

**ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED
260 KM PERSEUS-HYDRA, 12KM PERSEUS-BETA AND 33KM
PERSEUS-HYDRA 2 EXTENSION, 765kV TRANSMISSION POWER
LINES**

PLAN OF STUDY FOR SCOPING

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LIST OF ABBREVIATIONS

ARCUS GIBB	ARCUS GIBB (Pty) Ltd
BID	Background Information Document
DEAT	Department of Environmental Affairs and Tourism
DSR	Draft Scoping Report
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
ESKOM	Eskom Holdings Limited
FS DTEEA	Free State Department of Tourism, Environmental and Economic Affairs
FSR	Final Scoping Report
I&APs	Interested and Affected Parties
IDZ	Industrial Development Zone
km	Kilometre
kV	Kilo volt
m	metre
NCP DTEC	Northern Cape Province Department of Tourism, Environment and Conservation
PIP	Public Involvement Process
PoS	Plan of Study
RoD	Record of Decision

1 INTRODUCTION

1.1 Details of Applicant

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1.2 Details of Consultant

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1.3 Details of Environmental Authorities

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1.4 Proposed development

Eskom Holdings Limited (Eskom) Transmission Division proposes to construct a 765 kV transmission power line between Secunda and Port Elizabeth. The power line will provide the Coega Industrial Development Zone (IDZ) with electricity. The total length of the proposed power line is 1 300 km.

In terms of Section 21 of the Environment Conservation Act, 1989 (Act 3 of 1989) ("the Act"), the proposed project is identified as an activity, which may have a substantial detrimental effect on the environment. The proposed activity is identified in Schedule 1 of GN R.1182 (as amended) as follows: - "The construction, erection or upgrading of facilities for commercial electricity generation with an output of at least 10 megawatts, and infrastructure for bulk supply."

The proposed construction of transmission lines accordingly requires authorisation in terms of the Act from the Department of Environmental Affairs and Tourism (DEAT) prior to commencement. In order to inform this decision, an Environmental Impact Assessment (EIA) is required to assess the potential impacts of the proposed project on the receiving environment.

In order to facilitate the EIA process the proposed power line has been divided into three sections, with three separate EIAs being submitted to the relevant environmental authorities, each requiring a separated RoD. The first section of the power line runs from Secunda to Dealesville, the next from Dealesville to De Aar, and the third from De Aar to Port Elizabeth.

ARCUS GIBB (Pty) Ltd (ARCUS GIBB) has been appointed as the environmental consultant for the EIA for Dealesville to De Aar section of the line. A PoS was submitted to the relevant authorities but since the previous submission the scope of the project has changed and now entails:

- One 765 kV Transmission Line, approximately 260 km in length, between the Hydra (De Aar, Northern Cape) and Perseus (Dealesville, Free State) Substations
- A 765 kV Transmission Line of approximately 12 km from Beta Substation (SSE of Dealesville) to Perseus Substation; and

- A 765 kV Transmission Line of approximately 33 km from a point on the current 400 kV Beta Hydra 2 Transmission Line to Perseus Substation.

This PoS serves as a revision to the previously submitted document .

The towns of De Aar, Phillipstown, Petrusville, Vanderkloof, Luckhoff, Koffiefontein, Petrusberg and Dealesville are located within the study area.

765kV lines require towers with an average height of 50m and a tower separation distance of 400m. Each line will require around 650 compact cross-roped towers and an 80-100m wide servitude. The construction cost of a 765kV line currently stands at R25million/km. Between the Perseus Sub-Station and the Hydra Sub-Station there are four existing power lines each with their own power line servitude. The existing power line servitudes are being investigated as possible alternative alignments routes for the power line, together with new routes (see **Section 3.3.1**).

1.5 Scope of Work

The Scope of Work entails a fully detailed EIA for the proposed 765kV transmission power lines. The EIA shall include the evaluation of possible alternative line routes.

The project is also required to ensure:

- Compliance with the Environment Conservation Act (Act 73 of 1989);
 - That the process complies with the Guidelines that pertain to the Environmental Impact Assessment Process (i.e. Department of Environmental Affairs and Tourism Guideline Document: EIA Regulations, April 1998); and
 - That the process adheres to the principles of the National Environmental Management Act, 1998 (Act 107 of 1998). In this regard, the environmental assessment must address both the biophysical and socio-economic issues related to the proposed project and suggest practical mitigation or enhancement measures.
-

1.6 The Environmental Impact Assessment Process

The EIA for the proposed transmission power line development will be undertaken in three phases, namely an:

- Initial Phase;
- Scoping Phase; and
- EIA Phase.

The process of Public Involvement will be undertaken during all of the phases.

1.6.1 Initial Phase

The Initial Phase of the EIA involved: the initiation of the project, a start-up meeting with the EIA team and ESKOM. The project start-up meeting was held on the 14th July 2005 at Megawatt Park. A Pre-Application meeting with ESKOM, the consultant and the authorities was held on 22 August 2005 at DEAT National offices in Pretoria.

A meeting with DEAT, ESKOM and the consultant, to discuss the change of scope of the project has been scheduled for 22 February 2006.

1.6.2 Scoping Phase

The Scoping Phase of the proposed project will comprise drafting of the PoS for Scoping, submission of EIA application forms and compilation of the Scoping Report (including specialist studies). A Specialist Workshop was held on 15 August 2005 at ARCUS GIBB offices and site visits were held on the 24-26 August 2005 (3 days).

1.6.3 Environmental Impact Assessment Phase

The EIA phase forms the third phase of the proposed project. This includes a detailed environmental assessment process which will incorporate drafting the PoS for EIA, compiling the Environmental Impact Report (EIR), conducting further specialists' studies (if required), authority consultation and the assessment of identified impacts.

1.6.4 Public Involvement Process

The PIP phase will run concurrently with Phase 1 to 3 and will involve:

- Identification of stakeholders (I&APs);
- Project announcement through adverts, personalised letters, Background Information Document (BID), public notices, website, etc.;
- Identification of issues through key stakeholder workshop, public open days, comment sheets, etc.;
- Verification of Issues
- Feedback to I&APs by notification of the EIA phase and RoD; and
- Record keeping such as public documents, correspondence, records of meetings and all other interactions.

2 APPROACH TO INITIAL PHASE

2.1 Introduction

The following section describes the tasks that will be carried out during the Initial Phase of the project.

The objective of the Initial Phase is to introduce the client (Eskom), the consultant (ARCUS GIBB), authorities and to define the scope of the EIA process.

The Initial Phase will comprise the following tasks:

- Pre-application meeting with environmental authorities:
 - ✓ Department of Environmental Affairs and Tourism (DEAT),
 - ✓ Free State Department of Tourism, Environmental and Economic Affairs (FS DTEEA), and
 - ✓ Northern Cape Province Department of Tourism, Environment and Conservation (NCP DTEC); and the
 - Submission of EIA application forms (registration of EIA) and Plan of Study (PoS) for Scoping (**Appendix 1**).
-

2.2 Pre-application meeting and site visit with environmental authorities

ARCUS GIBB held a Pre-Application meeting with officials from the National Department of Environmental Affairs and Tourism (DEAT) on 22 August 2005. A similar meeting was held with the Free State Department of Tourism, Environmental and Economic Affairs (FS DTEEA) on 30 August 2005. The Northern Cape Province Department of Tourism Environment and Conservation (NCP DTEC) was invited to attend both meetings but representatives could not attend.

The aim of these meetings were to establish a record of understanding with respect to the EIA process, authority involvement, as well as target dates for deliverables and their review. The agenda for the meetings and copy of the presentation delivered are attached (**Appendix 2**).

2.3 Submission of EIA application forms and Plan of Study for Scoping

The appropriate EIA application forms (for each Department/Province) have been completed and submitted to the Regional DEAT officials as required by the EIA regulations.

3 APPROACH TO SCOPING STUDY

3.1 Introduction

This section describes the tasks that will be carried out during the Scoping Study for this project.

The objective of the Scoping Study will be to identify potential environmental (socio-economic and biophysical) impacts, consider various options for alternative line routes and identify and address issues of concern for stakeholders.

The Scoping Study will comprise the following tasks:

- Identification of stakeholders;
 - Obtain written authorisation from Authorities on PoS;
 - Compilation of an electronic stakeholder database;
 - Advertising the Scoping Study in local media;
 - Compilation of a Background Information Document (BID);
 - Sending out personalised letters to key stakeholders advising them of the Scoping Study;
 - Key stakeholder briefing sessions and workshop;
 - Compilation of a stakeholder issues report for inclusion in the Scoping Report;
 - Technical assessment of alternatives;
 - Compilation of a Draft Scoping Report (DSR);
 - Advertising the availability of the DSR;
 - Distribution of the DSR to public places;
 - Hold public meeting to obtain stakeholder feedback on the DSR;
 - Compilation of the Final Scoping Report (FSR) and submission to authorities;
 - PIP Report as an addendum to the FSR;
 - Distribution of the FSR to key stakeholders; and
 - Sending out progress feedback letters to stakeholders.
-

3.2 Stakeholder engagement in the Plan of Study phase

EIA announcements will be placed in various national and regional newspapers, as required by the EIA Regulations. In addition to this, a BID will be prepared for distribution, personalised letters will also be sent out to key stakeholders such as authorities and on-site notices will be placed in public places.

Stakeholder briefing sessions will be held with key stakeholders. This will be followed by a press release in the broadcast media, and the compilation of an electronic stakeholder database.

3.3 Technical assessment of alternative line routes

3.3.1 Proposed line alternatives

Alternative power line alignments as determined by the EIA and specialist team during the site visit are as follows (described from existing 765 kV transmission line westwards):

- **Alternative 1: Existing 765kV route** – 200 metres from the existing 765 kV transmission line chosen as to contain the routes in one large corridor.
- **Alternative 2: Eastern Route Alignment** – 2 km from the 765 kV transmission line - chosen as a result of the need to avoid the saline soils and pans as these are visually sensitive relative.
- **Alternative 3: Centre Route Alignment** - Approximately 5 km from the 765 kV transmission line – as above but additionally the higher lying landform and plains interrupted by dolerite remnant landforms of plateau and koppies. These will provide occasional screens and backdrops to the line.
- **Alternative 4: Western Route Alignment** - Approximately 10 km from the 765 kV transmission line – chosen to be visually disassociated with the existing lines and to be on the higher ground – yet able to be visually screened along portions of its length by ridges, plateaux and koppies.
- **Alternative 5: Cross-over Route Alignments** – combinations of above alternatives.

Although options for the 12km and 33km lines are limited, alternative route alignments for these will also be investigated.

The alternative routes are shown in Figure 1. Alternatives are based on site observations that identified the following constraints and requirements:

- Four major transmission line routes exist between the Perseus and Hydra Substations. The new transmission line will have to be either west or east of these.
- The transmission line route should minimise the need to change direction.
- Possible sensitive areas to the east of the existing line.

3.3.2 Assessment of power line alternatives

The project team will investigate the various alternatives described above and will evaluate these alternatives by taking into account the following:

(i) Environmental factors

- Ecology (flora and fauna including avi-fauna);
- Heritage resources;
- Aesthetic and visual impacts;
- Socio-economic factors;
- Geology and the potential for soil erosion; and
- Issues raised by Interested and Affected Parties (I&APs).

(ii) Logistical and technical factors

- Technical, including geological suitability etc.;
- Distance; and
- Accessibility of transmission line routes.

(iii) Cost factors

- The approximate cost for constructing the transmission lines.

All sensitive areas will be mapped and these will be avoided wherever possible when selecting possible routes. The preferred route will be selected using an objective comparison of all the proposed routes and by ranking them according to their potential impacts.

3.3.3 Identification of potential biophysical and socio-economic impacts

The various specialist studies that will be conducted will include:

- Agricultural assessment;
 - Archaeology and heritage;
 - Avi-fauna;
 - Ecological (fauna, flora and habitat component);
 - GIS assessment;
 - Socio-economic and tourism potential; and
 - Topography, terrain, climate, geology and soils;
 - Visual and aesthetics.
-

3.4 Compilation of the Draft Scoping Report (DSR)

Section 3.2.3.1 of the “Guideline Document: EIA Regulations – Implementation of Sections 21, 22 and 26 of the Environmental Conservation Act (April 1998)” issued by the Department of Environmental Affairs and Tourism: Sub-Directorate Environmental Impact Management contains a suggested format for Scoping Reports. The format suggested below is consistent with this approach.

The DSR will include the following components:

- A brief description of the proposed development, the various alternatives and the affected environment;
 - A brief description of how the environment could be affected by the development proposals;
 - A description of the environmental issues identified during the consultation process;
 - A description of the consultation process;
 - A technical assessment of the various road alternatives and of the potential biophysical and socio-economic impacts; and
 - Conclusions and recommendations on the way forward.
-

3.5 Compilation of the Final Scoping Report (FSR)

The DSR will be updated with an Addendum Report, which will include the I&APs written comments received during the Comments Period. Thereafter, the FSR will be submitted to DEAT, the Northern Province and Free State offices for their formal consideration. In addition to this, a progress feedback letter will be sent to all registered stakeholders.

3.6 Stakeholder engagement in the Scoping Phase

Key stakeholder workshop(s) will be held and an issues report will be compiled for inclusion into the Draft Scoping Report (DSR). The DSR will then be made available for public review in public places. In addition to this, the availability of the DSR will be advertised and individual letters will be sent out to registered stakeholders. The DSR will be sent to the authorities for their comment. A public meeting will be held after the public and registered stakeholders have reviewed the DSR in order to obtain their feedback. This feedback will be used to compile the FSR as discussed above.

3.7 Scoping Phase programme

We estimate that the study will take approximately 5 months and envisage the submission of the DSR to the authorities for review in April 2006 and the FSR to the authorities by mid June 2006. A decision by the environmental authorities is therefore expected at the beginning of July 2006.

4 CONCLUSION

This plan of study is aimed at meeting the requirements of the EIA Regulations as a minimum, and achieving the objectives of the Scoping Phase in identifying potential environmental impact and stakeholder concerns.


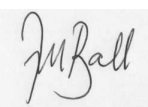

We trust that the above will meet with your approval. Should you have any queries please contact either Jaana-Maria Ball (0836505489; jball@gibb.co.za)

Yours sincerely
For and on behalf of ARCUS GIBB (Pty) Ltd

JAANA-MARIA BALL
Director and Head: Environmental Services

DOCUMENT CONTROL SHEET (FORM IP180/B)

CLIENT : Eskom Holding Limited – Transmission Division
PROJECT : Perseus-Hydra 765kV Power Transmission Line
 Hydra Extension to Perseus 765kV Power Transmission Line
 Perseus-Beta 765kV Power Transmission Line
TITLE : Plan of Study for Scoping
PROJECT NO: J25235A

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