

ENVIRONMENTAL MONITORING REPORT

**Power Lines from Kendal/Kusile to Zeus Substation Bravo
Integration Project – Bravo 4: Construction of two 400 kV lines**

DEA Ref # 12/12/20/1095

Report Prepared for:



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List of Acronyms

DEA – Department of Environmental Affairs
NEMA – National Environmental Management Act
EMPr – Environmental Management Program
EA – Environmental Authorisation
ECO – Environmental Control Officer
NCR – Non compliant report
CA – Competent Authority
EIMS - Environmental Impact Management Services

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1. Introduction

Project Description

The growing demand for electricity is placing increasing pressure on Eskom's existing power generation and transmission capacity. Eskom is committed to implementing a Sustainable Energy Strategy that complements the policies and strategies of National Government. Eskom aims to improve the reliability of electricity supply to the country, and in particular to provide for the growth in electricity demand in the Gauteng and Mpumalanga provinces. For this reason, Eskom obtained environmental authorisation to construct the new 400 kV Bravo (Kusile) coal-fired Power Station between Bronkhorstspuit and Witbank in 2007.

Due to this construction, the new Bravo power station needs to be integrated with the existing Eskom electricity infrastructure. This proposed project is to construct two new 400 kV overhead power lines from the Kendal power station to the Zeus substation. Each of these lines is approximately 100 km in length.

Towns closest to the Kusile and Kendal – Zeus Substation transmission lines project area include Ogies and Delmas in the north, Leandra in the central part and Evander and Secunda in the south. It falls within Emalahleni local municipality and Govan Mbeki local municipality.

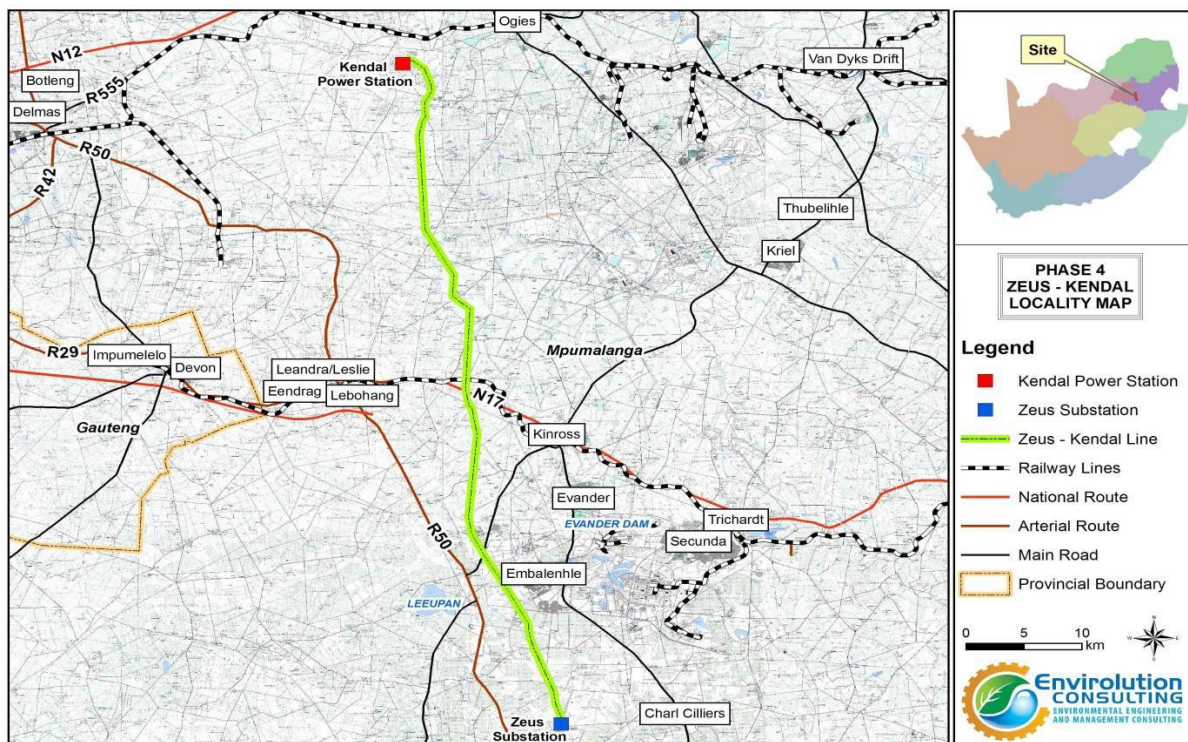


Figure 1: Locality Map indicating the Power line Route

Environmental Authorisation and Environmental Management Programme

Eskom was required to obtain an Environmental Authorisation in accordance with the provisions of the National Environmental Management Act (Act 107 of 1998). In order to obtain the EA it was necessary to conduct an Environmental Impact Assessment process (Ref: 12/12/20/1095) which culminated with the submission of an EIA Report and a Draft Environmental Management Programme. The EA was issued on the 08/10/2009 (authorisation registration number 12/12/20/1096) by the competent authority, the Department of Environmental Affairs. Once the EA is issued, the Draft EMPR needs to be revised to include any conditions contained in the EA received from the DEA as well as outcomes of a post EA walk-down of the approved power line alignments.

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Eskom has appointed Environmental Impact Management Services (Pty) Ltd to conduct the post EA walk-down and to amend the Draft EMPR to include the EA conditions and the walk-down findings and recommendations from relevant specialists (ecology, avifauna, heritage and wetlands). This Final EMPR presents a guideline for the mitigation and management measures to be implemented to avoid, reduce and minimise potential environmental impacts arising out of the development and operation of the proposed power lines and ancillary structures. The purpose of an EMPR is to give effect to precautionary measures, which are to be put in place for controlling the activities that take place on site, and to ensure compliance with national legislative and regulatory requirements. The EMPR should allow for risk minimization, rather than just ensuring legal compliance. The EMPR as a basic requirement complies with Regulation 543, Section 33 (promulgated under the National Environmental Management Act-Act 107 of 1998-NEMA).

It should be borne in mind, however, that the EMPR is a working document that should be updated on a regular basis to ensure continued applicability and improvement- any amendments must comply with the DEA requirements. The relevant approved EMPR and EA must be kept on the property where the activity will be undertaken. The EA and EMPR must be produced to any authorised official of the DEA who requests such and must be made available for inspection by any employee or agent of the applicant who works or undertakes work at the property. By virtue of the fact that the EMPR forms part of the documentation submitted to the CA for decision-making purposes, and forms part of the EA, the provisions contained herein become legally binding.

The Final EMPR comprises of the general EMPR provided by Eskom and compiled by Zitholele Consulting and the site specific environmental management and mitigation measures based on the issued EA and walk-down, as addendum to the general EMPR. Since the Final EMPR is an extension of the conditions of the EA, non-compliance with the Final EMPR constitutes non-compliance with the EA. The holder of the EA must notify the DEA (including the Director: Environmental Impact Evaluation and the Director: Compliance Monitoring) in writing and within 48 hours if any condition of the EA cannot or is not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance

Monitoring and Reporting Requirements

Environmental Control Officer: The Environmental Control Officer is appointed by the Eskom as an independent monitor of the implementation of the EMPR, the Environmental Authorization and to monitor project compliance. The ECO must form part of the project team and be involved in all aspects of project planning that can influence environmental conditions on the site. The ECO must attend relevant project meetings, conduct inspections to assess compliance with the EMPR and be responsible for providing feedback on potential environmental problems associated with the development. In addition, the ECO is responsible for: (i) Liaison with relevant authorities including cases of severe misconduct whereby the ECO could report the matter to the DEA directly; (ii) Liaison with contractors regarding environmental management; (iii) Undertaking routine monitoring and identifying a competent person/institution to be responsible for specialist monitoring, if necessary; (iv) The ECO has the right to enter the site and undertake monitoring and auditing at any time, subject to compliance with health and safety requirements applicable to the site (e.g. wearing of safety boots and protective head gear).

Department of Environmental Affairs Requirements: Monthly reporting to the DEA shall include the following information: (i) Description of all activities on site; (ii) Problem identified; (iii) Transgressions noted; (iv) A schedule of tasks undertaken by the ECO. All documentation, reports and notifications, required to be submitted to the department in terms of the environmental authorization, must be submitted to the Director: Compliance Monitoring at the department.

The ECO and Eskom shall establish a schedule and procedures for monitoring and reporting at the outset in order to: (i) identify any negative impacts from construction activities; (ii) assess the effectiveness of control measures; (iii) demonstrate compliance with regulatory conditions and objectives and targets set in the EMPR; (iv) Identify if further controls/corrective action is required. In addition, monitoring may be required as a result of a complaint, a request by a statutory body or a trigger point in an inspection or checklist being exceeded. Monitoring and reporting should also reflect any requirements identified or commitments made in the Construction Method Statement. 19

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In addition to the routine monitoring conducted by the ECO, a schedule of regular inspections, audits and reporting will be required by the contractor. These inspections should provide a record of site conditions and activities and provide a mechanism by which the contractor, ECO and Eskom can establish the effectiveness of the EMPR for each line. These checklists and reports should be kept at the site office and should be updated and used in the day to day operation of the site. The ECO shall also develop a schedule of inspections and auditing of the EMPR in order to ensure that established standards of environmental controls are being maintained by the contractor.

Monitoring and Reporting Status

The following table represent the Monitoring Report vs. the Reporting Period

Monitoring Report	Reporting Period	Year
1	01 – 30 November	2016
2	01 – 20 December	2016
3	03 – 31 January	2017
4	01 – 28 February	2017
5	01 – 31 March	2017
6	01 – 30 April	2017
7	03 – 31 May	2017
8	01 – 30 June	2017
9	17 – 31 July	2017
10	01 – 31 August	2017
11	01 - 29 September	2017
12	02 – 31 October	2017

Project activities

The following activities where taking place on site during this monitoring period:

Section A Conco:

- Deliveries
- Excavations and backfilling
- Foundation work (Concrete works)
- Tower assembly
- Tower erections
- Stringing

Section B Babcock:

- Deliveries
- Excavations & backfilling
- Foundation work (Concrete works and Micro-piling)
- Tower assembly
- Tower erections
- Stringing

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2. Compliance Status

Incident Register

The following table is a summary of recorded incidents:

Contractor & Incident No	Date	Description	Corrective Action	Preventative Measures	Status: Resolved (Yes/No)
Conco 1	22/11/2016	Land owner knocked over one of the mobile toilet on site after personnel did not confine to the roads and drove over some of his newly planted crops	ECO discussed the matter with 3land owner and also requested that with any situation he should be informed immediately to resolve matters.	EO held toolbox talk with personal and discussed issue with personnel. Anyone who does not adhere to rules on site will be death with.	Yes
Babcock 01	02/12/2016	Hydraulic oil spill took place when subcontractor changed the excavators bucket off site next to the road	The spillage was cleaned up by means of a spill kit and disposed in hazardous waste bin.	EO held toolbox talk regarding maintenance of equipment and vehicles on site and site camp	Yes
Conco 02	06/12/2016	Calf from the land owner fell into an excavation as well as dead rabbit found in different excavation due to Inadequate barricading	Landowner as notified and calf was removed from excavation, Barricading needs to be improved.	Toolbox talk held with employees	Yes
Babcock 02	19/01/2017	Service provider for the excavator maintained the plant on site without protective measures after breakdown and spilled 3L of hydraulic oil	Spillage was cleaned up and disposed of in hazardous waste skip	Toolbox talk conducted, no plant allowed to be serviced on site	Yes
Conco 03	27/02/2017	A rinhals was lying under the excavator and the operator drove over the snake.			Yes
Babcock 03	28/03/2017	Property damage, excavator from contractor damage landowners gate. Preliminary Findings:	Damage to be repaired Immediate corrective actions: 1, The	The operator will be provided with transport on regular basis to and from work.	Yes

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		1, The operator misjudged the gate space thinking the excavator will pass through. 2, Fatigue (walking about +- 10 km to work site)	machinery has been stopped from any site activities. 2, The operator would be given a day rest.		
Babcock 04	23/08/2017	Farmer called as truck driver was exceeding the speed limit on his farm.	ECO discussed this matter with the EO. It was suggested that a meeting should be held with all the truck drivers.	On the 28 th of August 2017 an email was sent from the EO to the ECO. Proof was sent that a toolbox talk was held explaining the responsibilities of all the truck drivers on site.	Yes
Conco 4	22/08/2017	Fence gate was damaged on farm which cattle can easily go through.	ECO ask the EO to address this issue as soon as possible.	During a site inspection on the 29 th of August the ECO observed that the fence is fixed.	Yes
Babcock 05	31/08/2017	Construction activities have been stopped by a landowner at tower number 155. According to the landowner they were not notified of this project. Eskom was under the influence that they have bought the servitude from Sasol. However, Eskom did not know that the land was under the name of someone else.	The EO of Eskom brought the matter to management and a meeting was arranged for the 21 st of September 2017.	After the meeting with Eskom, Landowner, Sasol and the Department, they came to a conclusion and the problem was solved.	Yes

Non-compliance Register

The following table represents the **Non-Compliance** statuses to date by ECO:

Date Opened	Site A/B	Non-Compliance	Corrective Action	Status: Open/Closed
19/12/2016	A	Inadequate topsoil management and backfilling. At various towers topsoil is mixed with subsoil during backfilling, Subsoil on the surface and surface area not levelled out.	Excess spoil must be removed and replaced with topsoil. Topsoil must then be levelled to represent the	Closed

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			natural environment,	
10/01/2017	A	Contractor Conco barricading is inadequate and does not provide effective protection.	Barricading must be fixed and barricading method readdressed as barricading is ineffective and a reoccurring issue	Closed
20/01/2017	A	Work is taking place at the contractor Conco while required documentation is not in place. Method statements are generic and not site specific or relevant to scope off works. Method Statements are not signed off by required stakeholders. Due since beginning off construction.	Conco ESO needs to review their Method Statements and align them with the site EMP, EA and WUL. Method statements should then be send to the ECO for approval. If approved the Method Statement should be signed off by the other relevant stakeholders.	Closed
15/02/2017	B	Damage to multiple protected plants (<i>Boophane disticha</i>) from the Babcock contractor	Relocation report received on 29/06/2017. Waiting formal closure from Babcock	Closed
15/02/2017	B	Continuous deviation from the agreed access routes and creating multiple tracks after rainfall.	Waiting for feedback from Babcock	Open
15/05/2017	B	Waste disposal certificates outstanding	Waiting for feedback from Babcock	Open
15/05/2017	B	The condition of existing access / private roads used are not documented with photographs	Waiting for feedback from Babcock	Open
15/05/2017	B	Incidents not being reported	Waiting for feedback	Open
22/05/2017	B	Work is taking place without required documentation. Method statement for drilling/pilling not received thus method statements not signed off	Waiting for feedback from Babcock	Open
22/05/2017	A	Work is taking place in areas without required access map, access demarcation and documented road conditions on site	Access demarcation is being put in place as per the requirements.	Open
01/06/2017	A	Anti-bird collision line marking devices are not installed as per	Waiting for feedback from	Open

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		requirements	Conco	
29/06/2017	A	Method statements not communicated to employees	The method statements were communicated to the employees on site.	Open
29/06/2017	B	Using stockpiled topsoil for construction activities,	Waiting for feedback from Babcock	Open

General Observations and Remarks

Listed below are general observations made on site and remarks:

- 47 NCR`s opened to date by client ESO:
 - 18 NCR`s opened against Conco, 10 closed.
 - 29 NCR`s opened against Babcock, 28 closed.

Section A - Conco
Bird diverters and guards still outstanding, after it was mentioned during the progress meeting that it will be done on the 10 th of October.
Contractor is not formally closing off NCR`s
Vehicles not sticking to the access roads on landowner's farm.
Workers were striking on 25 and 26 of October 2017.

Section B - Babcock
Contractor is not formally closing off NCR`s

Photos

The following table presents examples of some of the site activities and observations

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Figure 2: Stringing activities



Figure 3: Micro-piling



Figure 4: Tower Erecting



Figure 5: Assembling towers



Figure 6: Backfilling



Figure 7: Shattering completed on V-blocks