



**NORTH WEST OPERATING UNIT
LAND DEVELOPMENT
ENVIRONMENTAL MANAGEMENT**

**ENVIRONMENTAL MANAGEMENT
PROGRAMME (EMPr) FOR BARSEBA
ELECTRIFICATION PROJECT**



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|-------------------------------|--|
| Environmental Officer: | Name: Aron Senyolo Tel no: 014 565 1169 Cell: 078 596 7050 E-mail address: senyolma@eskom.co.za |
| Project Name: | Barseba Electrification Project |
| Project Scope of Work: | The project entails construction of MV and LV power lines to supply houses with electricity |
| Compiled by | Aron Senyolo |

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ACRONYMS

| | |
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| EMPr | Environmental Management Programme |
| EO | Environmental Officer |
| DWA | Department of Water Affairs |
| DEA | Department of Environmental Affairs |
| SAHRA | South African Heritage Resource Agency |
| PPE | Personal Protective Equipment |
| OHSA | Occupational Health and Safety Act |
| SAPS | South African Police Services |
| DAFF | Department of Agriculture Forestry and Fisheries |
| PM | Project Manager |
| PC | Project Co-ordinator |
| LD | Land Development |
| SS | Senior Supervisor |

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 organization's activities, products or services.

Environmental Management Programme (EMPr): A programme 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: 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 issues (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 are met or conducting environmental audit.

1. INTRODUCTION

As part of Eskom's Integrated Environmental Management System (ISO14001), there is a commitment to the development and implementation of an Environmental Management Programme (EMPr) for all Eskom Projects.

This EMPr is developed specifically for Barseba Electrification Project. Based on the project scope and location, the proposed development does not require Environmental Authorisation or Water Use Licence, however all the requirements of this EMPr must be adhered to during the construction period.

2. EMPr Objectives

The objective of this Environmental Management Programme (EMPr) is to give guidelines for environmental best practice to the contractor to execute the work. This document shall be seen as part of the contract. The document describes how activities that could have a negative impact on the environment will be managed and monitored and impacted areas rehabilitated.

The EMPr is applicable to the contractor, subcontractors, Eskom employees, Eskom subsidiaries and anyone who will be working on behalf of Eskom.

Furthermore, this document will subsequently be used for maintenance of the project during the operational phase. This Environmental Management Programme 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 life-span of the project.

2.1. Purpose

This document constitutes the Environmental Management Programme (EMPr) for Barseba electrification, which falls under the jurisdiction of Moses Madibeng Local Municipality in the North West Province.

This EMPr describes how the activities that could have a negative impact on the environment will be managed and monitored in and around the construction site. This document also serves as an environmental specification to the contractor with regards to addressing the environmental issues that are anticipated from the construction activities.

2.2. Aims of the EMPr

This EMPr is developed to ensure that the following are in place:

- There is a process to identify existing or to predict potential negative environmental impacts;
- Objectives and targets are set to ensure 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 actions;

- There is compliance with relevant legislations as well as regulations and by-laws;
- To indicate responsibilities, schedules and staff resources regarding the Implementation of the action plans throughout the project.

2.3. EMPr Compliance

- Environmental training shall be given to all employees working on the project in order to have an idea regarding environmental matters and the possible environmental impacts that may emanate during the undertaking of the project. This training is to be given before the construction commences by Eskom Environmental Officer.
- An Environmental Register is to be kept on site at all times to register all the environmental incidents and customer complaints.
- The EMPr must be available at all the times on the construction site.

2.4. Project Responsibilities

| PROJECT MANAGER | ESKOM ENVIRONMENTAL OFFICER | CONTRACTOR |
|--|--|--|
| <p>The Project Manager is responsible for overall management of project and EMPr implementation. The following tasks will fall within his / her responsibilities:</p> <ul style="list-style-type: none"> ○ Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures. ○ Ensure that site activities comply with the EMPr. ○ Rectify transgressions through the implementation of corrective action. | <p>The EO is responsible for the implementation of the EMPr during the construction phase as well as liaison and reporting to Eskom, and Contractor. The following tasks will fall within his responsibilities:</p> <ul style="list-style-type: none"> ○ Conduct audits during construction and compile reports ○ Liaise with the construction team and the Project Manager ○ Recommend corrective action for non-compliance incidents on the construction site ○ Ensure that the corrective measures are implemented. | <p>The Contractor is responsible for the overall execution of the activities in the construction phase including the implementation and compliance at all times with recommendations and conditions of the EMPr as well as implementation of findings during audits by the EO. Maintain an environmental register which keeps a record of all incidents which occur on the site during construction. These incidents include:</p> <ul style="list-style-type: none"> ○ Public complaints ○ Environmental incidents for the projects. ○ Non-compliance incidents |

3. ENVIRONMENTAL LEGISLATION FRAMEWORK

| LEGISLATION | SECTION | RELATES TO |
|--|---|---|
| The Constitution of South Africa | Chapter 2 Section 24 Section 25 | Bill of Rights. Environmental rights. Rights of 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 significantly affect the environment. Listed activities and Regulations. The developer has a general duty to care for the environment and to institute such measures as may be needed to demonstrate such 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 paleontological sites, and public monuments and memorials |
| National Water Act No. 36 of 1998 | Section 19 Section 14 | Pollution prevention and Water use. |
| National Environmental Management: Air Quality Act No. 39 of 2004 | Sections 26-27 Section 32 | Control of dust. |
| Occupational Health & Safety Act No. 85 of 1993 | Section 8 Section 9 | General duties of employers to their employees. General duties of employers and self-employed persons to persons other than their employees. |
| Noise Control Regulations of the Environmental Conservation Act No. 73 of 1989. | Section 25 | Control of noise |
| Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act No. 36 of 1947 | Sections 3-10 | Control of the use of registered pesticides, herbicides (weed killers) and fertilizers. Special precautions must be taken to prevent workers from being exposed to chemical substances in this regard. |
| Nature Conservation Ordinance (Transvaal) Act No. 12 of 1983 | Section 98 | Identification of any specially protected or rare and endangered species. If these are to be affected by the proposed project, a permit from the Director General, Nature |

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| | Section 11 | Conservation should be obtained prior to removal. Prohibits the picking of all indigenous plants on public roads and nature reserves without a permit. |
| National Forest Act No. 84 of 1998 | Section 12- 16 | Prohibits the destruction/removal of protected trees without a permit |
| Hazardous Substances Act 15 of 1973 | Section 3 | Control of hazardous substances |
| Fencing Act 31 of 1963 | Section 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. |

4. ESKOM POLICIES AND PROCEDURES

| PROCEDURE | DESCRIPTION |
|------------|---|
| EPC 32-95 | <i>Reporting, Recording, Investigating, Costing and Following up of Incidents/Accidents</i> |
| EPC 32-303 | <i>Requirements for the Safe Processing, Storing, Removing and Handling of Asbestos or Asbestos containing material.</i> |
| DISASAAT8 | <i>Provision and Use of Personal Protective Equipment (PPE)</i> |
| EPC32-245 | <i>Environmental Procedure: Waste Procedure</i> |
| EPC32-247 | <i>Environmental Procedure: Procedure for vegetation clearance and maintenance within overhead power line servitudes and on Eskom owned land.</i> |
| DST34-440 | <i>Selection Purchase and Storage of Hazardous Material.</i> |

5. GENERAL CONDITIONS AND CONTROL MEASURES

Management of construction activities should be controlled by adhering to the Environmental control measures outlined below:

5.1 Environmental Control Measures (Pre Construction Phase, Construction Phase and Operational Phase)

| PRE-CONSTRUCTION PHASE | | |
|------------------------|---|-----------------------------------|
| Aspect and Impact | Applicable Legislation | Applicable Eskom Standards |
| LANDOWNERS | The Constitution (Act No 108 of 1996) – Chapter 2, 24 and 25. | Wayleave Agreements Servitudes |
| | <ul style="list-style-type: none"> The Eskom project manager or co-ordinator shall be responsible for ensuring that the land owners have been informed before any work is carried out on site. The contractor shall not interfere, under any circumstances, with built infrastructure belonging to the landowners around the project site. The project manager must coordinate with other parties working on site regarding: site management, timing of works, clearing the site, materials ordering, waste management, access, deliveries and construction areas. | |
| CONSTRUCTION CAMP | National Environmental Management Act (No 107 of 1998) | EPC 32 94 |
| | <ul style="list-style-type: none"> Choice of site for the contractor's camp must take into account location of local residents and ecologically sensitive areas, including flood zones and slip/unstable zones. The construction site camp should be located in a secure area. The site camp should be kept tidy and free from littering. | |
| CONSTRUCTION PHASE | | |
| Aspect and Impact | Applicable Legislation | Applicable Eskom Standards |
| ACCESS | Fencing Act 31 Of 1963 | EPC 32- 94 |

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| | <ul style="list-style-type: none"> • The existing roads should be used and no new roads must be created. • Private and commercial entrances must not be obstructed during the undertaking of the project. • No property may be accessed after normal working hours, except with prior permission of the landowners. • Construction activities are to be confined to the project (servitude/wayleave) area. | |
| GATES | Fencing Act 31 of 1963 | EPC 32- 95 |
| | <ul style="list-style-type: none"> • All gates of locals shall be kept closed if found closed. • Gates shall only be left open on request of the landowner if he accepts partial responsibility for such in writing. • Even though some houses in the area do not have proper gates, they should be treated with care. | |
| BARRICADING AND LIGHTING | Occupational Health and Safety Act 85 of 1993 | |
| | <ul style="list-style-type: none"> • Dig and plant method should be exercised onsite and no holes should be left open for longer period. • There are domestic animals such as goats, dogs, donkeys and cattle in the area, as such open holes should be backfilled timeously in order to avoid unnecessary incidents of such animals falling into open holes. | |
| SANITATION & ABLUTION FACILITIES | Occupational Health and Safety Act 85 of 1993 | EPC 32-245. |
| | <ul style="list-style-type: none"> • Workers onsite shall be supplied with clean potable water. • Sanitizing agents should be available all the times for employees to utilize onsite to mitigate Covid-19 infections. • Sufficient toilet facilities shall be provided for workers onsite. • A registered service provider to be utilised • The facilities shall comply with Eskom standards. • The toilets should be serviced weekly and proof filed thereof. | |
| HAZARDOUS SUBSTANCES MANAGEMENT | Occupational Health and Safety Act 85 of 1993, Hazardous Substances Act | DST34-440 |
| | <ul style="list-style-type: none"> • Hazardous substances are to be stored in a bounded area and the storage areas shall display the required safety signs. • No oil, diesel or other chemicals may be spilled or discarded onsite during the construction. If an accidental spill occurs, it must be reported immediately (Annexure A) and cleaned to the satisfaction of Eskom. • Oil spill kits must be kept on site and used in the case of minor oil spills. • All hazardous substances containers should be marked and placed in an impermeable surface. • Used oils, fuel, paints, grease and solvents should be stored in drums or other suitable containers, which must be labelled, sealed and removed from the site to an appropriate disposal site or recycling facility. | |

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| | <ul style="list-style-type: none"> The storage area must be properly demarcated and cordoned. | |
| HEALTH AND SAFETY | Occupational Health and Safety Act 85 of 1993 | EPC 32-95 |
| | <ul style="list-style-type: none"> The contractor shall ensure that all employees onsite are supplied with adequate PPE. Employees shall cooperate with the employer to ensure that the requirements as set out in the Occupational and Safety Act and the Regulation are fulfilled. Employees shall maintain each item of personal protective equipment provided to them and keep it clean and hygienic and in good state of repair. All the PPE purchased shall be in accordance with the Distribution Specification on PPE. Safety signs should be clearly displayed in the site camp. | |

CONSTRUCTION PHASE

| Aspect and Impact | Applicable Legislation | Applicable Eskom Standards |
|-------------------------------|---|----------------------------|
| ENVIRONMENTAL TRAINING | NEMA | SHEQ Policy EPC 727 |
| | <ul style="list-style-type: none"> Site personnel should have a basic level of environmental awareness training before the construction commences. The training shall be conducted by Eskom Environmental Officer and the Attendance Register of such training be kept in the file onsite. The Contractor must monitor the performance of construction workers to ensure that the points relayed during their introduction have been properly understood and are being followed. | |
| FIRES | Occupational Health and Safety Act 85 of 1993, National Veld and Forest Act No. 101 of 1998 | EPC 32-245 |
| | <ul style="list-style-type: none"> No fires are permitted on site or camp. Any cases of fires caused during construction period must be reported immediately to the Site Manger and the Eskom EO. Firefighting equipment must be kept in close proximity to where work is taking place at all times during construction i.e. fire extinguishers. Fire extinguishers should be within service timeframe. | |
| CEMENT MIXING | Occupational Health and Safety Act 85 of 1993, Hazardous Substances Act | EPC32-245 |

- Ready mixed concrete must be utilised where possible if there will be a need for cement.
- Concrete mixing must be contained within a bunded area.
- Concrete mixing must only take place within designated area.
- No vehicle transporting concrete to the site may be washed on site as cement contaminated water disturbs the natural acidity of the soil and affects plant growth.
- Cement mixing on site must take place on a non-permeable surface. The contractor is responsible for ensuring that the cement bags are disposed of at a registered landfill site for hazardous substances.

CONSTRUCTION PHASE

| Aspect and Impact | Applicable Legislation | Applicable Eskom Standards |
|-------------------------|---|----------------------------|
| WASTE MANAGEMENT | NEMA: Waste Act | EPC32-245 |
| | <ul style="list-style-type: none"> • Sufficient separate waste containers must be provided for general waste and construction waste. • No waste may be burned on site. • All waste products must be disposed of at the nearest licensed waste disposal site at regular intervals. • The contractor shall ensure that the campsite and the work site are kept in a neat condition at all times and that windblown litter is cleared on a daily basis. • Temporary waste storage site shall be utilized and it is to be barricaded at all times. | |

CONSTRUCTION PHASE

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| BIRD INTERACTIONS | National Biodiversity Act | EPC 32-95 |
| | <ul style="list-style-type: none"> • Only bird friendly structures should be utilized for the project. • Utilization of bird unfriendly structures would have negative environmental impact on the birds in the area. • In the event of bird incidents (electrocution), the Eskom EO must be contacted. • The incident shall be reported within 24hours by means of a flash report and investigated. • If there are nests encountered during the construction phase, experts shall be contacted regarding the removal of such nests within the project site. | |
| TRANSPORTATION | | EPC 32-95 |

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| | <ul style="list-style-type: none"> • Vehicles used for transportation must be road worthy. • All workers transported must wear seat belts. • Rules of the road must be adhered to at all times. • Speed limit should be adhered to at all times. | |
| DUST CONTROL | Occupational Health and Safety Act 85 of 1993 | EPC 32- 95 EPC 32- 245 |
| | <ul style="list-style-type: none"> • The vehicles shall be driven with moderate speed in order to avoid unnecessary dust generation. • Water spraying shall be used where possible in order to control dust generation onsite during the construction phase. | |
| NOISE CONTROL | Occupational Health and Safety Act 85 of 1993 | EPC 32- 95 |
| | <ul style="list-style-type: none"> • Contractor must comply with Health and Safety Legislation where more than one noise source is placed is less than 85Db. • Avoid very noisy activities at times which would cause disturbance to neighbours. • Keep to stipulated site hours. | |
| COMMUNITY ISSUES | Occupational Health and Safety Act 85 of 1993 | EPC 32-95 |
| | <ul style="list-style-type: none"> • Property owners and local residents shall be treated with respect at all times. • Should conflict arise it shall be immediately reported to the Eskom project manager or co-ordinator. • All complaints shall be reported, recorded (Public complaints register) and investigated. | |
| ROAD CROSSINGS | | EPC 32- 94 |
| | <ul style="list-style-type: none"> • Eskom should direct a written application (as soon as possible or before work commences) to the Relevant Authority to ascertain if any of their infrastructure might be impacted upon and to acquire permission with regards to crossings. • All crossings, i.e. where the cable crosses a road, telephone line or municipal services, needs to be considered as arrangements need to be made with the Relevant Authority. | |
| MATERIALS STORAGE | Occupational Health and Safety Act 85 of 1993, Hazardous Substances Act 15 of 1973 | DST34-440, EPC 32-247 |
| | <ul style="list-style-type: none"> • Storage of equipment and facilities should be selected and designed to ensure safety of goods. • Specific Storage areas shall be clearly marked and demarcated. • Construction material should be stacked neatly at the site camp. | |

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| VEGETATION MANAGEMENT | National Biodiversity Act | |
| | <ul style="list-style-type: none"> • Bush clearing will be required in some portions of the project site. • Tree permit will not be required as surveying phase of the project. • Cutting/trimming of protected tree without a tree permit constitutes legal contravention. | |
| CONSTRUCTION PHASE | | |
| CULTURAL AND HERITAGE ARTEFACTS | National Heritage Resources Act No. 25 of 1999 | EPC 32- 95 |
| | <ul style="list-style-type: none"> • Should any human remains or artefacts be discovered during construction, construction to cease immediately and the ECO is to be notified. • The contractor must ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that SAHRA can be notified. | |
| MONITORING | NEMA | EPC 32- 95 |
| | <ul style="list-style-type: none"> • This EMPr is viewed as a living document that should change to suit the needs of the project. • The EMPr must be presented and explained to the Construction team and/or contractors to sensitise them to pertinent environmental agreements and conditions. • Regular site visits will be conducted at intervals for the duration of the project by the EO, contractor representatives and PM. • The site must be cleaned and rehabilitated where possible to almost its original condition after the construction. | |
| FINAL SITE INSPECTION | NEMA | |
| | Final site inspection must be conducted to ensure that the recommendations of post construction are implemented. | |



**EMERGENCY PREPAREDNESS PLAN
2022 - 2023
NORTH WEST OPERATING UNIT**

In terms of EPC 32-95, it is the responsibility of the Contractor or next in charge to report an environmental incident to the Environmental Officer (EO) for the project. This must be done by sending an SMS to the EO on 078 596 7050 within 24 hours of the incident and then after submit a flash report detailing the nature of the incident.

Resources to be contacted:

ANNEXURE A: ENVIRONMENTAL RESOURCES

| NAME | WORK AREA | CONTACT DETAILS |
|---|------------|---|
| 1. Aron Senyolo (Environmental Officer) | Rustenburg | 078 596 7050/014 565 1169 senyolma@eskom.co.za |
| 2. Rosina Ndou (Acting LD Environmental Manager) | Klerksdorp | 071 370 6017/018 464 6992 ndours@eskom.co.za |

ANNEXURE B: OIL SPILLS

| COMPANY | CONTACT PERSON | TELEPHONE NUMBER | FAX NUMBER | 24 HOUR SPILL RESPONSE |
|---------|----------------------------------|------------------|--------------|------------------------------|
| ENSA | William Mafatshe | 072 243 0967 | 086 642 8349 | 083 498 8798 |
| IWS | Hugo Kotze Diana Bezuidenhout | 011 826 3978 | | 083 654 4274 083 498 8798 |

ANNEXURE C: REMOVAL OF SNAKES

| CONTACT PERSON | AREA | CONTACT NUMBER |
|----------------|-----------------------|------------------------------|
| Gert Plom | Rustenburg | 082 4488 535 014 592 7478 |
| Paul Games | Chairman of Herp Club | 083 274-4960 |
| Gerhard | | 014 536-3150 |

ANNEXURE D: ANTIVENOM UNIT – NATIONAL HEALTH LABORATORY SERVICES

| CONTACT PERSON | | |
|---|--|-------------------------------|
| Megan Saffer | Office Hours | 011 386-6044 |
| Pricilla Fleischer | Office Hours | 011 386-6052 |
| NHLS SWITCHBOARD | 24 hours | 011 386-6000 |
| Dr Mark Blaylock | Emergency number for venom | 083 463-3011 |
| Dr Roger Blaylock | Emergency number for venom | 083 652-0105 |
| Cost of Antivenom: | | |
| Office Hours: | Polyvalent R540.00 per 10ml | Monovalent R894.00 per 10ml |
| After Hours: <i>This includes VAT.</i> | Polyvalent R702.00 per 10ml <i>Courier will be charged separately</i> | Monovalent R1 162.00 per 10ml |

ANNEXURE E: BEE REMOVAL

| COMPANY | CONTACT PERSON | CONTACT NUMBER |
|---|-----------------------|-----------------------|
| Southerns-Beekeepers Association | Grand Arrand | 083 652 0760 |
| Removal Honey | | 072 142 0505 |

Organizations That May Need to be contacted

| No | Department | Contact Details |
|-----------|--|----------------------------------|
| 1 | Fire Department | 014 590 3333 |
| 2 | South African Police Services (SAPS) | 08600 10 111 |
| 3 | Department of Water Affairs | 012 253 1093/012 253 1026 |
| 4 | Department of Environmental Affairs (DEA) | 012 310 3911/012 310 3137 |