



**Plan of Study for EIA of the proposed Aurora
Omega 765kV powerline approximately 85km and
substations upgrade in Western Cape
NEAS Reference: DEA/EIA/0001573/2012
DEA REFERENCE: 14/12/16/3/3/2/443**

Draft Report

24 October 2013

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Draft Report

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NEAS Reference DEA/EIA/0001573/2012
DEA Reference 14/12/16/3/3/2/443.

October 2013

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Approved by: M. Murimbika

Signed:

Date: October 2013

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DEFINITIONS

“**Air pollution**” means any change in the composition of the air, caused by smoke, soot, dust (including fly ash), cinders and solid particles of any kind, gases, fumes, aerosols and odorous substances” (Air Quality Act, 2004).

“**Alternative**” means a different means of meeting the general purpose and need of a proposed activity” (National Environmental Management Act, 1998 (Act No. 107 of 1998), Guideline 5, June 2006). A possible course of action, in place of another, that would meet the same purpose and need (of the proposal). Alternatives can refer to any of the following but are not limited to: alternative sites for development, alternative projects for a particular site, alternative site layouts,

“**Biodiversity**” the structural, functional and compositional attributes of an area, ranging from genes to landscapes.

“**Catchment**” The area from which any rainfall will drain into the watercourse or watercourses or part of the water course, through surface flow to a common point or common points.

“**Environment**” The surroundings within which humans exist and that are made up of:

- i. the land, water and atmosphere of the earth;
- ii. micro-organisms, plant and animal life;
- iii. any part or combination of (i) and (ii) and the interrelationships among and between them; and
- iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being. This includes the economic, social, cultural, historical and political circumstances, conditions and objects that affect the existence and development of an individual, organism or group.

“**Environmental Impact Assessment**” An Environmental Impact Assessment (EIA) refers to the process of identifying, predicting and assessing the potential positive and negative social, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law and which may significantly affect the environment. The EIA includes an evaluation of alternatives. As well as recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and environmental management and monitoring measures.

“**Expansion**” means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

“Habitat” An ecological or environmental area inhabited by a particular species or that which supports a typical community of species.

“Hydrogeological” The study of distribution and movement of groundwater.

“Impact” The positive or negative effects on human well-being and / or on the environment.

“Interested and Affected Parties” Individuals, communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected by the proposal or activity and/ or who are concerned with a proposal or activity and its consequences.

“Natural Habitat” Land and water areas where (i) the ecosystems' biological communities are formed largely by native plant and animal species, and (ii) human activity has not essentially modified the area's primary ecological functions. All natural habitats have important biological, social, economic, and existence value.

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

“Phased Activities” means an activity that is developed in phases over time on the same or adjacent properties to create a single or linked entity through interconnected internal vehicular or pedestrian circulation, sharing of infrastructure, or the continuum of design, style or concept by the same proponent or his or her successors.

“Proponent” who is applying for an environmental authorisation in terms of the relevant environmental legislation.

“Construction” means the building, erection or expansion of a facility, structure or infrastructure that is necessary for the undertaking of an activity, but excludes any modification, alteration or upgrading of such facility, structure or infrastructure that does not result in a change to the nature of the activity being undertaken or an increase in the production, storage or transportation capacity of that facility, structure or infrastructure;” (National Environmental Management Act, 1998 (Act No. 107 of 1998), Regulation 386 of 2006).

“Interested and Affected Party”- refers to:

- (a) Any person, group of persons or organization interested in or affected by an activity; and
- (b) Any organ of state that may have jurisdiction over any aspect of the activity;” (R385, 2006).

“Linear Activity” - means an activity that is undertaken across several properties and which affects the environment or any aspect of the environment along the course of the activity in different ways, and includes a road, railway line, power line, pipeline or canal” (National Environmental Management Act, 1998 (Act No. 107 of 1998) Regulation 385 of 2006).

“Public Participation Process” - means a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters.”(R385, 2006). A process of involving the public in order to identify issues and concerns, and obtain feedback on options and impacts associated with a proposed project, programme or development. Public Participation Process in terms of NEMA refers to: a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to specific matters.

“Plan Of Study for environmental impact assessment” - means a document contemplated in regulation 28(1) (i) which forms part of a scoping report and sets out how an environmental impact assessment must be conducted;”(R543, 2010).

“Scoping” the process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addressed in an environmental assessment. The main purpose of scoping is to focus the environmental assessment on a manageable number of important questions. Scoping should also ensure that only significant issues and reasonable alternatives are examined.

“Significance” significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and acceptability). It is an anthropocentric concept, which makes use of value judgements and science-based criteria (i.e. biophysical, social and economic).

“Significant Impact” - means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.”(R385, 2006).

ABBREVIATIONS

BID	Background Information Document
DEA	Department of Environmental Affairs
DSR	Draft Scoping Report
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMF	Electrical and magnetic field
EMP	Environmental Management Plan
GN	General Notice
HVAC	High Voltage Alternative Current
IAPs	Interested and Affected Parties
IRR	Issues and Responses Report
kV	Kilovolts
kwh	Kilowatt hours
MW	Megawatt
NEMA	National Environmental Management Act (Act No: 107 of 1998)
Nzumbululo	Nzumbululo Heritage Solutions South Africa
PPP	Public Participation Process
SA	South Africa
ToR	Terms of Reference.

1. Introduction

Nzumbululo Heritage Solutions was appointed by Eskom Holdings SOC Limited (Transmission) to conduct an Environmental Impact Assessment (EIA) study for the proposed construction of a +/-85km 765kV transmission powerline, infrastructures and associated auxiliary and substation infrastructure from Aurora Substation to Sterrekus (Omega) substation near Koeberg in the City of Cape Town.

The proposed powerline and associated auxiliary and substation works are all listed activities as defined by GNR 545 (Listing Notice 1) of 18 June 2010 of the National Environmental:

Activity 8 (I): "The construction of facilities or infrastructure, for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex."

List other activities that are on the application form as well.

The above-defined activities require a full Environmental Impact Assessment (EIA) study, in line with the 2006 Regulations. The EIA is specifically conducted in order to acquire the environmental authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). The application for environmental authorisation for the proposed development was lodged in February 2013 with the lead environmental authority, the Department of Environmental Affairs (DEA). The DEA Application Reference for this study is 14/12/16/3/3/2/443) and NEAS: DEA/EA/0001573/2012 (Acknowledgement letter is attached in Appendix 1).

1.1. Purpose of Plan of Study

The purpose of this document is to outline how Nzumbululo Heritage Solutions will undertake the Environmental Impact Assessment study as part of a comprehensive EIA process for the proposed development. The PoSEIA indicates the proposed approach to the EIA study in order to ensure that the next phase of this EIA process satisfies the requirements of DEA by outlining the anticipated process and products of the process.

The overall process is referred to as the Environmental Impact Assessment (EIA) process, which is composed of three phases:

- The Application Phase;
- The Scoping Report Phase; and
- The Environmental Impact Assessment Phase

2. PLAN OF STUDY

2.1 DESCRIPTION OF THE TASKS TO BE PERFORMED

The EAP of Nzumbululo Heritage Solutions assisted by a team of in-house environmental officers will conduct the Environmental Impact Assessment field study. Other specialists will be retained to further identify and examine additional specialised biophysical and human environmental impacts associated with the proposed activity. The identified impacts will be assessed using the rating scales discussed in Section 2.3 below.

2.1.1 Description of Proposed Activity

The nature of the activity is described in detail in the Scoping Report. It comprises the construction of a +85km 765kV powerline, which will start from Aurora to Omega Substation in the Western Cape.

The proposed project includes the following activities:

- Equip 1 x 765kV feeder bay Aurora substation (extend existing busbar if necessary)
- Equip 1 x 765kV feeder bay Omega substation (extend existing busbar if necessary)

Single circuit 765kV power-line connecting Aurora and Omega Substations

2.2 POTENTIAL ENVIRONMENTAL IMPACTS IDENTIFIED DURING SCOPING

The Scoping investigation has reviewed the range of potential environmental impacts associated with the proposed activities. Pursuant to this assessment, which was based on input from the authorities, interested and affected parties (I&APs) and various professionals, a shortlist of potentially significant environmental impacts were identified for further and more detailed investigation during the EIA Phase. Specifically, the potential environmental impacts are described in the Scoping Report.

2.3 METHOD FOR ASSESSING THE SIGNIFICANCE OF POTENTIAL ENVIRONMENTAL IMPACTS

This section outlines the proposed method for assessing the significance of the potential environmental impacts outlined in the Scoping Report. These include both operational and construction phase impacts. For each impact, the EXTENT (spatial scale), MAGNITUDE (size) and DURATION (time scale) would be described (Table 1). These criteria would be used to ascertain the SIGNIFICANCE (consequence) of the impact, both in the case of no mitigation and with the most effective mitigation measure(s) in place. The SIGNIFICANCE of an impact is derived by taking into account the temporal and spatial scales and magnitude (Table 2). The mitigation described in the EIR would represent plausible and pragmatic measures but does not necessarily imply that they would be implemented as such. Eskom (the development proponent) will indicate at the Draft EIR phase which mitigations would be applied in cases where such intervention is recommended. Subsequent to determining the significance of an impact, the PROBABILITY of this impact occurring and the associated CONFIDENCE in the assessment of the impact would be determined (Tables 3 and 4).

All the Specialist studies proposed for the proposed construction of the power line and substation will use ratings provided above when assessing the potential impacts. The concerns raised by the I&APs on impacts will be taken into consideration and recommendations will be made in order to avoid or minimise the negative impacts.

Table 1: Assessment criteria for the evaluation of impacts.

CRITERIA	CATEGORY	DESCRIPTION
Extent or spatial influence of impact	Regional	Beyond a 10 km of the site boundary
	Local	Within a 10 km of the site boundary
	Site specific	On site or within 10 m of linear infrastructure Corridors
Magnitude of impact (at the indicated spatial scale)	High	Natural and/ or social functions and/ or processes are severely altered.
	Medium	Natural and/ or social functions and/ or processes are notably altered.
	Low	
	Very Low	Natural and/ or social functions and/ or processes are slightly altered.
	Zero	
		Natural and/ or social functions and/ or processes are negligibly altered.
		Natural and/ or social functions and/ or processes remain unaltered.
Duration of impact	Construction period	Up to 5 years
	Medium Term	0-10 years after construction
	Long Term	More than 10 years after construction

Table 2: Definition of significance ratings.

SIGNIFICANCE	DESCRIPTIVE RATINGS
High	<ul style="list-style-type: none"> • High magnitude with a regional extent and long term duration • High magnitude with either a regional extent and medium term duration or a local extent and long term duration • Medium magnitude with a regional extent and long term duration
Medium	<ul style="list-style-type: none"> • High magnitude with a local extent and medium term duration • High magnitude with a regional extent and construction period or a site specific extent and long term duration • High magnitude with either a local extent and construction period duration or a site specific extent and medium term duration • Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Low magnitude with a regional extent and long term duration
Low	<ul style="list-style-type: none"> • High magnitude with a site specific extent and construction period duration • Medium magnitude with a site specific extent and construction period duration • Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Very low magnitude with a regional extent and long term duration
Very low	<ul style="list-style-type: none"> • Low magnitude with a site specific extent and construction period duration • Very low magnitude with any combination of extent and duration except regional and long term
Neutral	<ul style="list-style-type: none"> • Zero magnitude with any combination of extent and duration

Table 3: Probability rating estimations

PROBABILITY	DESCRIPTIVE RATING
Definite	Estimated greater than 99 % chance of the impact occurring.
Highly probable	Estimated 80 to 99 % chance of the impact occurring.
Probable	Estimated 20 to 80 % chance of the impact occurring
Possible	Estimated 1 to 20 % chance of the impact occurring.

Unlikely	Estimated less than 1 % chance of the impact occurring.
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Table 4: Confidence ratings

LEVEL OF CONFIDENCE	DESCRIPTIVE RATING
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing impact
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

2.4 SPECIALIST STUDIES

The following will be explained in detail and the specialist input will be used to address the following issues:

- Baseline Environmental Condition
- Potential Environmental Impacts
- Alternative
- Mitigation measure (Draft environmental management plan)
- Risk assessment and evaluation after closure

The following specialists have been retained by Nzumbululo Heritage Solutions to further investigate the key potential impacts on the proposed project's receiving environment.

Table 5: Project Specialists

Study	Company	Specialists
Public Participation Process	Sustainable Futures ZA	Shawn Johnston 083 325 9965
Heritage Impact Assessment	A team of independent heritage specialists	Aco Associates
Wetland	RHDHV	E. Hierdien 021 945 4114
Visual	Axis Landscape Architects	Gerhard Griesel 083 415 6266
Avifauna	Chris van Rooyen Consulting	Chris van Rooyen

Study	Company	Specialists
		082 454 9570
Agriculture	ARC	Garry Peterson 083 648 2599
Socio- Economic	SSI	K. Moonsamy 083 604 1374
Ecology	Simon Todd consulting	Simon Todd 027218 1276

3. PUBLIC PARTICIPATION PROCESS (PPP)

Public Participation Process is a legislated and regulated mandatory exercise that forms part of the EIA exercise. The process runs concurrently with both scoping and EIA phases of the entire EIA exercise of the proposed development. The process kicks off with the identification of Interested and Affected Parties (I&APs). This identification exercise will continue as the study proceeds. At this stage I&APs, are being identified, contacted and informed about the project through electronic mailing system and hard copies mailed letters and the publication of the Background Information Document (BIDs). Copies of the BIDs will be distributed through out the study area and they could also be accessed from different key public area and an on-line platform. Furthermore, notices of the project and invitation to register on the I&AP Register were posted at different places along the proposed power line routes and the entire project area particularly in towns and farms located within close proximity to the proposed alternative powerline routes.

As per legislated procedures, the Draft Scoping Report (DSR) and the Draft Environmental Impact Assessment Report (EIR) will be circulated to key stakeholders for their review and commenting. The I&APs will be able to access the report at public libraries and municipalities along the affected project areas. The commenting authorities in the Western Cape Provinces, including Western Cape Provincial Environmental Affairs and Development Planning, the South African Heritage Resource Agency, Farmers Unions and the Department of Agriculture, Forestry and Fisheries will also receive the report for their commenting.

All I&APs will be afforded an opportunity to raise objections, issues and comments on the Draft Scoping Report and send these comments and issues via a dedicated e-mail, fax; telephone or post office to the Environmental Assessment Practitioner (EAP) at Nzumbululo Heritage Solutions whose contact details will be published along these notices about the study or to the public participation officer whose details are also found on the notices.

All comments and issues that may be raised by key stakeholders and I&APs will be recorded and considered by the EAP in finalising the reports. The final Scoping Report will be compiled and submitted for evaluation and consideration of the Department of Environmental Affairs (DEA). The Next Phase of the study would consist of the EIA Phase, which can be undertaken after the DEA has issued their response and approval on the Scoping Report. Therefore, the decision on the proposed development will be made after the DEA has considered the scoping and the final Environmental Impact Assessment Report (EIAR) following which they may grant permission or Environmental Authorisation. Thereafter, I&APs will have yet another opportunity to consider the DEA decision and make their representations where necessary in an appeal process if they so choose. The final approval of the development may be considered after all appeals have been successfully dealt with and the final pronouncement is made by the DEA.

Sample Public Notice and Advert for the EIA process for the proposed activity.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS (EIA)

Proposed Aurora-Omega 765kV powerline for approximately 85km and both substations upgrade, Western Cape Province

NEAS Reference: DEA/EIA/0001573/2012

DEA reference number 14/2/16/3/3/2/443

Notice is hereby given in terms of the Environmental Impact Assessment Regulations, published in Government Notice No. R543 of 02 August 2010 of activities identified in terms of Sections 24 and 24D of the National Environmental Management Act of 1998 (Act No. 107 of 1998), as amended, Eskom Holdings SOC Limited proposes to develop a new 765kV transmission powerline from Aurora Substation to Sterrekus (Omega) substation near Koeberg in the City of Cape Town. Nzumbululo Heritage Solutions, on behalf of Eskom Holdings SOC Limited, are conducting an Environmental Impact Assessment process for above referenced proposed development.

The project scope includes the following:

- Construction of a new 765kV transmission power line between the Aurora and Omega substation HV-yard, a total of 85km; and,
 - The upgrade of the Aurora and Omega substations HV-yards to accommodate the new line.

In terms of Government Notices No. R545 (Listing Notice 2) Activity No. 8 applies to the proposed development, i.e.

The construction of facilities or infrastructure for the transmission and distribution of electricity with the capacity of 275 kilovolts or more, outside an urban area or industrial complex.

LOCATION

- The project area is located within Western Cape Province in the following municipalities:
 - Saldanha Bay Municipality;
 - West Coast District Municipality;

- Swartland Municipality; and,
- City of Cape Town (Cape Metro)

DRAFT SCOPING REPORT AVAILABILITY

The draft scoping report for the Aurora-Omega transmission line environmental impact assessment will be available from Thursday, 24 October 2013 until Tuesday, 14 January 2014 at the following public venues:

- Darling Public Library;
- Mamre Public Library;
- Atlantis Public Library; and,
- Duynfontein Public Library

Project contact details are as follows:

Public Participation facilitator	Environmental Practitioner	Applicant
Shawn Johnston of Sustainable Futures ZA P.O. Box 749, Rondebosch, 7701, Cape Town Tel: 083 325 9965 Fax: 086 510 2537 E-mail: swjohnston@mweb.co.za	Hellen Mlotshwa of Nzumbululo Heritage Solutions P.O. Box 4106 Half House 1685 Tel: 011 312 2624 Fax: 086 544 2177 Email: mlotshwah@nzumbululo.com	Kentridge Makhanya Eskom Holdings SOC Limited Megawatt Park Maxwell Drive Sunninghill, Sandton P.O Box 1091 Johannesburg 2000

Feasible transmission line alternatives will be identified for investigation within the broader Aurora- Omega **study areas** within the EIA process. This information will be provided to Interested and Affected Parties (I&APs) through the EIA process. To obtain further information and register as a I&APs on the project database, please

submit your name, contact information, interest and issues in this project to the Public Participation Facilitator above.



**SUSTAINABLE
FUTURES ZA**



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3.1 PUBLIC COMMENT ON THE DRAFT EIR

The Draft EIR will be lodged at appropriate venues (including the Public Library/ Municipality Offices. Registered I&APs will be notified of the lodging by means of letters, and given a 40-day period in which to comment on the report. During the comment period, a public meeting will be held to enable I&APs to provide feedback on the draft report. The public meeting will be advertised in the local media and in the letters informing registered I&APs of the release of the Draft EIR. The public comments would be consolidated into an Annexure of the EIR. This would take the form of an Issues Trail, which would summarise the issues raised and provide responses thereto. The draft report would then be revised in light of feedback from the public.

3.2 OPPORTUNITY FOR APPEAL

All registered I&APs would be notified in writing of the release of the Environmental Authorization. They would be reminded of their right to appeal against DEA's decision to the national Minister, in terms of the environment legislation and regulations.

4. PROJECT ALTERNATIVES IDENTIFIED DURING SCOPING

The Scoping investigation has reviewed the project alternatives associated with the proposed powerline. Section 8 of Scoping Report describes the alternatives. The

following reasonable project alternatives have been identified for further, more detailed investigation during the EIA Phase:

- Alternative alignments for the powerline servitude

5. THE ENVIRONMENTAL IMPACT REPORT [EIR]

The purpose of the EIR would be to undertake a comparative assessment of the significance of the potential environmental impacts of the project alternatives outlined. The EIR would thus include the following:

- A brief overview of the potential environmental impacts and reasonable alternatives identified during the Scoping Phase.
- A summary of the key findings of the various specialist studies.
- An overview of the public participation process conducted during the compilation of the EIR.
- A detailed assessment of the significance of the potential environmental impacts for the various project alternatives. This assessment, which would use the methodology outlined in Section 2.4, would be informed by the findings of the specialist studies, professional judgment of the environmental practitioners, inputs from the Eskom technical team and comment from the various I&APs.
- An overview of the full range of mitigation measures including an indication of how these would influence the significance of any potential environmental impacts. These mitigation measures would be informed by the specialist studies, professional experience of the environmental practitioners, input from the technical team and comment received from the I&APs.
- A construction phase Environmental Management Plan (EMP) to minimise the impacts of the construction phase.
- A generic operational phase EMP, which would set environmental guidelines for the operation phase of the proposed power line and associated infrastructure.

5.1. DISTRIBUTION OF ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR)

The draft EIR will be prepared based on the issues identified during the scoping and impact assessment phase and the results from specialist studies. After inclusion of comments from the I&APs, the final EIR will be submitted to DEA.

5.2. AUTHORITY REVIEW

The final EIR will be submitted to DEA for Decision Making.

6. SCHEDULE OF TASKS FOR THE EIA PROCESS

The schedule of tasks below have been created on the assumption that this PoSEIA and scoping report will be approved by the Department of Environmental Affairs. There after, the EIA process would proceed as approved.

Table 7: Proposed Schedule of activities

ACTIVITY	DATE
Submission of scoping report and plan of study for EIA	March 2014
Approval of scoping report and plan of study by DEA	July 2014
Public Participation Process will continue, as it is an on going process.	August 2014
Circulation of draft EIR to I&Aps	October 2014
Comments from I&AP	January 2015
Final EIR (including Issues and Response Report) to DEA	March 2015
Notification to I&APs of outcome of Environmental Authorisation	May 2015

7. CONCLUSION

This plan of study for EIA serves as a guiding tool to DEA, and it informs the authority on how the impact assessment exercise pertaining to the proposed development will be conducted. DEA will review this plan of study for the EIA study and provide a decision if the EAP may proceed to the Impact Assessment phase of the project.

Nzumbululo Heritage Solutions, independent EIA consultants appointed by Eskom SOC Limited, believe that the process outlined in this draft PoSEIA is fully compliant

with the requirements of environmental and other auxiliary legislations and applicable regulations. Nzumbululo Heritage Solutions has both the resources and relevant experience to undertake the approach outlined in this document to the satisfaction of both DEA and I&As.

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