POLICY
STANDARDS	
SANS ISO 14001:2015	ENVIRONMENTAL MANAGEMENT SYSTEMS-REQUIREMENTS WITH GUIDENCE FOR USE
SANS ISO 9001:2015	QUALITY MANAGEMENT SYSTEM
41-120	ESKOM REQUIREMENTS FOR PROCUREMENT OF ASSETS, GOODS AND SERVICES
GUIDELINES	
EGL 32-273	GUIDELINE FOR THE REHABILITATION AND VEGETATION MANAGEMENT OF HERBICIDE TREATED SITES
ADDENDUM 1	GUIDENCE ON OFF-SETS: APPROACH OF DAA FORESTRY REGARDING OFF-SETS AS CONDITION FOR THE LICENCING OF DESTRUCTION OF PROTECTED TREES AND NATURAL FORESTS
PROCEDURES	
EPL 32-6	PROCEDURE FOR DOCUMENTS AND RECORDS MANAGEMENT
EPC 32-644	ESKOM DOCUMENTATION MANAGEMENT STANDARD
240-53464409	CORRECTIVE AND PREVENTATIVE ACTION PROCEDURE

EPC 32-245	WASTE MANAGEMENT PROCEDURE
EPC 32-247	BUSH CLEARING AND MAINTENANCE WITHIN OVERHEAD POWER LINE SERVITUDES
EPC 32-248	EMP GUIDELINE
EPC 32-246	REPORTING ON ENVIROINMENTAL EXPENDITURE
240-44175038	CONTROL OF NON-CONFORMING PRODUCTS OR SERVICE PROCEDURE
342-2	DISTRIBUTION PROCEDURE FOR THE HANDLING OF NON-CONFORMANCE
TECHNICAL BULLETIN	
02TB 023	COVERING OF JUMPERS ON MV AUXILIARY STRUCTURES
03TB-026	VULTURE ELECTROCUTION RISK AREAS
10TB-017	HV INSULATION COVER APPLICATION FOR EXISTING DISTRIBUTION TOWERS (44-88Kv)

11. Environmental Documentation, Reporting and Compliance tools

To ensure accountability and demonstrated implementation of the EMP, a suitable reporting system with documentation controls and compliance mechanisms must be in place for the electrification project as a minimum requirement.

Document control/Filing system

The EEO is responsible for the upkeep and management of the EMP file. In accordance with appropriate environmental care, the main EMP file can be in electronic format, but hard copies of all documents must be made available when required.

As a minimum, all documentation detailed below will be stored in the EMP file. Hard copy documentation generated on site shall be filed both electronically and as hard copies. A duplicate electronic EMP file must be retained off-site. The filing system must be kept updated and relevant documents added as required. The EMP files must be readily accessible when required and made available for any environmental audits undertaken by Eskom or any state organ.

PERMISSIONS AND AGREEMENTS	
Notification of commencement to landowner	Through ward councillor and municipality
Permission to use municipal land fill site	Proof as letter or email
Agreement for septic toilet service	Contract as proof
Permission to use water on the project	Letter or email from municipality/ contract with service provider/ proof of purchase
Permission to use Gravel material	Contract/ proof of purchase from provider
OPERATIONAL CONTROL DOCUMENTS: The following preliminary list of documents shall be placed in the filing system prior to commencement of construction	
Eskom EMP	Proof of copy in Environmental file
Contractor EMP	Proof of copy in Environmental file
Waste management plan	Proof of copy in Environmental file

Contractor Environmental emergency procedure	Proof of copy in Environmental file
Contractor construction method statements	Proof of copies in the Project file
Contractor Health and Safety Plan	Proof of copy in the safety file.
MONITORING TOOLS	
Waste disposal register	Proof of copy in Environmental file
Incident register	Proof of copy in Environmental file
Complaints register	Proof of copy in Environmental file
Material Safety Data Sheet (MSDS)	Proof of copy in Environmental file
PROOF OF ENVIRONMENTAL COMPLIANCE	
Proof of waste disposal including COVID19 waste if applicable	Waste slips/ GPS coordinate and date stamped photos on disposal
Proof of toilet waste disposal	Service slips
Proof of legal disposal facility	Proof that toilet waste is being disposed of at legal registered, general and hazardous facility
Drip trays under all fuel containing vehicles and equipment on site and at the site camp	Physical visible proof on site
No defective fuel dripping vehicles and equipment on site	Vehicle and equipment service books
Labelled waste bins for general and hazardous waste	Physical proof on site
Labelled Health Risk Waste covid19 waste bins	Physical proof of bins on site
Oil spill kits on site per construction team	Physically on site and at the site camp
Training attendance registers	Proof of copy in Environmental file

TRAINING	
Eskom EMP	Attendance register in environmental file
Contractor EMP	Attendance register in environmental file
Environmental emergency procedure	Attendance register of training drills in environmental file.
Contractor waste management plan	Attendance register in environmental file

At the outset of the project, all relevant documentation shall be placed in the filing system and then supplemented during the construction period with any documentation as generated or updated, including:

- Training material and attendance registers;
- Completed environmental checklists / registers, with dated photographic evidence;
- Minutes and attendance register of environmental site meetings;
- An up-to-date environmental incident log;
- Waste register;
- Complaints register;
- Copies of all instructions or directives issued;
- Copies of all other communications / correspondence;
- Copies 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.

12. Environmental Screening

Environment	Image
<u>Natural Environment</u> **Maraisdal -** is located in the Eastern Free State Clay grassland biome. Indigenous grassland trees are found i.e., pepper- and karee trees. There are also exotic trees not endemic to the area like blue gum trees, pine trees, beefwood and china berry trees (See image 1). -There is a depression wetland between the town and the village where the plain is sloping down to lowest point (See image 2). -The area is mainly covered with grasses like love grass, sweet grass and short shrubs. -There are cattle and other livestock like chickens grazing the village and surroundings. -The village is located at the foot of a hill and underlain by soils with a marked clay accumulation, strongly structured and a non-reddish colour. They may occur associated with one or more of vertic, melanic and plinthic soils. -This soil class is Imperfectly drained soils, often shallow and often with a plinthic horizon. Soils are relatively wet with a seasonal wetness. Favourable in dry season. **Middeldeel -** is located in the Dry Highveld Grassland group which is underlain with sandy soils	 FIGURE 1: VEGETATION IN MARAISDAL VILLAGE

with a somewhat high natural fertility and a high clay accumulation. The soils have a limited depth and may have slow water infiltration.

-Love grass, sweet grass and shrubs are found in and around the village.

-There are cattle, sheep and other livestock.

-The village falls within a high ground water recharge area as natural channels are present in its surrounding.

-The plain is fairly undulating and rocky and slopes down 1:20m outside of the village.

Paradys - is a village located North of Thaba nchu also in the Dry Highveld grassland group. There is an artificial slope seepage wetland south of the village (See image 3). The area is undulating with eroded gravel roads. There are cattle grazing and livestock from the village community.

-Highly chemically fractured rock from the pedocutanic horizon group is found in the area. Water filtering slowly through soil.

Ratabane - is located within 5km from Paradys on an elevated area that slopes down 1:20m to the east. The area is also in the Dry Grassland Biome and mainly covered with different grasses. There are two natural slope seepage wetlands on the western side of the village. Electrification will take place more than 500m from the wetlands.

Merino - has similar characteristics as Ratabane. There is an artificial inland slope seepage wetland at

FIGURE 2: WETLAND FOUND IN THE DIP BETWEEN MARAISDAL VILLGAE AND ITS TOWN

the entrance of Merino. The plain is slightly undulating (See image 4).

-Soils with a marked clay accumulation, strongly structured and a non-reddish colour. They may occur associated with one or more of vertic, melanic and plinthic soils.

Thubisi - is located at the foot of two hills. The soil and vegetation cover are the same as previous mentioned villages (See image 5). There are two wetlands, a valley bottom wetland next to the gravel road leading to the village and a bench depression wetland at the foot of the hill on the north-western side of the village (See image 6). There are erosion gullies between the valley bottom wetland and the village as the village is in an area with high ground water recharge.

FIGURE 3: PARADYS ON THE HILL AND WETLAND IN THE DIP AT PARADYS

FIGURE 4: WETLAND NEXT TO THE ACCESS ROAD TO MERINO

FIGURE 5: OPEN GRASSLAND VEGETATION IN THUBISI WITH DEEPLY ERODED ROADS NEXT TO THE HILL

FIGURE 6: WETLAND NEXT TO THE ACCESS ROAD OF THUBISI VILLAGE

Social Environment **Infrastructure** - The villages have schools, shops and are mainly agricultural orientated. Community members work mainly on surrounding farms and in the Thaba nchu town. Eskom is planning on electrifying the community members who are still not using electricity as part of their livelihoods. -The area is built up with houses, shacks recreational facilities like taverns, etc. There is existing infrastructure like water sewer systems and existing electricity infrastructure. **Income and employment rate** - The village communities fall under the low-income group and has a high unemployment rate. Most community members are middle aged to old people. -There are also subsistence farming practices at households with cattle, sheep, chickens, and other livestock. -New stands were allocated, and houses build hence Eskom was tasked by Department of Minerals and Energy to electrify these areas. The electrification project is predicted to have a positive social impact in terms of electricity supply and job opportunities during construction.	

Heritage - The villages have formal graveyards The electrification is not taking place in the vicinity of graveyards The villages are located in highly sensitive palaeontology area. The position of poles will be next to existing roads and in yards where there are already highly disturbed. Various excavation activities take place in the villages already. It is assumed that Eskom power lines with wooden poles that goes 1.8m down in the ground will not have more impact on palaeontology resources as the impact of services, existing electrical infrastructure, roads and houses that is already there.	
Economic Environment Community members are collecting firewood from trees in and around the villages. Livestock farming and other agricultural related practices takes place by community members. There are small house shops in the villages and also alcoholic beverage outlets. These villages are 10km away from Thaba nchu town. Bus and taxi transport is available from community members to and from the villages. The village economy stagnates when there is heavy rainfall as the plain and roads flood in the area.	

- ***A GIS Desktop study and research on environmental aspects in the Thaba nchu trusts area was done.***
- ***A site visit to the area under study was conducted.***
- ***The portions of the proposed route where access was possible were screened physically during the site visit.***
- ***Consultation with the CNC feeder custodian regarding environmental aspects on his property was made.***

References:

Department Forestry, Fishery and Environment (DFFE) (2022) National web based screening tool. https://screening.environment.gov.za/screeningtool/#/pages/welcome

Mucina, L. and Rutherford, M.C., 2006. The vegetation of South Africa, Lesotho and Swaziland. South African National Biodiversity Institute.

POOLEY, E.S. (1998). A Field Guide to Wildflowers Kwazulu-Natal and the eastern region. Natal Flora Publishers Trust: Durban, South Africa.

Raimondo, D., von Staden, L., Foden., W., Victor, JE., Helme, NA., Turner, RC., Kamundi, DA., Manyama, PA. (eds) (2009). Red List of South African Plants Strelitzia 25. South African National Biodiversity Institute, Pretoria.

SAHRIS, 2021. Paleontology sensitivity map. Available at https://sahris.sahra.org.za/map/palaeo

South African National Biodiversity Institute (SANBI), (2022) Biodiversity GIS map viewer and NFEPA. http://bgisviewer.sanbi.org/Html5Viewer/Index.html?configBase=http://bgisviewer.sanbi.org/Geocortex/Essentials/REST/sites/NFEPA_themes/viewers/National_wetlands

_and_NFEPA/virtualdirectory/Resources/Config/Default&user=&extent=&layerTheme=	

13. Required Method Statements

The approved Construction Method Statement (attached as Appendix 1) must be done in sufficient detail for the EEO to readily assess whether the contractor's proposal is in accordance with the EMP. The method statement must cover applicable details with regard to:

- Development procedures;
- Materials and equipment to be used;
- Getting the equipment to and from site;
- How the equipment/ material will be moved while on site;
- How and where material will be stored;
- Use of suitable drip trays for the containment of fuel leaks that may occur;
- Timing and location of activities;
- Compliance / non-compliance with the EMP; and
- Any other information deemed necessary by the EEO.

Unless indicated otherwise by the EPM, the CPM shall provide a comprehensive method statement to the EPM no less than 14 days prior to the commencement date of the activity for approval, including all applicable aspects, e.g.:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure;
- Workshop or plant servicing;
- Handling, transport and storage of Hazardous Chemical Substance's;
- Access management – Roads, gates, crossings, etc.;
- Fire plan;
- Waste management – transport, storage, segregation, classification, disposal (all waste streams);
- Social interaction – complaints management, compensation claims, site access, etc.;
- Water–use (supply, utilisation, spillage and pollution control;
- Emergency Response Action Plan (ERAP) in accordance with the Eskom Distribution Environmental Emergency Preparedness Plan (EEPP);
- Noise management methodologies.

The EEO shall monitor and ensure that the contractor execute all activities in accordance with the method statement.

14. Environmental Incident Management

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

- Any deviation from the listed impact management actions (listed in this EMP) that may be addressed immediately by the EEO, e.g. 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 the contractor in contravention of the environmental stipulations and guidelines listed in the EMPR including those which as a single event would have a minor impact, but which if cumulative and continuous would have a significant effect (for example toilet paper repeatedly not available in the ablutions); and
- General environmental information, e.g. road kills or injured wildlife during travelling.

All incidents regardless of severity must be reported to the CPM and EPM. The Environmental Incident Log is to be kept in the EMP file and captured in the Monthly Environmental Report. The following will be recorded as a minimum for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The details of the Contractor employee/s responsible;
- The incident significance must be listed in accordance with the project's impact assessment;
- 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 staff member/s.

14.1. Non-compliance

Any non-compliance with the agreed procedures of the EMP is a transgression that may result in a non-compliance notice (NCN) to be issued to the CPM by the EEO via the ESS or the EPM. The NCN will be issued in writing; a copy filed in the EMP file and will at a minimum include the following:

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

The CPM shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. **Failure to redress the cause of a NCN shall be reported to the EPM for further attention.**

Corrective action records

For each NCN issued, a documented corrective action plan (CAP) must be recorded. On receiving a NCN, the CEO will ensure that the corrective actions required take place within the stipulated timeframe. On completion of the corrective action the CEO is to issue a Corrective Action Report in writing to the EEO. If satisfied that the corrective action has been completed, the EEO is to sign-off on the Corrective Action Report, and attach the report to the NCN in the EMP file. A corrective action is considered complete once the report has signed off by the EEO.

14.2.Photographic record

Digital photographic records will be kept of all activities and incidents. The photographic records will be used to show before, during and post corrective evidence of the project, as well used in cases of damages claims if they arise. Each **image must a digital time/date stamp** and a brief description note attached.

The Contractor shall allow the EEO access to take photographs of all areas, activities and actions. The EEO shall keep an electronic database of photographic records which will include:

- Pictures of all areas designated as work areas, camp areas and storage areas taken before these areas are set up;
- All bunding and fencing;
- Road conditions and road verges;
- 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 Inspection Report.

14.3.Complaints

Complaints received regarding activities on the project site pertaining to the environment shall be recorded in a complaints register and the response noted with the date and action taken. The EEO should immediately be made aware of any complaints and planned corrective actions to be implemented. The EEO may then decide on the need to issue a NCN.

14.4.Complaints register

The EEO shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from Interested and Affected Parties. 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 (EEO to take relevant photographs); and

Contain a copy of the EEO written response to each complaint received and keep a record of any further correspondence with the complainant. The EEO’s written response will include a description of any corrective action to be taken and must be signed by the CPM, EEO and affected party. Where a damage claim is issued by the complainant, the EEO shall respond as described below.

14.5.Claims for damages

In the event that a Claim for Damages is submitted, the EEO shall:

- Record the full detail of the complaint as described in (section 4.10) above;
- The EPM will evaluate the claim and associated damage and submit the evaluation to the EPM for approval;
- Following consideration by the EPM, 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 EEO shall, in writing report the incident to the Eskom negotiator and legal department; and
- A formal record of the response by the EEO to the claimant as well as the rectification of the method of making payments not amount will be recorded in the EMP file.

14.6. 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 EEO 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 EMP file;
- Ensure that a complaints telephone numbers are made available to the landowner and IAP's; and
- Ensure that contact with IAP's is courteous at all times;

14.7. Final environmental inspection

On final completion of the project rehabilitation and/or requirements of the EMP, a final environmental inspection report is to be prepared and submitted to the EPM.

14.8. Environmental audits

Environmental audits of the activity and implementation of the EMP must be undertaken as part of the all possible Environmental Audits by Eskom Distribution. The EMP file must be made available to the auditors. Communication of findings must be placed on the EMP file.

15. ENVIRONMENTAL MANAGEMENT PROGRAM

This section provides a site-specific EMP with aspects that have been identified for the construction of the electrification Infrastructure for the Thaba Nchu trusts. It includes a list of aspects with prescribed impact management outcomes and associated impact management actions as identified.

The EPM is responsible to ensure through the functions of the EEO for the implementation of these outcomes and actions for the project as a minimum requirement, in order to mitigate the potential impact of aspects identified for this project.

16. Impact assessment criteria

Refer to clause 4.3.1. of the EMS Procedure (34-260) for determining environmental significance.

The criterion below was used to assess the significance of the impacts. The significance ratings in relation to characteristics of electrification activities are determined. These ratings are defined in terms of the magnitude, Likelihood, Business risks, Regulatory scrutiny and Stakeholder interest.

LIKELIHOOD	MAGNITUDE
High (3): Routine or ongoing activity or impact. Is known to have occurred on routine basis in the past. Impacts associated with the aspects are likely to emerge soon. Impacts are known. **Medium (2**): Periodically occurs once or twice a year. Impacts that are likely to occur within one year. **Low (1):** Very infrequent, every several years. Impacts associated with the aspects are several years away	**High (3):** Aspect has a recognized global environmental impact. Widespread or permanent ecological damage locally. Remediation would take longer than one year. Could result in a major public health hazard. **Medium (2):** Aspect could result in a major uncontained or sustained environmental release impacting on a regional or local environment only. Ecological damage can be remedied within one year. Health hazard to humans in the immediate vicinity, but not resulting in .critical or fatal. **Low (1):** Little or no ecological effect and no measurable impact on human health.

BUSINESS RISK/ BENEFITS	REGULATORY SCRUTINY	STAKEHOLDER INTEREST
High (3): Aspect poses significant risk. Early response necessary. Industrial initiatives underway/developed. May have major impact on competitive position. May have a significant impact on value of Eskom's assets. **Medium (2):** Aspect is likely to pose risk. **Low (1):** Aspect does not pose significant risk. No need for early response. No industry initiative associated with aspect. Does not threaten competitive position. Does not affect values of Eskom assets	**High (3):** Regulated by Legislation. High potential for regulatory action or limitations to operate (subject to regulatory inspections & historical compliance problems) **Medium (2):** Regulated & Legislated, however not a priority in terms of enforcement **Low (1):** Relatively unimportant, Little or no potential for regulatory action (e.g. not regulated; not a target of enforcement).	**High (3):** Very important to public and customers. Aspect has the potential to cause damage to corporate reputation. Ongoing dialogue has begun; negative perception, possibility for third party lawsuits. Customers expect superior performance by Eskom in managing this aspect. **Medium (2):** Important to the public and customers. The aspect is likely to cause damage to corporate reputation. **Low (1):** Relatively unimportant; the public is unaware or is aware but it is not an issue. No threat to corporate image. It is not an issue with customers.

SIGNIFICANCE OF THE IMPACTS:

The significance of the unmanaged and managed impacts has been assessed through consideration of the likelihood of the impact occurring, the magnitude over which the impact will be experienced, and the level of business risk, regulatory scrutiny and stakeholders interest the impact will have on the environment.

The formula for calculating the significant environmental impacts score is:

(Likelihood **X** Magnitude)

+ Regulatory scrutiny

+ Stakeholder interest

+ Business risk/benefit

The significant rating, as determined by the Operating unit, is as follows:

- 0 – 5: Low
- 6 -10: Medium
- 11 – 18: High

Impacts with a value greater than or equal to 11 will be considered as significant.

17. EMP register for activities on Thaba Nchu trusts electrification

Environmental awareness training

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

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Untrained workers	Pollution Degradation Legal contravention	High	❖ All staff must receive **environmental awareness training** prior to commencement of the activities; ❖ The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course; ❖ Refresher environmental awareness training is available as and when required; ❖ All staff are aware of the conditions and controls linked to the EA and within the EMP and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMP; ❖ The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: a) Safety notifications; and b) No littering. ❖ Environmental awareness training must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities b) Mitigation measures to be implemented when carrying out specific activities; c) Emergency preparedness and response procedures; d) Emergency procedures; e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures; g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures;	Low	Contractor Environmental Officer	Lecture and demonstrations	Pre-project	Eskom Environmental Officer	Once-off	Attendance registers

			j) Fire prevention; and k) Disease prevention. ❖ A record of all environmental awareness training courses undertaken as part of the EMP must be available; ❖ Educate workers on the dangers of open and/or unattended fires; ❖ A staff attendance register of all staff to have received environmental awareness training must be available. ❖ Course material must be available and presented in appropriate languages that all staff can understand.							

Site Establishment development

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

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Site layout, Planning, Loss of topsoil, Site camp positioning and location	Pollution Degradation Legal contravention, Erosion	High	❖ A **method statement** must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to **offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;** ❖ Location of camps must be within approved area to ensure that the site does not impact on sensitive areas identified in	Low	Contractor Project Manager	Execution of activities in accordance with the approved Method Statement.	Pre-project	Eskom Environmental Officer	Once-off	Daily/Weekly registers; photographs

			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 the section on Fencing and gate installation; and ❖ The use of existing accommodation for contractor staff, where possible, is encouraged.							

Access roads

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

Impact Assessment						**Implementation**			**Monitoring**	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Contractor workers, Construction activities, Equipment	Unauthorised access to site, Injuries, Damages, general disturbance	Medium	❖ An access agreement must be formalised and signed by the EPM, Contractor and landowner before commencing with the activities; ❖ All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition ❖ All contractors must be made aware of all these access routes. ❖ Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense; ❖ Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads; ❖ In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with ***section 4.9: photographic record***; prior to use and the condition thereof agreed by	Low	Eskom Project Manager	Lecture and demonstrations	Pre-project	Eskom Environmental Officer	Once-off	Signed-off access agreement

			the landowner, the EPM, and the contractor; ❖ Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands ❖ Access roads must only be developed on a pre-planned and approved roads. ❖ Written access agreement (municipal wayleave)							

Water Supply Management

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

Impact Assessment						**Implementation**			**Monitoring**	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Water	Water resource depletion	Medium	Ensure water conservation is being practiced by: ❖ Minimising water use during cleaning of equipment; ❖ Undertaking regular audits of water systems; and ❖ Including a discussion on water usage and conservation during environmental awareness training. ❖ The use of grey water is encouraged.	Low	Eskom Project Manager	Written supply agreement will be entered into with a suitable supplier.	Duration of project	Eskom Environmental Officer	Once-off	Signed-off supply agreement

Storm and waste water management

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

Impact Assessment						**Implementation**			**Monitoring**	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Contaminated water	Surface and underground water pollution, Loss of biodiversity	Medium	❖ Runoff from the cement/ concrete mixing areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager; ❖ All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility; ❖ Natural storm water runoff not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the EEO; ❖ 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 EEO	Low	Contractor Project Manager and Contractor Environmental Officer	As per approved Method Statement	Duration of construction	Eskom Environmental Officer	Daily/Weekly	Daily/Weekly registers; photographs; Approved Method Statement.

Solid and hazardous waste management

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

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Waste	Surface and underground water pollution, Loss of biodiversity	Medium	❖ All measures regarding waste management must be undertaken using an integrated waste management approach; ❖ Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided; ❖ A suitably positioned and clearly demarcated waste collection site must be identified and provided; ❖ The waste collection site must be maintained in a clean and orderly manner; ❖ Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal; ❖ Staff must be trained in waste segregation; ❖ Bins must be emptied regularly; ❖ General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company; ❖ Hazardous waste must be disposed of at a registered waste disposal site; ❖ Certificates of safe disposal for general, hazardous and recycled waste must be maintained.	Low	Contractor Project Manager	Waste management done in accordance with the stated impact management actions, with emphasis on recycling where possible. Written agreements or approvals will be obtained for disposal of wastes at appropriate Licensed facilities.	Duration of construction	Eskom Environmental Officer	Daily/ Weekly	Daily/Weekly registers and photographs; Training registers; Safe disposal certificates

Protection of watercourses and natural channels

Impact management outcome: ***Pollution and contamination of the watercourse environment and or natural channel erosion is prevented.***

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Construction equipment	❖ Surface and underground water pollution. Loss of biodiversity. ❖ Altering of banks and beds of watercourses	Medium	❖ All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities; ❖ In the event of a spill, prompt action must be taken to clear the polluted or affected areas; ❖ Where possible, no development equipment must traverse any seasonal or permanent wetland ❖ There must not be any impact on the long term morphological dynamics of watercourses.	Low	Contractor Project Manager	Water management must be done in accordance with the existing electrification EMP and stated impact management actions.	Duration of construction	Eskom Environmental Officer	ongoing	Daily/Weekly registers and photographs

Protection of fauna

Impact management outcome: ***Disturbance to fauna, loss of biodiversity and habitat is minimised.***

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Construction equipment and workers	❖ Loos of fauna ❖ Disturbance of habitat ❖ Legal contravention	Medium	❖ No interference with livestock must occur without the site or adjacent landowners' written consent and with the landowner or a person representing the landowner being present; ❖ The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development program; ❖ Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present; ❖ Special recommendations of an avian specialist must be obtained, if required, and adhered to at all times to prevent unnecessary disturbance of birds;	Low	Contractor Project Manager	Prohibiting any hunting or killing of faunal species through training program.	Duration of construction	Eskom Environmental Officer	Ongoing	Training

			❖ No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas; ❖ No deliberate or intentional killing of fauna is allowed; ❖ In areas where snakes are abundant, snake deterrents to be deployed to prevent snakes climbing onto or into infrastructure and being electrocuted, potentially also 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							

Safety of the public

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

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Construction equipment and workers	❖ Injury and/or harm to public members. ❖ Damage to Eskom Image	Medium	❖ Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.; ❖ All unattended open excavations must be adequately fenced or demarcated; ❖ Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding; ❖ Ensure structures vulnerable to high winds are secured; Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged	Low	Contractor Project Manager and Health & Safety Officer	As per the Health & Safety Plan	Duration of construction	Health & Safety Officer	Daily/Weekly	Daily/Weekly registers and photographs. Approved Health and Safety Plan. Complaints and Incident register

Sanitation

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

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Human waste	❖ Human health risk ❖ Ecological impact	Medium	❖ Mobile chemical toilets are installed onsite if no other ablution facilities are available; ❖ The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances; ❖ Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body; b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMP; 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; g) A copy of the waste disposal certificates must be maintained.	Low	Contractor Project Manager	Chemical toilets will be placed and maintained by a service provider in accordance with contract between contractor and the supplier.	Duration of construction	Eskom Environmental Officer and Health & Safety Officer	Daily/Weekly	Daily/Weekly registers; Copies of signed service certificates

Prevention of disease

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

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Virus/ Desease	❖ Human health risk ❖ Ecological impact	Medium	❖ Undertake environmentally-friendly pest control in the camp area; ❖ Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS; ❖ The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area; ❖ Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable; ❖ Free condoms must be made available to all staff on site at central points; ❖ Medical support must be made available; ❖ Provide access to Voluntary HIV Testing and Counselling Services.	Low	Contractor Project Manager and Health & Safety Officer	As per the Health & Safety Plan	Duration of construction	Eskom Environmental Officer and Health & Safety Officer	Daily/Weekly	Daily/Weekly registers; photographs. Health & Safety Plan

Emergency procedures

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

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Environmental Emergency situations	❖ Human health risk ❖ Ecological impact	Medium	❖ Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; ❖ The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation; ❖ All staff must be made aware of emergency procedures as part of environmental awareness training; ❖ The relevant local authority must be made aware of a fire as soon as it starts; ❖ In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see ***Hazardous Substances section***).	Low	Contractor Project Manager	Adherence to the Eskom Distribution Grid's Emergency Preparedness Plan or development and implementation of a project-specific Emergency Response Action Plan (if required).	Duration of construction	Eskom Environmental Officer and Health and Safety Officer	Daily/Weekly	Daily/Weekly registers; photographs. Training registers

Hazardous substances

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

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Uncontrolled hazardous substances	❖ Human health risk ❖ Ecological impact ❖ Legal contravention	High	❖ The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible; ❖ All hazardous substances must be stored in suitable containers as defined in the Method Statement; ❖ Containers must be clearly marked to indicate contents, quantities and safety requirements; ❖ All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers; ❖ Bunded areas to be suitably lined with a SABS approved liner; ❖ An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis; ❖ All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS's); ❖ 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	Low	Contractor Project Manager	As per the Construction Method Statement and relevant Impact Management Actions	Duration of construction	Eskom Environmental Officer and Health and Safety Officer	Daily/Weekly	Daily/Weekly registers; photographs; Training registers

			the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall); ❖ The floor of the bund must be sloped, draining to an oil separator; ❖ Provision must be made for 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 to the scale of the activity/s involving the use of hazardous substance							

Dust emissions

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

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Falling dust particles	❖ Human health risk ❖ Ecological impact	Medium	❖ Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the EEO; ❖ **Excavation**, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present; ❖ During **high wind** conditions, the EEO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level; ❖ Where possible, **soil stockpiles** must be located in sheltered areas where they are not exposed to the erosive effects of the wind; ❖ Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the EEO; ❖ Vehicle speeds must not exceed **40 km/h** along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas; ❖ For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.	Low	Contractor Project Manager	As per the Construction Method Statement and relevant Impact Management Actions	Duration of construction	Eskom Environmental Officer	Ongoing	Daily/Weekly registers; photographs

Noise

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

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Construction noise	❖ Human health risk ❖ Ecological impact	Medium	❖ The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only; ❖ All vehicles and machinery must be properly maintained; ❖ Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers; ❖ Develop a Code of Conduct for the construction phase in terms of behaviour of construction staff. ❖ Operating hours must be kept to during the construction phase. ❖ Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.	Low	Contractor Project Manager	As per Project Method Statement and Equipment Maintenance Program compliant with required impact management actions	Duration of construction	Eskom Environmental Officer	Daily/Weekly	Daily/Weekly registers; Equipment maintenance records

Fire prevention

Impact management outcome: ***Prevention of uncontrollable fires.***

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Environmental Emergency situations	❖ Human health risk ❖ Ecological impact	Medium	❖ Designate smoking areas where the fire hazard could be regarded as insignificant; ❖ Firefighting equipment must be available on all vehicles located on site; ❖ The local Fire Protection Agency (FPA) must be informed of construction activities; ❖ Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site; ❖ Two way swop of contact details between EEO and FPA.	Low	Contractor Project Manager	As per the Eskom Distribution Emergency Preparedness Plan or Emergency Response Action Plan.	Duration of construction	Eskom Environmental Officer; Health & Safety Officer	Daily/Weekly	Daily/Weekly registers; photographs.

Cabling and Stringing

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

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Cabling and stringing waste	❖ Human health risk ❖ Ecological impact	Medium	❖ Residual solid waste (off cuts etc.) shall be recycled or disposed of in accordance with the Section on Solid waste and hazardous Management; ❖ Management of equipment used for installation shall be conducted in accordance with the contractor method statement on Management hazardous substances and any associated spills shall be conducted in accordance with the Section on Hazardous substances.	Low	Contractor Project Manager	As per the Project Method Statement and Waste Management Plan	Duration of construction	Eskom Environmental Officer; Health & Safety Officer	Daily/Weekly	Daily/Weekly registers; photographs.

Socio-economic

Impact management outcome: Enhanced socio-economic development

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Electrification project	❖ Positive impact through local labourer employment	Medium	❖ Develop and implement communication strategies to facilitate public participation; ❖ Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process; ❖ Sustain continuous communication and liaison with community via ward councillor ❖ Create work and training opportunities for local stakeholders; and ❖ Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to site and to workers	High	Contractor Project Manager	As per the Impact Management Actions	Duration of construction	Eskom Environmental Officer	Daily/Weekly	Daily/Weekly registers; photographs.

18. Conclusion

This EMP highlights the environmental issues related to the construction of the **Thaba nchu trusts electrification infrastructure.** This EMP encourages easy management of activities and related impacts. In order to minimise negative environmental impacts, these recommended measures must be implemented. **The EMP is a stand- alone document, which must be used on the site throughout all development phases**. The onus set out in the EMP rests with the Eskom personnel and the contractors, who need to be environmentally responsible and demonstrate environmental commitment. However, the absence of due care could potentially lead to legal transgressions, as well as non-compliance with environmental management requirements (policies, procedures, standards, etc.) of both Eskom and the municipality. Compliance with environmental and legal requirements will be very easy to achieve by ensuring a suitable Construction Method Statement. The implementation of this EMP will provide full environmental assurance to Eskom and other stakeholders.

19. Important Recommendations

- To ensure conformance to the EMP, it is recommended that a monitoring program be set up. The monitoring program can be used to monitor the effectiveness of the EMP and also identify environmental issues and impacts that have not been accounted for in the EMP, which are or could result in significant environmental impacts for which corrective action is required.
- It is important that the Environmental Management Plan be presented and explained to the Construction team and/or contractors in order to familiarise them to the environmental agreements and conditions.
- Site visits are to be conducted throughout the project by the relevant environmental practitioner, representatives from construction, project management or affected parties at predetermined intervals.
- It is recommended that emergency plans be put in place for the activities identified within the EMP in order to minimise possible impacts should incidents occur.
- Prior arrangement must be made for the timely / immediate appointment of clean-up consultant should major spill occur.
- All equipment handled must be inspected for cracks, open lids, loose screws, leaks etc. during operation, before removal and transportation.
- All assets that are to be sold must be referred to Maxi Wesi, Commercial Department and Assets Disposal. Contact number: 082 664 7755, 051 404 2310
- Any new environmental aspect identified during the project needs to be added to the EMP register above. Help in this regard can be obtained from the environmental section. Contact details: Earl Daniels (051) 404 5759
- Drive with moderate speed to minimise the risk of vehicular accidents.
- Limit the construction work to normal working hours to minimise the impact of noise on the residents in the area.

Standard Conditions to be adhered to during construction and Operation.

1.1 The Eskom project manager or co-ordinator shall be responsible for ensuring that the land owners/ TSO/ Project co-ordinator have been informed before any work is carried out on site. Contractors shall find out if owners/ TSO/ Project co-ordinator the 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 coordinator.

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 unauthorized persons and vehicles entering into adjacent camps or properties.

1.5 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 /TSO/ Project co-ordinator. Privacy shall be respected at all times.

1.9 Eskom, Eskom's contractors and their employees shall at all times be courteous towards landowners, tenants and the local community.

1.10 Eskom, 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 coordinator.

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/coordinator in consultation with the property owner. A written record of damages and rectifying action shall be kept. The landowner's satisfaction with the outcome of rectifying action shall be obtained in writing.

1.15 A proper system of waste management shall be instituted in the construction camp. This entails that sufficient waste bins are available on site and in the construction camp. The waste shall be dumped 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 Water and Toilet facilities shall be provided on site and in the construction camp. The facilities shall comply with Eskom standards and shall have the approval of the landowner.

1.17 No human excrement shall be left in the veld. If no toilet facilities are available such waste shall be buried *immediately*.

1.18 Herbicides shall only be applied with Eskom's permission and in accordance with the Eskom Policy on Herbicides ESKPBAAD4.

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 that 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 (protected trees shall be dealt with in

1.22. Inform the landowner/ municipality prior to start of construction.

1.23. Place construction notice boards visibly in the area of where construction will take place.

1.24. No soil stockpiling should take place in the wetland area. Excessive soil should be reused or disposed of.

21. Site layout

FIGURE 7: MARAISDAL VILLAGE WITH ALLOCATED NEW STANDS TO BE ELECTRIFIED

FIGURE 8: PARADYS VILLAGE WITH NEW ALLOCATED STANDS TO BE ELECTRIFIED

FIGURE 9: RATABANE VILLAGE WITH ALLOCATED NEW STANDS TO BE ELECTRIFIED

FIGURE 10: MIDDELDEEL VILLAGE WITH ALLOCATED NEW STANDS TO BE ELECTRIFIED

FIGURE 11: MERINO VILLAGE WITH ALLOCATED NEW STANDS TO BE ELECTRIFIED

FIGURE 12: THUBISI VILLAGE WITH ALLOCATED NEW STANDS