

HYDRA-PERSEUS AND BETA-PERSEUS 765KV TRANSMISSION POWER LINES ENVIRONMENTAL IMPACT ASSESSEMENT

ADDENDUM TO ENVIRONMENTAL SCOPING REPORT (FINAL)

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GLOSSARY

ACER	ACER Africa Environmental Management Consultants
ARCUS GIBB	ARCUS GIBB (Pty) Ltd
DEAT	Department of Environmental Affairs and Tourism
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMP	Environmental Management Plan
ESR	Environmental Scoping Report
ESKOM	Eskom Holdings Limited
I&APs	Interested and Affected Parties
km	kilometre
kV	Kilovolt
m	metre
NEMA	National Environmental Management Act, 1998 (Act 107 of 1998)
PPP	Public Participation Process

1 INTRODUCTION

1.1 Background

The Transmission Division of Eskom Holdings Limited (Eskom) proposes to construct three new 765 kV transmission power lines of varying length between Dealesville in the Free State Province and De Aar in the Northern Cape Province. The power lines form part of Eskom's larger network strengthening programme, which aims to meet increased electricity demand in South Africa, specifically the Western and Eastern Cape regions.

The proposed project will entail the following:

- Establishment of one 765 kV transmission power line, approximately 260 (maximum 290 km) km in length, between the Perseus Substation near Dealesville and the Hydra Substation near De Aar;
- Establishment of two 765 kV transmission power lines, approximately 12 km in length, between the Perseus Substation near Dealesville and the Beta Substation south-west of Dealesville; and
- Expansion of the existing Perseus Substation in order to accommodate the additional incoming and outgoing 765 kV transmission power lines.

In terms of legislation, authorisation is required from the Department of Environmental Affairs and Tourism prior to the construction of the proposed infrastructure. Accordingly, an Environmental Impact Assessment (EIA) has to be conducted, and the information presented to the authorities for decision-making. The EIA process as prescribed by Regulations consists of a Scoping phase (preliminary investigations) and EIA phase (detailed investigations), and includes a public participation process (PPP).

The Scoping phase of the EIA process had largely been concluded in April 2006, and the outcome thereof was documented in an Environmental Scoping Report (ESR), dated 4 May 2006. The Scoping phase study focussed on a broad environmental assessment of the study area, and included preliminary specialist investigations and identification of relevant, sensitive biophysical and socio-economic aspects and areas. The main purpose was to identify and evaluate possible alignment corridors for the proposed power lines, and to identify preferred alignment corridors and related environmental issues that require further detailed investigation during the EIA phase.

The ESR accordingly provided a broad description of the preliminary biophysical and socio-economic issues related to the proposed project. The report contained a detailed project description, an evaluation of alternatives, a detailed record of the PPP, the outcome of preliminary specialist investigations, and defined the scope of further detailed investigations to be conducted during the EIA phase.

In order to allow input by stakeholders into the process, as required by legislation, significant consultation took place during the Scoping phase to provide Interested and Affected Parties (I&APs) an opportunity to present comments and raise concerns regarding the proposed project. The ESR was also made available for stakeholder review and comment. The stakeholder engagement and PPP is an iterative procedure, and will continue throughout the remainder of the EIA process.

1.2 Document Purpose and Structure

Following the finalisation of the ESR, the document was submitted to authorities and made available to I&APs for comment in May 2006. The commenting period for I&APs ended on the 9th of June 2006.

The purpose of this document, serving as an Addendum to the ESR of 4 May 2006, is to document all comments received during the above commenting period (in a so-called 'Comments and Response Report' – Appendix 2), to provide a response to the issues raised, and to provide more detailed information or clarification on specific matters as required.

In addition to the above, some inaccuracies contained in the ESR have been rectified in this ESR Addendum report. Further detail on project-specific technical aspects has also become available or has been updated as the design phase of the project progressed. These aspects have also been included, and relate to the following:

- The need and justification for the proposed transmission lines; and
- Clarification and/or more detail on technical aspects such as servitude width, size of substation expansion, tower type and dimensions, and ground clearance.

The ESR Addendum has accordingly been structured to provide the following:

- An overview of the PPP during the comment period (Section 2);
- Clarification and additional information on technical aspects related to the project need and desirability (Section 3), project scope and specifications (Section 4), the no-go alternative (Section 5), review of the scope of investigations for the EIA phase (Section 6), and proposed way forward (Section 7); and
- Additional information contained in appendices, including the Public Participation Process Report (Appendix 1), Comments and Response Report (Appendix 2) and Amended Plan of Study for EIA (Appendix 4).

This ESR Addendum report will be submitted to authorities for review, and will be included in the Environmental Impact Report (EIR), which will be distributed for comment to I&APs during September 2006.

2 PUBLIC PARTICIPATION PROCESS

Following on from the intensive PPP that was followed during the Scoping phase, which included direct interaction through a stakeholder workshop and a number of focus group meetings, a number of activities were undertaken to facilitate the review of the ESR by I&APs. A summary of these activities is provided below (Refer to Appendix 1 for more detail).

2.1 I&AP Notification and ESR Distribution

The period for comment on the ESR commenced on 12 May 2006 and was concluded on 9 June 2006, i.e. a period of 4 weeks. I&APs were informed of the availability of the ESR and their opportunity to comment through various media between 7 and 12 May 2006, including:

- Personalised letters to all registered I&APs;
- Telephonic contact with key stakeholders; and
- Advertisements in several local, regional and national newspapers.

All written correspondence was conducted in both Afrikaans and English. Letters to I&APs included the Executive Summary of the ESR and a Comment Sheet. All communications specified the comment period, and indicated where the ESR would be made available.

Hard and electronic copies of the ESR, together with comment sheets and viewing registers, were made available at 10 public venues within the study area. Electronic and/or hard copies of the ESR were distributed to a number of key stakeholders, including municipalities, parastatals, provincial environmental authorities, DME and NGOs. The ESR was also posted on Eskom's website.

2.2 I&AP Commenting Process

I&APs were afforded the opportunity to submit comments either by mail, fax or e-mail. Telephonic questions/queries were also processed. Where required, assistance was provided to facilitate understanding of the ESR and PPP.

Records of all comments received were kept, and the comments captured within the Comments and Response Report (Appendix 2). All comments will be incorporated into the EIA phase investigations as relevant. This does however not preclude the consideration and incorporation of any other comments received as the PPP progresses.

2.3 Key Issues Raised

A number of key issues were raised during the comment period. These are either responded to/clarified in this document, and/or will be taken into the EIA phase for further detailed consideration.

The key issues raised by I&APs and key stakeholders are summarised below in no particular order of importance (detailed in the Comments and Response Report; Appendix 2):

- Comment regarding the town of Orania contained in the Archaeological and Heritage Specialist Report considered offensive / derogatory;
- Comments relating to specific sensitive heritage, archaeological and cultural sites in the study area;
- Constraints posed by the proposed lines on agricultural activities (grazing and irrigation), drilling for water etc.;
- Impacts on existing and planned eco-tourism activities;
- Effects on existing distribution lines and telecommunications equipment;
- Safety and security during construction, including construction camps and fires;
- Visual impacts;
- Protection of heritage resources;
- Proximity of proposed lines to existing and planned homes;
- Different options of compensation for the servitudes required;
- No more power lines acceptable on certain properties;
- Electro-magnetic fields (EMFs) and associated health risks are to be investigated;
- Unclear alternative analysis methodology and insufficient motivation for limiting further investigations during the EIA phase to only the two preferred alternative alignment corridors identified in the ESR;
- Apparent contradiction between certain specialist reports;
- All stakeholders must be informed of the proposed project;
- Communication of the project advantages and disadvantages to the community;
- Clarification of project timeframes;
- Exact alignment of the proposed lines to be specified;
- Detail of socio-economic impacts with respect to eco-tourism, hunting etc. required;
- Alternative alignments for the Beta-Perseus lines not identified;
- Additional impacts expected during construction; and
- Clarification of the activities allowed (and not allowed) within the power line servitudes.

3 PROJECT NEED AND DESIRABILITY

Section 3.3 of the ESR provided a description of the Project Need and Desirability. Additional, up-to-date information in addition to that provided in the ESR with respect to the current network capabilities, and the existing and future predicted total demand in the Port Elizabeth area, have since become available.

3.1 Network Strengthening

Eskom is responsible for the generation, transmission and distribution of electricity in South Africa. Due to unexpected development, economic and industrial growth, and electricity provision to previously disadvantaged areas, electricity demand continues to increase in South Africa, and the country's ability to meet the current and future demand has recently been the subject of much media interest.

The proposed transmission power lines that are the subject of this EIA form part of a broader project to strengthen the existing electricity network between Mpumalanga, where most power is generated, and the Western and Eastern Cape, where power demand is set to exceed the available supply (Figure 1). One of the main components of the broader network-strengthening project is the construction of a 765 kV transmission power line between Secunda (Mpumalanga) and Port Elizabeth (Eastern Cape). The power line is necessary in order to satisfy the increasing demand for electricity in the broader Western and Eastern Cape, and in particular, the Coega Industrial Development Zone (IDZ). The total length of the proposed power line, from Secunda to Port Elizabeth, is approximately 1 300 km.

The establishment of the transmission lines would require the registration of a number of servitudes (Figure 2) and construction is to be finalised by 2009, in order to enable Eskom to fully commission the lines by 2010 (Figure 3).

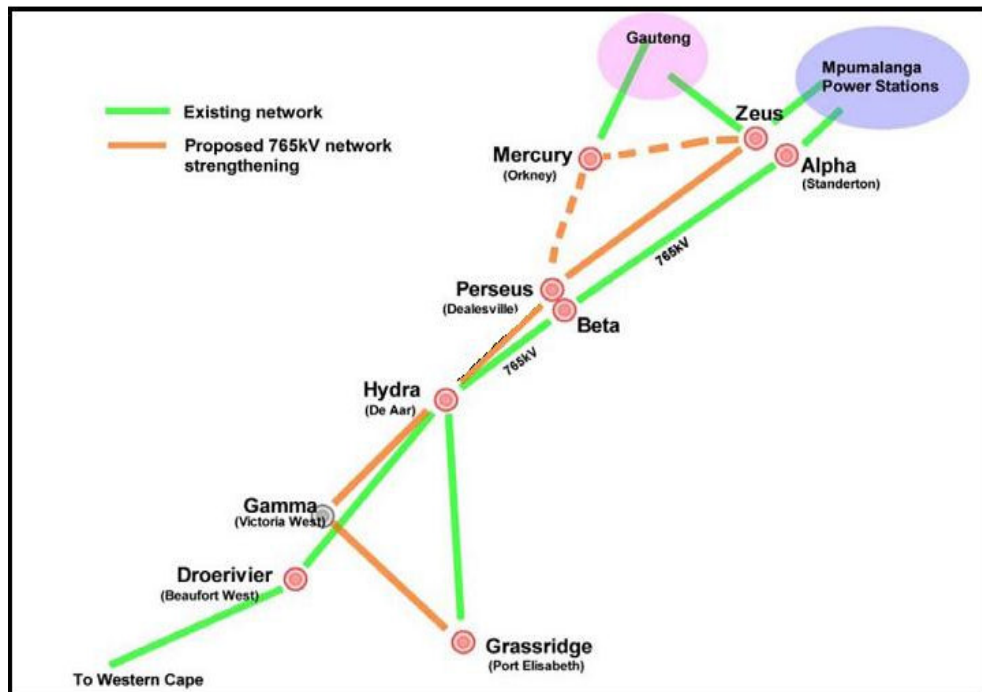


Figure 1: Overview of Transmission Network Strengthening proposed by Eskom (*Zeus-Perseus Pre-feasibility Report, 2005*).

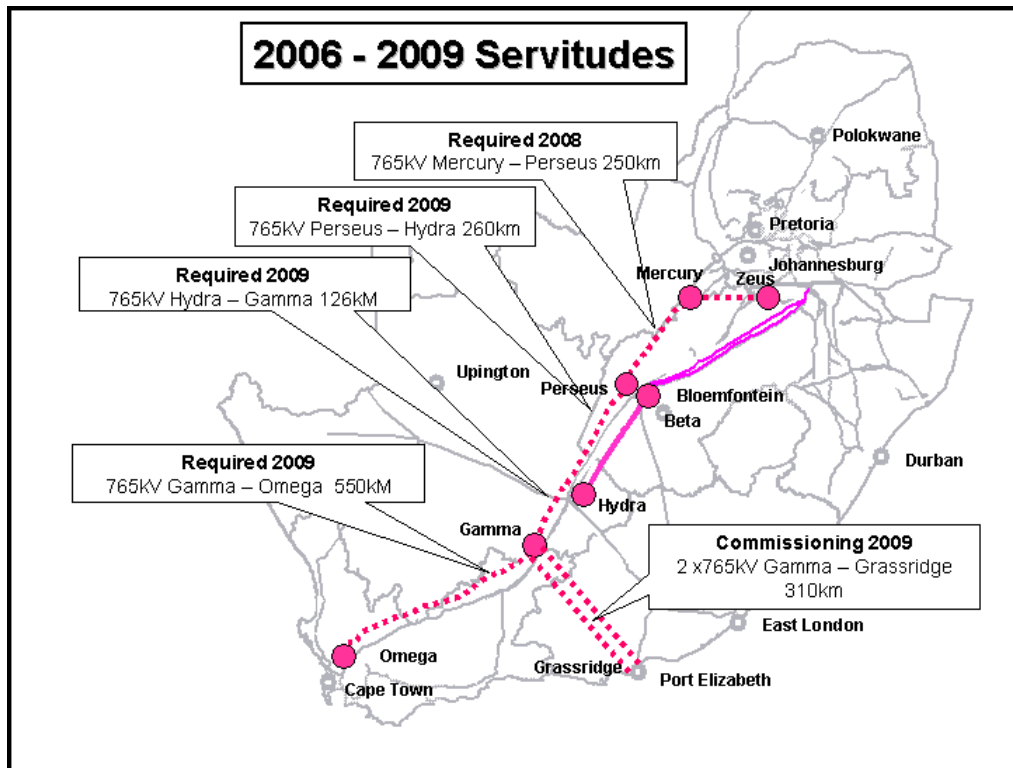


Figure 2: Transmission Network Servitudes Required by 2009.

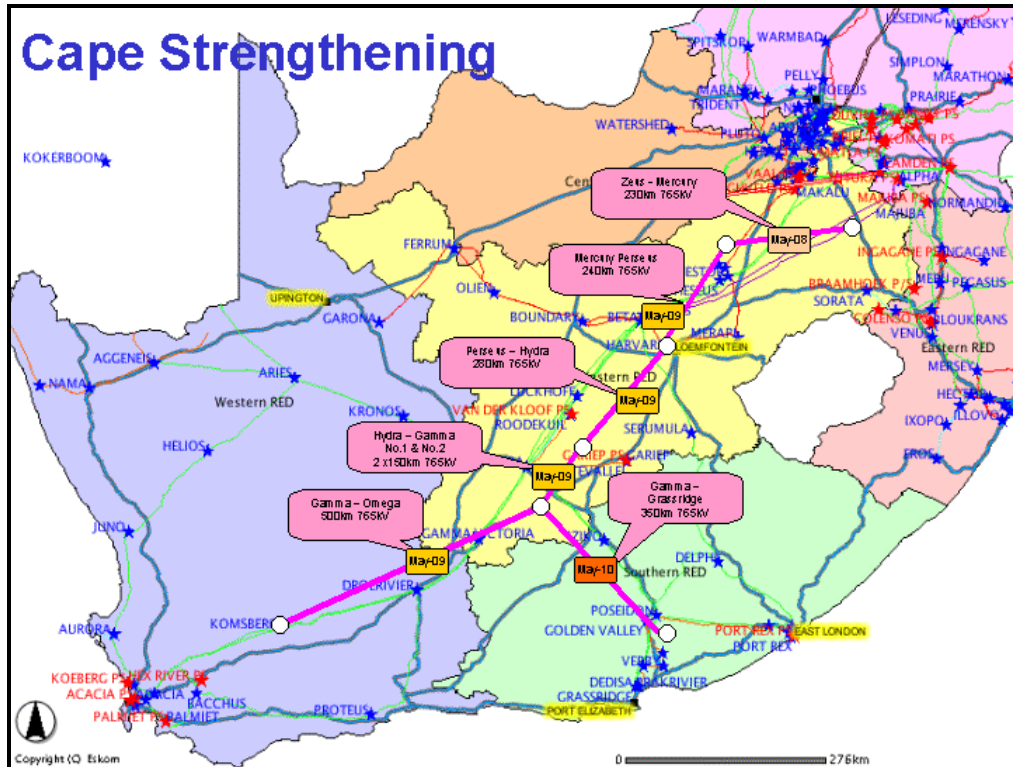


Figure 3: Transmission Network Strengthening Required up to 2010.

3.2 Demand and Capacity

The existing transmission network requires strengthening due to the unprecedented demand in the broader Cape region and the absence of sufficient generation infrastructure in close proximity to the major demand centres. The forecasted load growth shown in Figure 4 indicates the load growth expected in the Port Elizabeth area. It is clear that the forecasted demand in the Port Elizabeth area, in particular, is set to rise dramatically in the next few years. The load in the area currently stands at around 750 MW, and is expected to rise to approximately 2250 MW by 2012, and to 3150 MW by 2027. This increase is influenced largely by the establishment of the Coega IDZ, where proposed anchor tenants will require significant power delivery for metal processing and other operations.

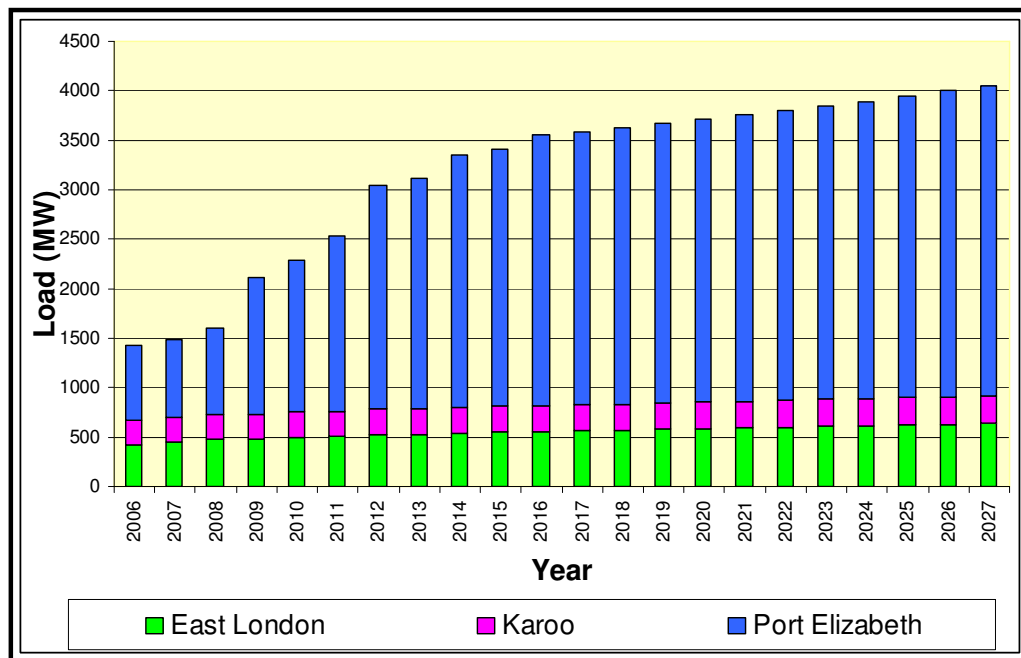


Figure 4: Forecasted Load for Southern Grid (Eastern Cape).

In order to meet the required load in the area, electricity must be transported from the north of the country where the high capacity coal-fired power stations are situated. The increased capacity could be provided through a number of possible means, including the building of new power generation facilities, improving the use of energy by consumers and improving the efficiency of transfer of energy over long distances. These alternatives to the proposed project were discussed in section 5 of the ESR, where it was explained that Eskom is progressively implementing these alternatives. However, within the time frames of the forecasted load growth, there are no generation or other solutions to supply the required load.

Existing infrastructure is already very constrained, and if the proposed transmission power lines are not erected, the economic growth in the area will be stifled, and the country will lose out on significant international investment, associated job creation etc. The strengthening of the current transmission network capacity is therefore essential. The urgency associated with the forecasted demand implies that the construction of the proposed transmission power lines is the only feasible alternative to address the demand in the short- to medium term (the next 3-6 years).

3.3 Need for the Hydra-Perseus Line

The proposed Hydra-Perseus 765 kV power line, which is the main aspect of this EIA, is a 260 km component of the total 1 300 km power line proposed (Table 1). Note that based on updated demand forecasts (see Section 3.2), the urgency of establishing these transmission lines have increased, and time frames are shorter than originally envisaged (see Section 4.4).

Table 1: Components of the Proposed 1 300 km Transmission Power Line

Section (between Substations)	Distance (km)	Required year of commissioning
Zeus-Mercury	230	2008
Mercury-Perseus	240	2009
Perseus-Hydra	260 (290 max.)	2009
Hydra-Gamma	2 x 150	2009
Gamma-Grassridge	350	2010

The Hydra-Perseus power line between the Perseus Substation (Dealesville, Free State) and Hydra Substation (De Aar, Northern Cape) would be a critical link in the proposed 1 300 km power line. The only other possible alternative to this proposed link (apart from the alternative corridors between Perseus and Hydra; see Section 6) available in the 1 300 km power line would be a Beta-Hydra 765 kV line. However, as indicated in Section 5.1 of the ESR, the expansion of the Beta Substation (approximately 12 km south of Perseus), a Gas Insulated Substation, would be prohibitively expensive and is thus not feasible. Furthermore, the expansion of the substation would be significantly constrained and near impractical due to its position and the proposed alignment of proposed incoming and outgoing 765 kV lines.

3.4 Need for the Beta-Perseus Lines

The proposed double 765 kV servitude required between the Perseus and Beta Substations also forms part of the broader network-strengthening project. Currently, there is no 765 kV power line between these two substations. The provision of the double servitude will address the following needs:

- Without the 765 kV link between the Perseus and Beta Substations, the Perseus Substation would only have a single 765 kV supply point (from Mercury Substation between Klerksdorp and Stilfontein) once the proposed Mercury-Perseus 765 kV line has been established. The loss of the 765 kV Mercury-Perseus line will place the greater transmission system at risk, and the network feed from Perseus to Kimberley, Bloemfontien and the greater Cape area will be substantially weakened. Linking the Beta and Perseus Substations would provide a second point of 765 kV supply to the Perseus Substation, which is required to maintain a secure transmission network;
- The ability to augment and secure the existing supply capacity of the Beta-Hydra 765 kV line, particularly during peak demand periods, is required;
- The risk of total 765 kV supply failure between the Hydra and Perseus Substations will be reduced in that power can be independently transmitted from the Perseus Substation via the Beta-Hydra 765 kV line and *visa versa*; and
- Routine and emergency maintenance can be done on either the 765kV Mercury-Perseus line, Hydra-Perseus line or the Beta-Hydra lines without disrupting the power supply to the Eastern Cape.

3.5 Summary of Need and Desirability

Together with the aspects highlighted in Sections 3.1-3.4, the importance of the project in addressing capacity problems in the short to medium term was summarised in Section 3.3 of the ESR (see below), and these remain valid. It is also important to note that during the PPP and engagement with key stakeholders to date, the need for the lines has not been questioned. Some I&APs, although not necessarily in support of a particular alignment due to sensitive areas, did indicate that the need for the lines are understood and that the proposed project in general is not opposed.

- Although increased generation capacity in the region is planned through the use of small “peaking” power stations (Open Gas Turbine technologies and pumped storage schemes in the Western Cape, Kwazulu Natal and Mpumalanga), these technologies will however not be able to address the generation supply needed without an increase in base load supply;
- Current options for increasing the base load supply include the Pebble-Bed Modular Reactor (PBMR), imported power from the Congo, new gas-fired power stations along the west coast of South Africa and Namibia, and a new coal-fired power station in the Limpopo Province (Matimba). The most feasible of these options is the Matimba coal-fired power station;
- Decommissioned power stations in Mpumalanga (Camden and Grootvlei) are being brought back into service in order to meet the growing demand, and will assist in supplying additional capacity to the network whilst the new power stations are constructed;
- Generation capacity in Mpumalanga is sufficient to meet the expected demand in the short to medium-term (5 to 7 years). The strengthening of the Alpha-Gamma-Hydra part of the network is however critical for ensuring adequate supply to the Western and Eastern Cape;
- Improving the efficiency of energy transfer on particularly long sections of existing lines is an ongoing maintenance activity by Eskom, which will not address the supply problem without strengthening the network through additional lines;
- The availability of a reliable electricity supply of good quality is fundamental to investment and economic growth in South Africa. The medium to long-term socio-economic benefits of this project are accordingly significant; and
- The proposed power lines will reduce the inherent risk profile of the national grid by augmenting the existing supply, resulting in less frequent power outages and an improved quality of electricity supply.

4 PROJECT SCOPE AND SPECIFICATIONS

4.1 Existing Power Line Network

Section 3.4.1, Section 7.2.5 and Figure 1 of the ESR suggested that there was an existing 765 kV line between the Hydra Substation and the Perseus Substation. This particular line is the most western of the four existing transmission lines in the middle of study area. The line in fact originates from the Beta Substation south of Dealesville (east of the existing lines), crosses the existing 400 kV lines in a westerly direction, and then runs south to Hydra Substation. This line should therefore correctly be referred to as the Beta-Hydra 765 kV Transmission Line.

The transmission power line network in the study area thus consists of the following (registered servitudes are in place for the existing power lines):

- Six substations (Perseus, Beta, Luckhoff, Van Der Kloof, Roodekuil, Hydra);
- One existing 765 kV line between the Beta Substation and the Hydra Substation (this line was upgraded in 2004, from a 400 kV line to a 765 kV line);
- Three 400 kV lines between the Hydra Substation and the Perseus Substation; and
- A number of 132 kV and 220 kV power lines which branch off to the East and West of the study area.

4.2 Transmission Line Construction and Operational Phases

The typical steps involved in the construction and operation of a transmission power line were presented in Section 3.4.2 of the ESR. Steps 8 and 9 were captured in the incorrect sequence, and the correct phases are provided in Table 2 below. Note that the development of the Environmental Management Plan (EMP) will follow after authorisation has been granted by DEAT, and construction will commence only after this EMP has been reviewed and approved by DEAT.

Table 2: Typical Steps in Construction and Operation of Transmission Power Line

Step	Activity
1	Determination of technically feasible alternative corridors
2	EIA of alternative corridors and recommendation on most preferred corridor
3	Authority authorisation of corridor (Record of Decision)
4	Negotiation of final route alignment within corridor with landowners
5	Aerial survey of the route
6	Selection of best-suited structures and foundations
7	Final design of line and placement of towers
8	Construction tender advertised and awarded
9	Vegetation clearance and gate erection
10	Establishment of construction camp and construction of access roads (if necessary)
11	Construction of foundations
12	Assembly and erection of towers
13	Stringing of conductors
14	Rehabilitation of working areas and protection of erosion susceptible area
15	Testing and commissioning of power line
16	Ongoing maintenance

4.3 Servitude Width

The establishment of the transmission lines will require the registration of associated servitudes (Discussed in Section 3.4.3 and 3.4.5 of the ESR). Figure 5 indicates the width requirements for a single servitude (Hydra-Perseus) and double servitude (Beta-Perseus) for a 765 kV power line. The required width for a single servitude, such as that proposed for the Hydra-Perseus 765 kV line, is 80 m, i.e. 40 m either side of the centre-line. The double servitude for the Beta-Perseus lines requires the registration of a servitude of 140-160 m wide in total. The minimum separation distance between two 765 kV power lines is 60-80 m, i.e. a 30-40 m buffer from the centre of each power line (60-80 m in total), plus 40 m on the outside of both lines (80 m in total). Due to safety issues during maintenance, Eskom prefers a separation distance of 80 m between two lines, and would therefore require a 160 m double-servitude for the Beta-Perseus lines as far as practically possible.

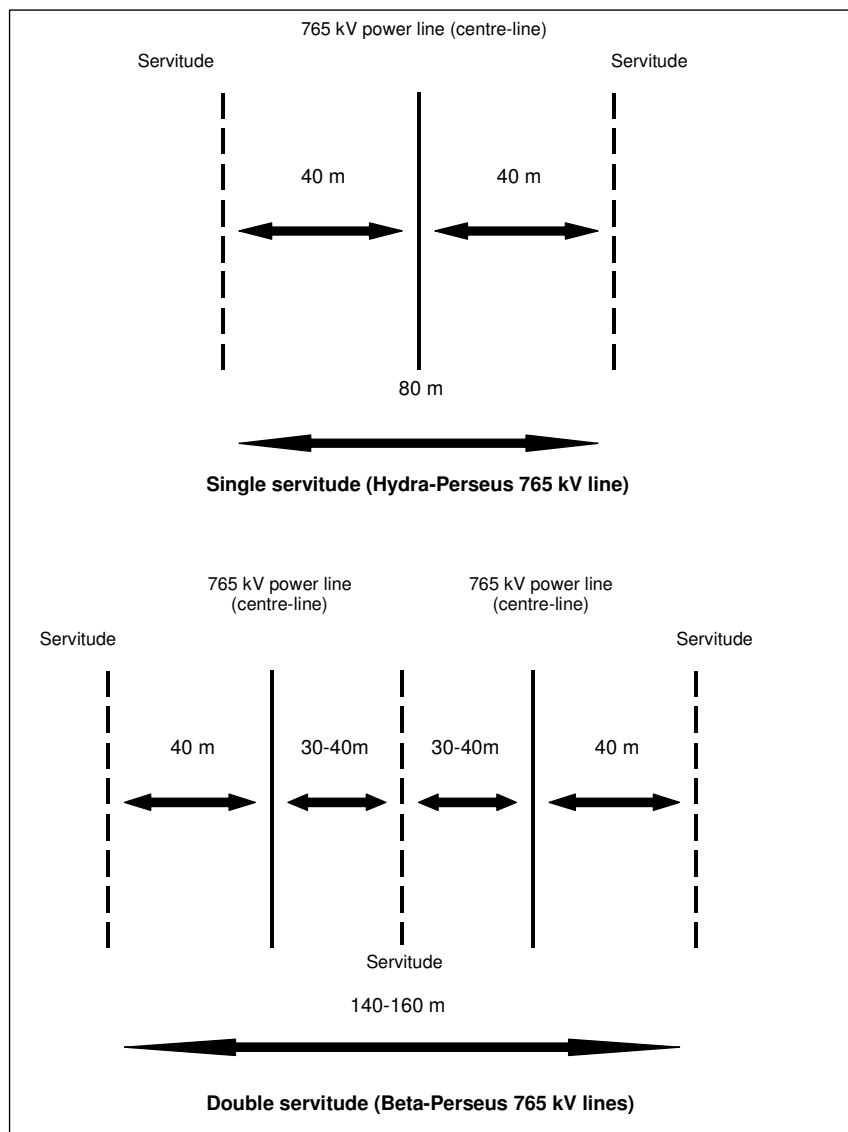


Figure 5: Servitude Width Requirements for the 765 kV Transmission Power Lines

4.4 Land Use Within Servitudes

Some conflicting statements with respect to possible land use within the servitudes were included in the ESR. The proposed transmission power lines would in fact not significantly constrain agricultural activities as practiced in the study area, i.e. grazing, cultivation (relatively low growing crops) and irrigation. Grazing of sheep, cattle, game etc. can continue unabated, and the loss of grazing vegetation at the anchor points and foundations of towers would be negligible.

Although cultivated land would be avoided as far as possible, a transmission line spanning such land would not limit the cultivation of crops as currently found in the area, including maize, wheat, grapes, vegetables and lucern. Specific examples of activities that are however not allowed are forestry, due to the height of trees and fires, and the cultivation of sugar cane, due to burning practices during the harvesting process. Neither of these activities are however relevant to the study area. Irrigation activities (e.g. pivot irrigation) can continue under the power lines.

Other specific activities that are not allowed underneath 765 kV transmission lines are drilling for water and wind pumps. Where lines have to cross over or pass in close proximity to wind pumps, these are replaced with electrical pumps at Eskom's cost.

In general, the final alignment of the proposed power line will aim to avoid existing infrastructure as far as possible. During the negotiation phase, movement of the alignment within the 500 m corridor to be authorised by DEAT, and exact placing of pylons (towers), are negotiated and agreed with individual landowners. This allows for the incorporation of existing infrastructure, vegetation and drainage lines, as well as agricultural and other activities.

4.5 Project Timeframes

Although project planning has been continuing for a number of years, due to government limitations placed on Eskom with regard to the establishment of new generation capacity, the implementation of planned projects had been delayed. Current demand and forecasted load increase has resulted in the urgent need to implement a number of projects to address these needs in the short and medium term. The Hydra-Perseus and Beta-Perseus 765 kV lines together with the Perseus Substation expansion are no exception, and the target date for completion has in fact been moved from 2012 to 2009.

Table 3 provides a summary of the timeframes associated with the different stages of the Hydra-Perseus and Beta-Perseus 765 kV lines project. Eskom's planning and final design processes and the EIA process are concurrent and linked procedures, with both influencing the other. The EIA process, the scope thereof and supporting technical information are updated and adapted as the design process progresses. Similarly, Eskom's design of the project is influenced by findings of the EIA process relating to environmental sensitivities etc. as information becomes available and more refined.

The Scoping phase of the EIA process has been concluded, and detailed assessments as part of the EIA phase are underway. Following public participation and stakeholder engagement planned for August 2006, a final EIR will be submitted to authorities. It is expected that a decision will be made by DEAT at the end of 2006. Negotiations with landowners will commence as soon as some degree of certainty on the preferred alignment has been established through the EIA investigations. Construction will proceed where possible upon finalisation of negotiations. The finalisation of construction and commissioning of the proposed power lines are planned for 2009.

Table 3: Project Timeframes

PROJECT PHASES	2004	2005	2006	2007	2008	2009	2010	2011
Planning	←							
Environmental Impact Assessment								
Negotiations								
Construction								
Commissioning								
Monitoring & Maintenance								→

4.6 Perseus Substation Expansion

4.6.1 Information To Date

The expansion of the Perseus Substation forms an integral part of the proposed project. However, due to the expansion being in its design phase, the extent of the proposed expansion was not communicated in detail within the ESR, other than to indicate that the proposed expansion would be assessed in detail during the EIA phase. The following information has been provided to date:

- Section 3.4.5 of the ESR indicated that the expansion of the Perseus Substation was part of the proposed project. However, at the time of compilation of the ESR, the specific details regarding the extent and nature of the expansion were not available, as the expansion is currently in its design phase.
- Section 3.4.5 of the ESR indicated that further information with respect to the expansion of the Perseus Substation would be provided in the EIR.
- Alternatives to the expansion were discussed in Section 5.1 of the ESR. Further details are provided in Section 3.3 of the ESR Addendum.
- Current information on the substation expansion is included in Section 4.6.2 of the ESR Addendum.
- The expansion of the substation was communicated during public meetings.
- A 3-hour site visit to the Perseus and Beta Substations, attended by approximately 50 stakeholders of the Dealesville community, preceded the Focus Group Meeting held in Dealesville on 14 March 2006 (Refer to Appendix 4.6.2 of the ESR). Note that the Beta Substation is not included in the present application, but was shown to I&APs as it is a good example of a 765 kV capacity substation.
- During the above visit, members of the community were given a detailed tour of both substations and were given insight into the type of infrastructure associated with a substation. I&APs were provided with detailed technical information on the operations at a substation by Mr W Bredenkamp and Mr P Vermeulen of Eskom.
- As further detail becomes available, it would be communicated to the public (e.g. via the ESR Addendum, stakeholder meetings and EIR) for their review and comment.
- The finalisation of certain details with respect to the proposed expansion will allow for more detailed communication of the proposed expansion to all I&APs through the public meetings and in the EIR, and this will empower I&APs to assess and comment on the proposed expansion in a far more constructive manner than would have been possible to date.
- The detailed PPP undertaken during the Scoping phase will be continued during the EIA phase and this will provide opportunities for the public to comment on the proposed expansion of the Perseus Substation and any other aspects of the proposed project. The large tracts of land under the ownership of individuals within the study area mean that a relatively small number of I&APs will be directly affected by the proposed expansion. These parties will be directly contacted during the EIA Phase.
- Eskom and the EIA project team has been as transparent as possible with respect to the expansion of the Perseus Substation, and recognises that the provision of accurate information to I&APs for their informed consideration is critical during any EIA process.

- Technical information is updated as the project proceeds due to designs being refined etc., but no technical aspect of the project has changed materially. No deliberate misinformation has been provided - all information relevant to the project has been and will be fully disclosed as it becomes available.
- Communication and participation are considered to have been adequate to date to allow for continuation with the detailed EIA phase assessments. The expansion will form part of the detailed EIA phase assessments, and will accordingly be addressed as a significant part of the project. Specialists were informed of the nature and size of the expansion, and will be investigating the affected area in detail during the EIA phase.

4.6.2 Scope of Substation Expansion

In addition to the proposed Hydra-Perseus and Beta-Perseus 765 kV lines, the planned expansion of the Perseus Substation also provides for additional lines expected from the Matimba power station in the Limpopo Province, as well as the proposed additional lines from the Zeus and the Mercury Substations respectively. Finalising the details of these developments has delayed the finalisation of the details with respect to the extent of the proposed expansion of the Perseus Substation.

The latest preliminary design and proposed layout (Appendix 3) indicates an expansion size of approximately 50 ha in total. The extension will entail the increase in footprint of the existing site by 35 ha (450 m X 780 m) to the south and 15 ha to the west of the existing substation. Figure 6 provides an impression of the size and direction of the expansion in relation to the existing substation. Although the design of the substation expansion is still in process, the final total footprint will not be larger than 50 ha, and indications are that it may be smaller (approximately 35ha) (*pers. comm.* Mr B Groenewald, Eskom).

The expansion would involve the construction of new facilities for 765 kV transmission power lines at the substation, as the Perseus Substation has previously only been used for lines with a maximum voltage of 400 kV. The transformers and related infrastructure that will form part of this expansion will be similar in design to that currently at the Perseus Substation, i.e. open-air, as opposed to the Beta Substation's enclosed Gas Insulated System (GIS). Ancillary infrastructure will include transmission lines and towers, internal roads etc. The bulk of the infrastructure will be erected in the expansion-area to the south of the existing substation, i.e. when standing at the entrance of the substation and looking towards it, to the left of the existing site.

4.6.3 Potential Environmental Impacts of Substation Expansion

The possible environmental impacts of the Perseus Substation expansion had not been overlooked during the Scoping Phase. The Perseus Substation is located within the project study area and the findings of the specialist studies are thus relevant to this aspect of the project. As noted in Section 3.4.5 of the ESR, the biophysical environment characterising this part of the study area is homogenous with little to no environmental sensitivity identified. The preliminary specialist studies undertaken during the EIA Phase to date has confirmed this evaluation.

The Terms of Reference of the specialists for the EIA Phase includes the detailed assessment of the proposed Perseus Substation expansion, and their findings in this respect will be included within the Environmental Impact Report (EIR).

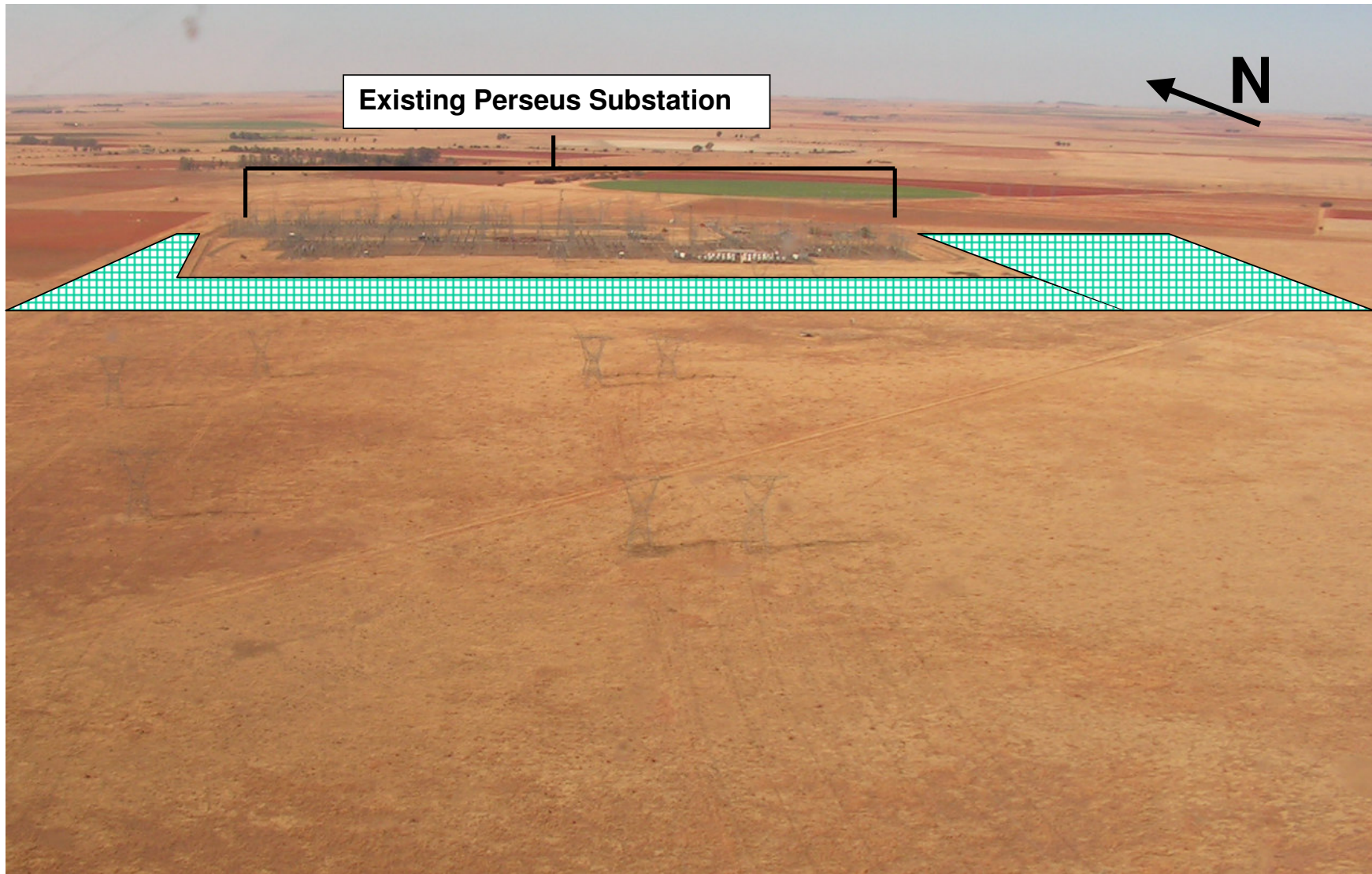


Figure 6: Area of Perseus Substation Expansion (approximate dimensions)

4.7 Transmission Line Towers

4.7.1 Tower Design

During the PPP and in the ESR (Section 3.4.5), the concept designs and basic shape, dimensions etc. of proposed towers were communicated to provide an indication of what the final infrastructure would look like. The design of the towers that would support the Hydra-Perseus and Beta-Perseus power lines had however not been finalised. Some design changes has occurred since the compilation of the ESR, and updated design information has become available.

These changes are however not regarded as significant to the extent that it makes the findings of the Scoping phase invalid. The proposed design of the transmission line towers will be continuously reviewed and updated during the rest of the EIA process, and any changes with regard to significance of associated environmental impacts will be incorporated into the EIR. It should be noted that the basic shape of the proposed towers remain similar to that communicated before, and that the visual impact for example, would remain, irrespective of final design due to the size of the towers.

During the process of tower design a number of factors are considered, which results in continuous improvement/optimisation in design (*pers. comm.* Mr A Burger, TAP). These include:

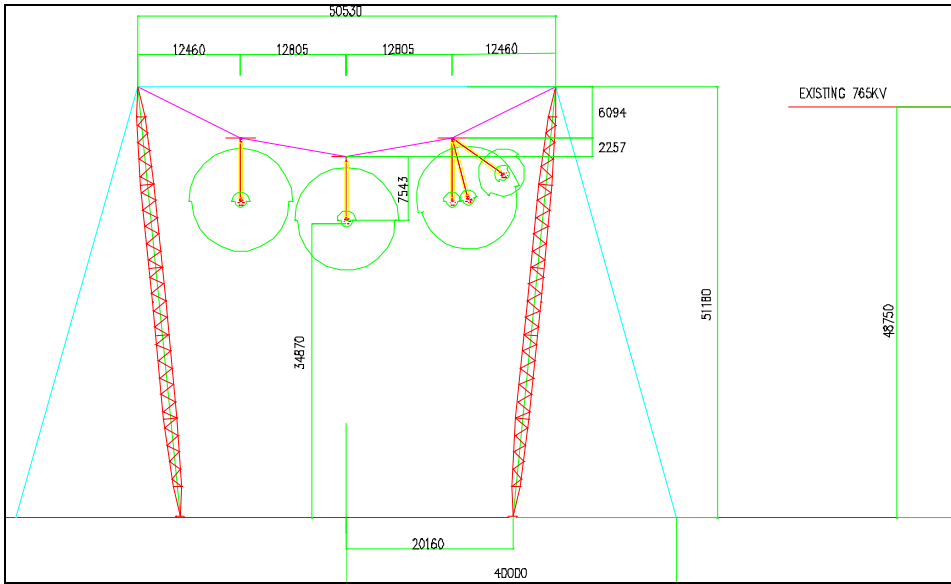
- Maintaining a clearance height of 14 m. Although South Africa's Occupational Health and Safety Act, 1993 (Act 85 of 1993) requires a minimum distance of 10.4 m, during the design of the towers compliance with International Health Standards, which specify 14 m, is sought due to the high voltage of the lines.
- Timeframes for finalisation of design and construction. Based on the urgency of the project, some concept designs have been withdrawn or others used due to the need to speed up completion dates.
- Costs associated with particular designs. An iterative process occurs where designers model different types of tower with different heights etc. over a particular terrain, to establish the most cost-effective design. For example, higher towers may be considered and modelled, and although fewer towers would be required to maintain the stipulated clearance height, the additional costs of these towers may prove prohibitive or counteract the saving made through using fewer towers.
- The minimum distance of 15 m required between phases (individual conductors) influences the orientation of lines where attached to the towers, and accordingly the tower design.
- Linked to the above, maintaining the minimum distance between phases with certain concept designs previously considered requires the tower height to be so high that the design becomes unfeasible.
- The maximum distance aimed for between towers is 500 m.
- Consideration of the 80 m servitude and remaining within this boundary, including anchor cables (if applicable).

4.7.2 Proposed Towers

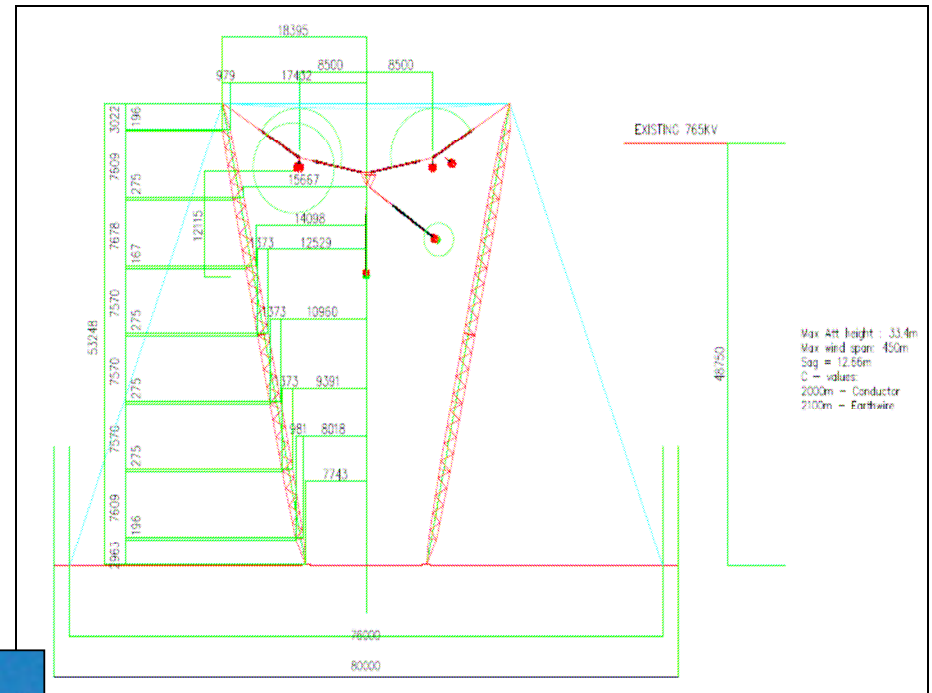
Suspension Towers will form the bulk of the towers for the Hydra-Perseus and Beta-Perseus lines, carrying the most of the lines over normal terrain. Figure 5 of the ESR provided a diagram of a proposed Cross-rope Suspension Tower. However, due to difficulty in maintaining the distance between conductors, this particular design has been modified and other, alternative concept suspension towers are being considered (see Figure 7).

These towers differ from the concept included in the ESR mainly in that the two 'legs' will not be anchored into the ground close together, and the width between the top-ends of each 'leg' will be wider. The conductors will be horizontally next to one another, as opposed to the triangular orientation of the concept design. The towers will also be approximately 3-5 m higher. The distance between the anchor cables will remain just under 80 m to stay within the servitude. The final design will be done considering these concepts, and details will be included in the EIR.

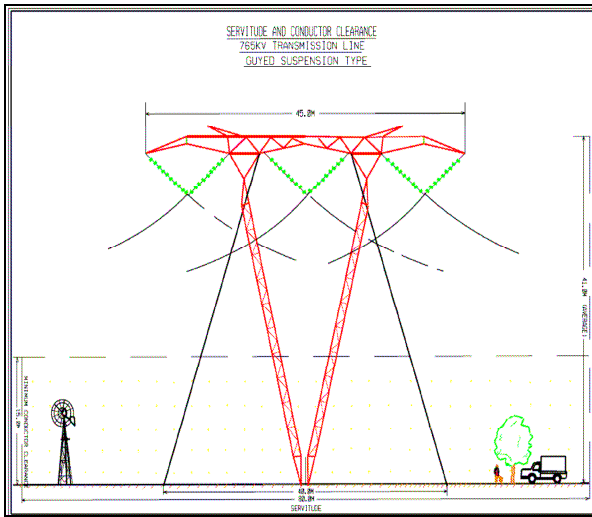
Self-supporting Heavy Suspension and Strain Angle /Terminal Towers are used where the tension on the lines are higher, e.g. at points where the line changes direction or where it goes up and/or down slopes, and a stronger, more solid type of support is required. These towers are much heavier and more bulky, and are not anchored with cables (i.e. 'self-supporting'). Due to very high cost, as few as possible of these towers will be used in the proposed lines. The example included as Figure 6 in the ESR is not the final design, but provided an indication of what these types of tower would look like. Further information is provided in Figure 8.



Concept Suspension Tower



New Insulated Cross-Rope Suspension Tower



Existing Guyed Suspension Tower



Figure 7: Suspension Towers (Dimensions in millimetres)

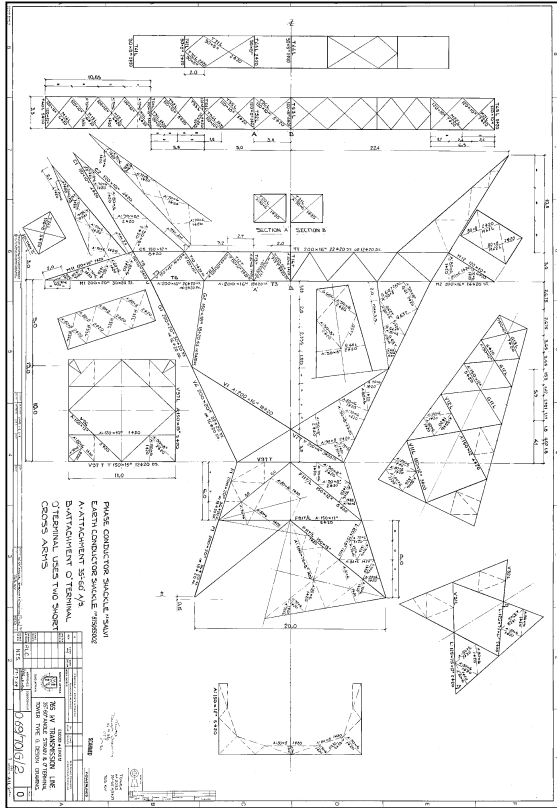


Diagram of Strain Angle / Terminal Tower

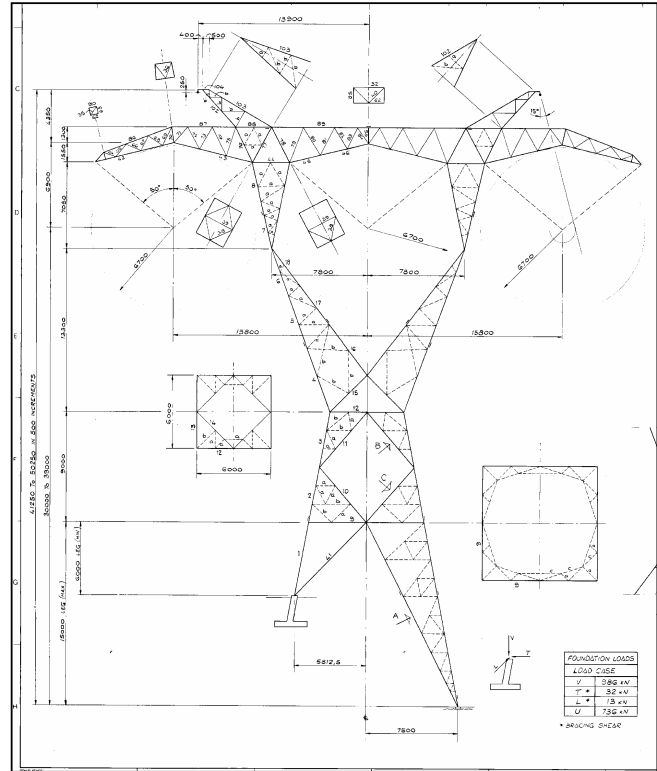
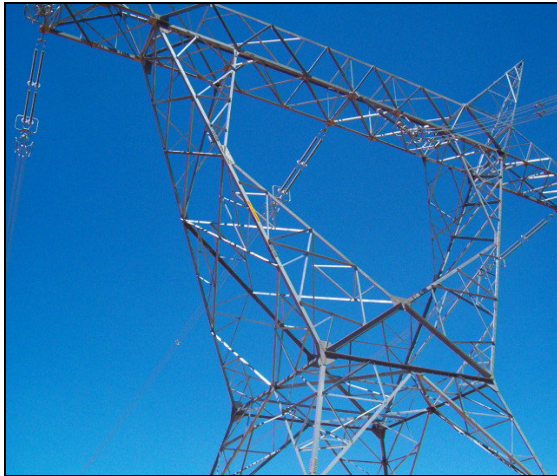


Diagram of Heavy Suspension Tower



Conventional 765kV Self-supporting Angle Tower



Self-supporting 765kV Strain Tower

Figure 8: Self-supporting Heavy Suspension and Strain Angle / Terminal Towers

5 NO-GO ALTERNATIVE

The no-go alternative refers to a situation should the project not proceed at all. This alternative was not considered separately in the ESR but formed part of the description of the need for the project explained in Section 3.3 of the ESR, as well as the description of the various project alternatives considered in Section 5 of the ESR.

The no-go alternative for this project implies that the current supply capacity to the Western and Eastern Cape would continue as is, and that the forecasted demand in the short to medium term would not be met. The impacts of this are far-reaching, including the increased frequency of power outages and the significant negative socio-economic impacts, should such outages occur. These socio-economic impacts may include, but are not limited to, the following:

- Economic losses to the manufacturing, metallurgical etc. industries due to a decline in production rates;
- Economic loss to the tourism industry;
- Economic losses to other industries or sectors which are reliant on commercial power for cooking etc. (e.g. wine industry, flower and fruit export industries);
- Health impacts on vulnerable members of society, e.g. the elderly, children and those who are ill;
- Security issues or impacts due to intermittent power sources; and
- Disruption to transportation services, especially rail and air transport.

Furthermore, economic growth, particularly in the Port Elizabeth area, will be stifled should the no-go alternative be implemented, as investors will only invest in the region if an adequate and stable power supply can be guaranteed.

The socio-economic impact of not being able to meet the forecasted demand suggests that the no-go alternative is not a feasible alternative for this project.

6 SCOPE OF EIA PHASE

6.1 ESR Recommendations

The following recommendations were made in Section 5.3.4 of the ESR with respect to the alternatives identified for the Hydra-Perseus line and Beta-Perseus lines:

Hydra-Perseus line

Based on the assessment conducted, it is recommended that Alternatives 3 and 4 be taken forward into the EIA phase for further detailed study. This recommendation is based on the following:

- Three of the six specialist studies which identified a most preferred alternative selected Alternative 3 as the most preferred corridor for the power line. However, the difference between Alternative 3 and Alternative 4 in the visual impact, geology and geotechnical, fauna and flora is insignificant in many respects.
- Although the fauna and flora assessments suggested a different preferred corridor, both assessments agree that the possible impact of the proposed power line is very limited, irrespective of the corridor alignment finally selected.
- The only specialist assessments, which did not favour Alternative 3 or Alternative 4, was the avi-fauna and flora assessments, which favoured Alternatives 1 and 2 respectively. Unfortunately, Alternative 1 is the least favoured option in terms of soils, geology and visual impact. Mitigation in the form of tower placement and construction methodology can significantly reduce the impact of power lines on avi-fauna and vegetation and this will be investigated further in the EIA Phase.
- Alternatives 3 and 4 address the risk factor associated with all power lines in close proximity to one another.
- Although the maintenance and cost factors associated with these alternatives are greater than the other alternatives, they do not make the project unfeasible.

Beta-Perseus line

Based on the assessments, it is recommended that the EIA Phase be utilised to identify a 500 m corridor towards the east of the Beta-Perseus study area. This recommendation is based on the following:

- The environment within the Beta-Perseus study area is relatively homogenous and any alignment of the double servitude is likely to have a similar low environmental impact.
- The geological report suggested that the corridor be placed in the east, as the dolerite in this area would best facilitate the geotechnical requirements of the towers.
- The most significant impact is likely to be visual due to the number of existing power lines in the area, particularly where the lines will need to cross the R64. The extent of the visual impact can be reduced through mitigation measures, which will be explored in the EIA Phase.

6.2 Preliminary Findings of EIA Phase

Although the Western and Central Corridors were identified during the Scoping Phase as the preferred alternatives for detailed study during the EIA Phase, the specialist reports agreed that the difference between one Corridor Alternative and another was in many respects insignificant.

The Scoping Phase of an EIA is generally used as the first screening of alternatives in order to eliminate one or more alternatives, such that the EIA Phase focuses on the most feasible alternatives. Normally, one or more fatal flaws are identified with respect to a particular alternative and this fatal flaw/s allow for the elimination of a particular alternative. In this project, no fatal flaws were identified during the Scoping Phase and the basis of exclusion of some alternatives was based on a non-quantitative comparison of the specialist studies in which the Western and Central Corridor Alternatives were clearly preferable to other alternatives. This did not imply that the other Corridor Alternatives had fatal flaws, and it was thus decided that the specialists would proceed to evaluate the Western and Central Corridor Alternatives during the EIA Phase. It was accepted that other alternatives would also need to be examined if the more detailed specialist studies provided information contrary to that provided during the Scoping Phase.

The specialists have since undertaken preliminary detailed studies on the Western and Central Corridor Alternatives and have identified amongst others the following:

- Certain farms along the Western and Central Corridor Alternatives contain significant archaeological artefacts;
- Various sections along the proposed Corridors are associated with high ecological value; and
- The homogeneity of the study area west of the four existing transmission lines is more pronounced than initially determined during the Scoping Phase.

The last bullet-point has required the EIA project team to re-evaluate the recommendation for only two Alternative Corridors to be evaluated during the EIA Phase. This is because of the fact that the fieldwork undertaken by the specialists has indicated that without further study on all the Alternative Corridors, no clear preference can be assigned to any of the Corridor Alternatives.

Given this information, the EIA project team, in consultation with the Applicant (Eskom Transmission Division) has decided that in terms of the precautionary principle advocated in the National Environmental Management Act, 1998 (Act 107 of 1998), all of the proposed Corridor Alternatives will be evaluated during the EIA Phase. The EIR will thus contain a detailed assessment of all the proposed Corridor Alternatives. The aim is that through the integration of all specialist studies and a qualitative alternative assessment, a consensus recommendation will be made by the project team on the most preferred Alternative Alignment Corridor for consideration by DEAT.

7 WAY FORWARD

This document constitutes an Addendum to the ESR for the proposed project. The Addendum Report provides some additional information based on the comments received on the ESR during the public commenting period.

It has been determined that all the proposed alternative Alignment Corridors for the Hydra-Perseus line identified in the Scoping Phase, would be evaluated by the specialists during the EIA Phase. The increase in the project scope is not expected to require a significant adjustment to the project timeframe.

The following specialist studies will thus continue on all the Corridor Alternatives:

- Visual impact;
- Cultural and heritage resources;
- Fauna;
- Flora;
- Avi-fauna; and
- Socio-economic, specifically eco-tourism.

Each of the specialist reports produced during the EIA phase will be appended to the EIR. The evaluation of Alternative Corridors will also include the consideration of technical aspects such as cost (construction and operation), maintenance and risk (fires, sabotage, outages). Through integration with the Eskom technical teams and other internal stakeholders, these issues will be detailed in the EIR, and will form part of the alternative analysis and decision-making processes. Public consultation is ongoing and all I&APs will be contacted regarding the planned meetings as well as with respect to the availability of the EIR for comment.

APPENDIX 1

PUBLIC PARTICIPATION PROCESS REPORT

1 DESCRIPTION OF THE PUBLIC PARTICIPATION PROCESS

This section provides an account of the Public Participation Process (PPP) activities undertaken to facilitate the review of the Environmental Scoping Report (ESR). The comment period commenced on **12 May 2006** and closed on **09 June 2006**. The ESR was therefore available in the public domain for a period of 4 weeks.

ACER (Africa) Environmental Management Consultants (ACER) is responsible for the PPP as part of the broader EIA.

1.1 Notification of Environmental Scoping Report Availability

All registered I&APs were advised of the availability of the ESR and provided with opportunities to review and comment on the report via the following:

- Personalised letters in English and Afrikaans were distributed in May 2005 to all registered I&APs informing them of the availability of the ESR and the comment period (Annexure B).
- An executive summary of the ESR and comment sheet (Annexure C) accompanied the letters.
- Key stakeholders were contacted telephonically.
- Print media advertisements in English and Afrikaans (Annexure A) advertising the comment period and the venues for accessing the ESR were placed in national, regional and local newspapers (see Table 1).

Table 1: Advertisements announcing the availability of the Environmental Scoping Report

PUBLICATION	DISTRIBUTION	LANGUAGE	PUBLICATION DAY	PUBLICATION DATE
<i>The Echo</i>	Local	English and Afrikaans	Friday	12 May 2006
<i>Bloemnuus</i>	Local	English and Afrikaans	Friday	12 May 2006
<i>The Express</i>	Local	English	Wednesday	10 May 2006
<i>Volksblad</i>	Regional	Afrikaans	Tuesday	09 May 2006
<i>Rapport</i>	National	Afrikaans	Sunday	07 May 2006
<i>Sunday Times</i>	National	English	Sunday	07 May 2006

1.2 Distribution of the Environmental Scoping Report

Copies (CD and hardcopy) of the ESR were made available at the public venues listed in Table 2 below. Comment sheets and viewing registers accompanied the ESR. The ESR was posted on Eskom's website (www.eskom.co.za/eia), and I&APs were able to submit comments on the ESR via email (eskomHP@acerafrica.co.za). In addition, CDs and/or hard copies were directly distributed to the following key stakeholders:

- Renosterberg Local Municipality.
- Letsemeng Local Municipality.
- Emthanjeni Local Municipality.
- Pixley ka Seme District Municipality.
- Dept of Environmental Affairs and Tourism.
- Free State Dept of Tourism, Environmental and Economic Affairs.
- Northern Cape Dept of Tourism, Environment and Conservation.
- Department of Agriculture (Koffiefontein Office).
- South African Heritage Resources Agency.
- Wildlife and Environment Society of SA.
- De Beers Consolidated Mines.
- South African National Roads Agency Limited.
- Spoornet Free State Office, Bloemfontein.
- Spoornet: Northern Cape Office, Kimberley.
- Department of Minerals and Energy, Northern Cape Regional Office.
- Department of Minerals and Energy, Free State Regional Office.
- BirdLife SA.
- ESKOM Transmission Internal Stakeholders.

Table 2: List of public venues where the ESR was made available

AREA	VENUE	CONTACT PERSON
Boshof	Wes Mark Boshof 50 Jacobs Street	Mr Joseph Niewoudt Manager
Dealesville	BKB 8 Andries Pretorius Street	Mr Roedolf Hendriks Manager
Petrusburg	Senwes Aland Street	Mr Kobus Pretorius Manager
Koffiefontein	OVK Grootrek Street	Mr Sid Endley Manager
Luckhoff	GWK Voortrekker Street	Mr Ertjies van der Berg Manager
Petrusville	OVK Visagie Street	Mr Casper Erasmus Manager
Phillipstown	BKB Green Street	Mr Jurgens van den Heever Manager
De Aar	BKB 42 Jenny Street	Ms Erna Gous Manager
Orania	Orania Dorpsraad S7 Soetdoring Lane	Mr Kobus van der Merwe Town Manager
Vanderkloof	Vanderkloof Public Library Erika Street	Mr Wouter du Toit Municipal Manager

1.3 Opportunities for comment on the Environmental Scoping Report

Comment sheets in English and Afrikaans were sent with the personalised letters and were made available at public venues and the project website. Loaning of the CD copy of the document to I&APs for two days maximum was arranged with all public venues. Comments on the ESR could be submitted either by mail, fax or e-mail to the Public Participation Office. Assistance, where required, was provided to I&APs in order to facilitate understanding of the ESR so that I&APs had the opportunity to provide informed comment.

1.4 Record keeping

An important part of the PPP is record keeping. The following information has been kept on record as hard copy and on the electronic database:

- Comment sheets.
 - Letters, e-mails and faxes.
 - Telephone conversations.
 - Public Participation Process Report (this Appendix), which summarises the public participation process after the distribution of the ESR.
 - Comments and Response Report.
-

1.5 Summary

An extensive PPP has been undertaken to date, which will continue during the EIA Phase of the project. The scope of interaction and communication thus far is summarised in Tables 3-5.

Table 3: Attendance at various meetings

Date	Meeting	Attendance - Numbers
02 November 2005	Key Stakeholder and Public Workshop (representatives)	40
02 November 2005	Vanderkloof & Luckhoff Farmers Association	19
18 January 2006	Orania	19
18 January 2006	De Aar	25
19 January 2006	Oppermans	15
19 January 2006	Koffienfontein	20
20 January 2006	Boshof Suid	13
14 March 2006	Dealesville	31
15 March 2006	Petrusburg	41

Table 4: Distribution of documents to Farmers Associations

Farmers Association	Chairperson	Farmers Association Members
De Aar Boerevereniging	Mr JP Truter	50
Pederberg Boerevereniging	Mr Faan Kriel	30
Oppermans Boerevereniging	Mr Elbrecht Mathea	35
Phillipstown Boerevereniging	Mr Jurgens van Denheever	40
Vanderkloof Boerevereniging	Mr Abraham van Zyl	50
Luckhoff Boerevereniging	Mr Johannes du Plessis	35
Petrusburg Landbou and Perdeberg Boerevereniging	Mr Hennie Wagner	100
Dealesville Boerevereniging	Mr Merwie Fourie	60

Table 5: Distribution of main public documents to all I&APs (including landowners)

Phase	Document Type	Distributed
Project Announcement	Letter of announcement and BID	781
Project Update and Announcement of new corridors	Letter and additional corridor map	1049
Announcement of availability of Draft Environmental Scoping Report	Letter	1037

ANNEXURE A: ADVERTISEMENTS

National/regional/local advertisements

ANNEXURE B: NOTIFICATION LETTERS

08 May 2006: Letters disseminated to registered I&APs

09 May 2006: Letter disseminated to public venues

ANNEXURE C: COMMENT SHEETS

ANNEXURE D: LIST OF REGISTERED I&APS (DATABASE)

APPENDIX 2

COMMENTS AND RESPONSE REPORT

HYDRA-PERSEUS AND BETA-PERSEUS 765KV TRANSMISSION POWER LINES ENVIRONMENTAL SCOPING REPORT

COMMENTS AND RESPONSE REPORT (JULY 2006)

The various sources of the comments contained in this Comments and Response Report include:

- *Comments received by fax, e-mail and mail.*
 - *Telephonic conversations.*

NAME & ORGANISATION	ISSUES RAISED	RESPONSE
Dr Hermanus Opperman Vluytjeskraal Aandele Blok Bpk.	<ul style="list-style-type: none"> ▪ There are many pre-historic and historic engravings on Orania's rocks. ▪ Van Jaarsveld's description of Oraniërs is an insult and will be damaging to good relations. Article 235 of the constitution explains our position. 	<ul style="list-style-type: none"> ▪ It is recognised that a number of pre-historic and historic engravings exist in the area of Orania, which were not assessed in detail during the Scoping phase. As part of the detailed archaeological, cultural and heritage assessment for the EIA phase, on-site investigations will identify and mark these areas of importance. These studies are currently underway and the EIA study team specialist has in fact been to the Orania area, and met with Dr Opperman. ▪ The study team sincerely apologises for the comment contained in the Cultural & Heritage Specialist Report. The intent was not to insult the community of Orania. The remark was a careless inclusion into the report, reflecting poor judgement on the side of the particular specialist. Note that the comment in no way reflects the opinion of Eskom Holdings Ltd., ARCUS GIBB or any of the other specialists in the study team. The constructive manner in which the Orania community has engaged with the study team thus far is recognised and appreciated. A formal apology will be lodged with the Vluytjeskraal Aandele Blok Bpk./ Orania Dorpsraad. ▪ Noted for rectification.
Mr Sebastiaan Biehl	<ul style="list-style-type: none"> ▪ I strongly object to the insulting manner in which Orania is described ('Retreat of die-hard members of Verwoerdian apartheid'). It is not the role of the study group to insult communities or express their own political opinions. ▪ By the way, there are a lot of historic relics of the Boer War and pre-historic era in Orania. 	
Mr A P du Plessis	<ul style="list-style-type: none"> ▪ Your ignorance regarding Orania is a pity, as well as the stigmatisation of its civilized residents who just want to be who they are - Afrikaners. We are not 'die-hard members of Verwoerdian apartheid'. Orania Afrikaners have the right to the recognition of their identity, a right that belongs to them through international nations law and UN manifesto. 	
Mr H J van Antwerpen Orania	<ul style="list-style-type: none"> ▪ Political bias as on page 14 against Orania has a negative reflection on the report and its authors. ▪ Spelling mistakes on page 13 of the 'Socio-economic report'. 	

NAME & ORGANISATION	ISSUES RAISED	RESPONSE
Mr Jacobus Wilhelmus de Villiers	<ul style="list-style-type: none"> ▪ I am the owner of the farms Jakkalskuil No. 21 and Ventersdam No. 22 in the Petrusville District, which are both crossed by all four proposed alternative routes of the Hydra/Perseus power line. ▪ I would like to refer to the archaeological and cultural-historic report which you have received from archaeologist Mr Cobus Dreyer on my behalf, as well as the report regarding the omission of my property by your contracted archaeologist Mr Albert van Jaarsveld. ▪ Because I appreciate the urgency of the delivery of additional power and its national importance, I am not opposing the construction of the power lines. It is, however, important that should alternative routes 1, 2 or 3 be exercised through the abovementioned area, the National Heritage Resources Act (NHRA) 25 of 1999 be applied and tested. ▪ Unavoidable damage and disruption of the area, which is very rich in undisturbed and undiscovered archaeological heritage, may be prevented during the construction as well as maintenance of the power lines. The core of the archaeological area is located directly in line with alternative no.3 and partly in line with alternative 2. A culturally historical stone-wall (circa 1880), a number of kilometres in length, lies in the way of alternative 1 and 2. An original farm dwelling, erected in 1914, which is still occupied, lies directly in line of alternative No 2. 	<ul style="list-style-type: none"> ▪ All comments noted. ▪ The report by Mr Dryer was received by ACER (Africa) and copies provided to ARCUS GIBB and Mr van Jaarsveld, the EIA study team's heritage specialist. ▪ Detailed on-site investigations were not part of the Scoping phase. As part of the detailed archaeological, cultural and heritage assessment for the EIA phase, on-site investigations will identify and mark these areas of importance. These studies are currently underway and the EIA study team specialist, Mr van Jaarsveld, has in fact visited the farms in question, and met with Mr de Villiers. ▪ Preliminary results from the detailed assessment by Mr van Jaarsveld indicate similar findings and conclusions as contained in Mr Dreyer's report, including the classification of certain areas in terms of the provisions of the National Heritage Resources Act. The findings of the assessment will be included in the EIR. ▪ The location of all identified artefacts will be mapped during the EIA Phase and this information will influence the selection of the most preferred alignment corridor. Furthermore, should the development be authorised, a registered archaeologist will assess and verify the placement of every pylon structure prior to the construction thereof commencing. No artefact will be destroyed or removed without consultation with landowners and the requisite permission from the South African Heritage Resources Agency (SAHRA). ▪ All relevant provisions of the SAHRA will be complied with during the construction and operational phases of the project. The study team has been in contact with the SA Heritage Resources Agency, who also receives EIRs for comment (also see later sections in this Comments and Response Report).

NAME & ORGANISATION	ISSUES RAISED	RESPONSE
<p>Mr Jacobus Wilhelmus de Villiers</p> <p><i>(Continued from previous section)</i></p>	<ul style="list-style-type: none"> ▪ Request: Against the background of the abovementioned professional reports submitted to you, I would like to request that the acceptable alternative, without challenging the law, would be alternative 4, or an even further westerly route. ▪ I copied my correspondence to SAHRA as well as my legal representative. I would really appreciate it if you could acknowledge receipt of this correspondence as well as the report by Mr Cobus Dryer, the professional archaeologist, to the abovementioned address. 	<ul style="list-style-type: none"> ▪ The significance of the total potential impacts for the proposed alternative alignments will be investigated during the EIA phase. The investigation will include input from the EIA phase specialist studies. ▪ Noted. A letter acknowledging receipt of the report, dated 09 June 2006, was faxed by ACER (Africa) to Mr Cobus Dreyer. Mr H Crous of ARCUS GIBB also telephonically confirmed receipt thereof with Mr Dreyer.
<p>Mr Jaco van der Merwe Samekomst</p>	<ul style="list-style-type: none"> ▪ Seeing that the line might cross 5 or 6 of my farms I request that one of your consultants come to see me! 	<ul style="list-style-type: none"> ▪ Eskom representatives will visit all owners within the final alignment corridor as part of the negotiation phase, which does not form part of the EIA process. Given the linear extent of the proposed development (approximately 260 km), it is not possible for the project team to visit each individual landowner personally. An extensive public participation process involving public meetings and ongoing communication via telephone, fax and e-mail is being conducted to ensure the project team obtains comment from and respond to all I&APs in the study area. The dates of future public meetings will be communicated, and all I&APs are encouraged to discuss concerns with the project team at these meetings.

NAME & ORGANISATION	ISSUES RAISED	RESPONSE
<p>Mr Pieter du Toit Roodekraal No 106</p>	<p><u>1. Regarding agricultural activities – existing and planned:</u></p> <ul style="list-style-type: none"> ▪ Existing water installations and infrastructure are not to be moved. ▪ Existing agriculture fields are not to be moved or trees felled. New legislation by the Minister of DEAT makes it virtually impossible to establish new fields. The best irrigable land on the farm is located where the proposed power line is planned. ▪ What about planned overhead irrigation? How does this affect my economic feasibility if the power line prevents me from erecting it? ▪ The proposed power line runs through the best grazing area on the farm as well through a water run-off area. ▪ The proposed power line runs through the most water rich part of the farm. What do I do if I want to drill for water? ▪ How will induction affect my above ground power lines? 	<ul style="list-style-type: none"> ▪ The final alignment of the proposed power line will avoid existing infrastructure as far as possible. During the negotiation phase, movement of the alignment within the 500 m corridor to be authorised by DEAT, and exact placing of pylons (towers), are negotiated and agreed with individual landowners, in order to incorporate existing infrastructure, vegetation and drainage, as well as agricultural and other activities. If drainage (water run-off) areas cannot be avoided, strict erosion control measures are implemented (these will be detailed in the EMP that would be developed for the project implementation). ▪ Transmission power lines do not significantly constrain agricultural activities. Cultivated land is avoided as far as possible, but may be crossed. Irrigation as well as grazing can continue under the span of the power line. ▪ Drilling for water is one of the few activities that cannot be conducted under power lines due to the height of the equipment used. Should the line ultimately cross any areas where water may be sought for, these areas are to be identified during the negotiation phase and avoided. ▪ The power line will be positioned in such a way that effects on other lines (such as induction) are avoided or minimised.

NAME & ORGANISATION	ISSUES RAISED	RESPONSE
<p>Mr Pieter du Toit Roodekraal No 106</p> <p><i>(Continued from previous section)</i></p>	<p><u>2. With regards to tourism:</u></p> <ul style="list-style-type: none"> ▪ Prior arrangements with German tourists – the proposed power line runs so close to my house (almost on top of my house) and will be unsightly – I do not want the landscape and my homestead to be dominated by an unsightly power line. ▪ I do not want a power line of this nature within 1.5 km from my homestead or agricultural activities. ▪ How does induction affect above ground power lines to workers' houses? ▪ How will the power line affect electronic equipment, especially communications equipment? I have spent a lot of time and money in getting something that works. ▪ The power line may not be allowed to get close to the archaeological area (rock art). 	<ul style="list-style-type: none"> ▪ Noted. The potential impacts of the proposed line on tourism (associated with the specialist Visual and Socio-Economic Impact Assessments) will be investigated in detail during the EIA phase. ▪ Please refer to the responses in the previous section regarding infrastructure and agricultural activities. ▪ The power line will be positioned in such a way that effects on other lines (such as induction) and other electronic equipment (e.g. communication) are avoided or minimised. ▪ The location of all identified archaeological, cultural and heritage artefacts will be mapped during the EIA Phase and this information will influence the selection of the most preferred alignment corridor. Furthermore, should the development be authorised, a registered archaeologist will assess and verify the placement of every pylon structure prior to the construction thereof commencing. No artefact will be destroyed or removed without consultation with landowners and the requisite permission from the South African Heritage Resources Agency (SAHRA).

NAME & ORGANISATION	ISSUES RAISED	RESPONSE
<p>Mr Pieter du Toit Roodekraal No 106</p> <p><i>(Continued from previous section)</i></p>	<p><u>3. General:</u></p> <ul style="list-style-type: none"> ▪ Strict attention should be paid to the possibility of fires during construction. It is noticeable that construction teams from other parts of the country are not aware of the sensitivity of the Karoo to fires. I am still struggling to get the veld rehabilitated, which was set alight by Spoornet, and it has been 39 years with little progress. Karooveldt recovers slowly (minimum 50 years) after fires. ▪ NO construction camps will be allowed on the farm – the removal of plant material in not an option! ▪ The planned power line route is directly in line with a cemetery for farm labourers as well as unmarked graves. ▪ Eskom personnel and sub-contractors must make themselves aware of safety protocol compiled by the Government regarding access to farms due to the unacceptable level of farm attacks and murders. <p><u>4. Suggestions:</u></p> <ul style="list-style-type: none"> ▪ Please arrange a meeting with me so that we can discuss problems at ground level before the final planning stage is reached. ▪ Please arrange for someone to come and see me regarding the planned route of the power line – the manner in which it is indicated on the current maps will cause a lot of problems. I will not move infrastructure and will not have my trees felled, especially if it is going to cost me money and make the area unsightly. 	<ul style="list-style-type: none"> ▪ Noted. The conditions of each Contractor’s appointment include the provisions of the EMP. Part of this EMP addresses construction camps and conduct of the construction teams, including aspects such as cooking, sanitation and safety/security. Specific provisions in this regard can also be included contractually on an individual basis during the negotiation phase. ▪ Construction camps will be placed close to towns/commercial centres where resources are easily available. Small construction teams will move out to specific sites to conduct activities during normal working hours. ▪ Noted. ▪ Noted. Eskom representatives will visit all owners within the final alignment corridor as part of the negotiation phase, which does not form part of the EIA process. Given the linear extent of the proposed development (approximately 260 km), it is not possible for the project team to visit each individual landowner personally. An extensive public participation process involving public meetings and ongoing communication via telephone, fax and e-mail is being conducted to ensure the project team obtains comment from and respond to all I&APs in the study area. The dates of future public meetings will be communicated, and all I&APs are encouraged to discuss concerns with the project team at these meetings. Also note that a number of issues raised would be addressed during the negotiation phase.

NAME & ORGANISATION	ISSUES RAISED	RESPONSE
Mr Rudolph Jacobus Grobbelaar Wolweplaat	<ul style="list-style-type: none"> ▪ I run a game farming and eco-tourism business on the following farms: Wolweplaat 1131, Annex Bethal 702, Ludicksdam 325, Roodedam 1211 and Du Toitsput 249, which was declared a Private Game Reserve. ▪ An existing power line already crosses Du Toitsput, Roodedam and Ludicksdam. ▪ I would highly appreciate no further lines crossing any of my properties due to the high visual impact and due to the area being (Savannah) open plains with no high trees or mountainous terrain to make this impact less visible, and also due to the type of farming. 	<ul style="list-style-type: none"> ▪ Noted. All I&AP comments will be considered as part of the detailed evaluation during the EIA phase (including specialist Visual and Socio-Economic Impact Assessments), which will inform the selection of the most preferred alignment corridor. ▪ Transmission power lines do not significantly constrain agricultural activities. Cultivated land is avoided as far as possible, but may be crossed. Irrigation as well as grazing can continue under the span of the power line.
Ms Maria Magdalena Haumann Middelplaas	<ul style="list-style-type: none"> ▪ As owner of Middelplaas I would like to request that Option 3 of the new 765kV transmission power line not be used. ▪ Because there is no residence on Middelplaas, I am currently in the process of erecting a homestead between the hills on the farm. This part is private, with good underground water and the environment is beautiful. ▪ If Option 3 is followed, the consequences for me will be catastrophic because the line will go right across the new house. ▪ Thus, I would like to request that Option 3 not be used. 	<ul style="list-style-type: none"> ▪ Comments noted for further consideration during the EIA phase. ▪ The final alignment of the proposed power line will avoid existing infrastructure as far as possible. During the negotiation phase, movement of the alignment within the 500 m corridor to be authorised by DEAT, and exact placing of pylons (towers), are negotiated and agreed with individual landowners, in order to incorporate existing infrastructure, vegetation etc., as well as agricultural and other activities.
Mr Johannes Frederick Gedeon Knipe Wilmina/Heuwelshalt	<ul style="list-style-type: none"> ▪ I have no problems with a line built across my land, as long as it is done on my terms. The servitude is not sold but rented with an annual escalation for the duration of the lines existence across the land. ▪ Annual valuation of the land and a market related interest rate to determine rental. ▪ I rent three points on which I pay monthly rent and which I would like to buy and be rid of monthly worries. 	<ul style="list-style-type: none"> ▪ Comments noted. The negotiation process between Eskom and landowners is however not part of the EIA process. The conditions referred to should be taken up with Eskom once the negotiation process commences.

NAME & ORGANISATION	ISSUES RAISED	RESPONSE
Mr Hannes (J S) Niewoudt Pederberg Boerevereniging Bakenkop	<ul style="list-style-type: none"> ▪ Please come and see me on my farm – farm name “Bakenkop”. 	<ul style="list-style-type: none"> ▪ Eskom representatives will visit all owners within the final alignment corridor as part of the negotiation phase, which does not form part of the EIA process. Given the linear extent of the proposed development (approximately 260 km), it is not possible for the project team to visit each individual landowner personally. An extensive public participation process involving public meetings and ongoing communication via telephone, fax and e-mail is being conducted to ensure the project team obtains comment from and respond to all I&APs in the study area. The dates of future public meetings will be communicated, and all I&APs are encouraged to discuss concerns with the project team at these meetings.
Mev ACE Rynhoud Vaalpan	<ul style="list-style-type: none"> ▪ Satisfied with the Environmental Scoping Report. A request that farm names appear on map once the final route is chosen. 	<ul style="list-style-type: none"> ▪ Comment noted. The farm names and portions will be reflected on the maps compiled during the EIA phase.
Mr Jan Carel Venter Poortjie	<ul style="list-style-type: none"> ▪ Please contact me if the line will be crossing my property, so that the necessary steps are taken. 	<ul style="list-style-type: none"> ▪ The exact location of the power lines with respect to individual property owners cannot be determined at this stage as there are four Corridor Alternatives being considered, of which only one will be authorised. It is suggested that landowners consult the maps provided in the ESR, and if any of the alternatives appear to traverse their property that they notify the project team of any concerns they may have.

NAME & ORGANISATION	ISSUES RAISED	RESPONSE
<p>Adv Gideon Pieter Nieuwoudt</p>	<ul style="list-style-type: none"> ▪ There are already various Eskom main lines on my property. I do not want any more. Please come and see me on my farm. 	<ul style="list-style-type: none"> ▪ Comment noted for further consideration during the EIA phase. ▪ Eskom representatives will visit all owners within the final alignment corridor as part of the negotiation phase, which does not form part of the EIA process. Given the linear extent of the proposed development (approximately 260 km), it is not possible for the project team to visit each individual landowner personally. An extensive public participation process involving public meetings and ongoing communication via telephone, fax and e-mail is being conducted to ensure the project team obtains comment from and respond to all I&APs in the study area. The dates of future public meetings will be communicated, and all I&APs are encouraged to discuss concerns with the project team at these meetings.
<p>Mr Chris Pienaar Kalkfontein Water Gebruikers Vereniging</p>	<ul style="list-style-type: none"> ▪ Herewith a general request from the Kalkfontein Water Users Association's irrigators – the existing fields and crops should be avoided at all costs during construction. Your cooperation is highly appreciated. 	<ul style="list-style-type: none"> ▪ Comment noted. The final alignment of the proposed power line will avoid existing infrastructure as far as possible. During the negotiation phase, movement of the alignment within the 500 m corridor to be authorised by DEAT, and exact placing of pylons (towers), are negotiated and agreed with individual landowners, in order to incorporate existing infrastructure, vegetation etc., as well as agricultural and other activities. ▪ Transmission power lines do not significantly constrain agricultural activities. Cultivated land is avoided as far as possible, but may be crossed. Irrigation as well as grazing can continue under the span of the power line.

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Mr Roland Toehand Luckhoff	<ul style="list-style-type: none"> ▪ The concept is perfect, more development of any kind is great, but we need a consultant, who will have to explain some aspects to the uneducated people. Otherwise the concept is 100%. ▪ Thank you for keeping us informed about each and every detail of the project, but we need more information (e.g. regarding advantages and disadvantages) communicated to the community. 	<ul style="list-style-type: none"> ▪ The ESR has been compiled with the average person in mind. A balance must however be maintained between those who require sufficient technical information to make an informed decision (authorities) and those who require the most basic information with respect to the project. ▪ The advantages and disadvantages of the project are indicated in Section 5 (Project Alternatives) and Section 7 (Possible Impacts) of the ESR. ▪ An extensive public participation process involving public meetings and ongoing communication via telephone, fax and e-mail is being conducted to ensure the project team obtains comment from and respond to all I&APs in the study area. The dates of future public meetings will be communicated, and all I&APs are encouraged to discuss any matters with the project team at these meetings.
Mr Jacobus G M van der Merwe Petrusville Boerevereniging Leeufontein	<ul style="list-style-type: none"> ▪ Effects of electromagnetic waves on arable land and other physiological aspects are not in the report. ▪ Viewed from an economic perspective, the project makes a definite contribution. ▪ Construction of own electric line turned down by the Dept of Agriculture, on condition of revisions, which is an additional financial burden. 	<ul style="list-style-type: none"> ▪ Section 7.2.9 of the ESR noted the possible impact of EMFs. The Applicant (Eskom Transmission Division) has commissioned a study into the impact of EMFs and the findings of this study will be provided as part of the EIR. It should be noted that no adverse health impacts associated with EMFs have been identified by the World Health Organisation to date. ▪ Further comments noted.
Mr Benjamin Venter Delwershoop	<ul style="list-style-type: none"> ▪ I would like to know approximately when the proposed power line will be built? ▪ Can you provide me with a map, which shows where the line will run? 	<ul style="list-style-type: none"> ▪ Construction will only commence once the negotiation process with landowners has been concluded. It is envisaged that the construction of the line will start in 2008 and end by 2010. ▪ Map provided.

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<p>Mr Philippus Nell Jacobsdal Boerevereniging Wei-en-Lei Studiegroep</p>	<ul style="list-style-type: none"> ▪ The general feeling shared by landowners is that irrigated areas must be avoided at all cost, as crossing will limit or make it impossible to use any modern irrigation infrastructure/equipment. 	<ul style="list-style-type: none"> ▪ Comment noted. The final alignment of the proposed power line will avoid existing infrastructure as far as possible. During the negotiation phase, movement of the alignment within the 500 m corridor to be authorised by DEAT, and exact placing of pylons (towers), are negotiated and agreed with individual landowners, in order to incorporate existing infrastructure, vegetation etc., as well as agricultural and other activities. ▪ Transmission power lines do not significantly constrain agricultural activities. Cultivated land is avoided as far as possible, but may be crossed. Irrigation as well as grazing can continue under the span of the power line.
<p>Mr Chris (MCJ) van Rensburg Diepfontein, Rooikraal and Bangfontein</p>	<ul style="list-style-type: none"> ▪ I would like to know the time frames for negotiation and construction of the proposed power lines. ▪ I do not have a problem with the power lines crossing my farm, as long as my conditions/specifications are adhered to. ▪ Eskom should consider leasing the servitude on a monthly basis and not a lump sum payment. The payments should be market related and include escalation for as long as the power lines are on the property. ▪ There is an Eskom transformer on my farm, which I would like to purchase. I have spoken to Eskom in the past on this matter and they would not consider it but I would like to ask them to reconsider my request. 	<ul style="list-style-type: none"> ▪ Negotiations will commence once Eskom has some surety on the preferred alternative alignment corridor. Construction will only commence once the negotiation process with landowners has been concluded and DEAT approval of the EMP has been obtained. It is envisaged that the construction of the line will start in 2008 with commissioning of the line in 2010. (Refer to section 4.5 of the ESR Addendum Report). ▪ Comments noted. The negotiation process between Eskom and landowners is however not part of the EIA process. The conditions referred to should be taken up with Eskom once the negotiation process commences.

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<p>Mr Francois Joubert (Sustainable Law Solutions) o.b.o. Mr J E de Villiers and others Brandvallei, De Werf, Sterkfontein</p>	<ul style="list-style-type: none"> ▪ Judge P Rabie of the farms Smouskraal and Oudefontein has not been consulted. ▪ The owner of the farm Leeupan has indicated that the lines do not affect his property, despite maps indicating the contrary. ▪ The ESR and supporting specialist studies do not provide adequate conclusive evidence to support the exclusion of Alternatives 1 and 2 from further assessment during the EIA Phase. ▪ Eco-tourism in the area is significant. ▪ The team needs to reconsider the geotechnical, soil and visual specialist reports. 	<ul style="list-style-type: none"> ▪ Noted for follow-up, consultation and inclusion in the I&AP Database. ▪ Noted for follow-up, consultation and inclusion in the I&AP Database. ▪ Based on preliminary specialist assessments for the EIA phase, the decision has been made to expand the scope of detailed EIA phase investigations to include all four Alternative Alignment Corridors identified during the Scoping phase. ▪ Eco-tourism will form part of the socio-economic assessment during the EIA phase. ▪ Noted.
<p>Mr CJ Landman South African National Roads Agency Limited</p>	<ul style="list-style-type: none"> ▪ SANRAL is satisfied that Eskom will contact us with regards to our requirements once the alignment of the power lines have been established. ▪ Wayleave application should be submitted to cross the N8 between Bloemfontein and Kimberley. ▪ Please note that the SANRAL is satisfied with the draft Scoping Report in which it is recorded that Eskom will liaise with SANRAL on the position and any other of our requirements with regard to power lines crossing National Roads. 	<ul style="list-style-type: none"> ▪ Comments noted.
<p>Mr Louis van Wyk Dept Openbare Werke, Paaie & Vervoer</p>	<ul style="list-style-type: none"> ▪ Crossing of proclaimed Public Roads must be done according to the Road Rights Grant Agreement between Dept of Public Works, Roads & Transport and Eskom. 	<ul style="list-style-type: none"> ▪ Comment noted.
<p>Mr Anebo Diokpala Pixley ka Seme District Municipality</p>	<ul style="list-style-type: none"> ▪ Acknowledge with gratitude receipt of the hard and electronic copies of the Scoping report. I will submit comments on the report as soon as I have gone through it. 	<ul style="list-style-type: none"> ▪ No further comments have been received to date.

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Mr Vincent Matabane Spoornet	<ul style="list-style-type: none"> ▪ Your consultancy is kindly informed that Spoornet as an organ of state subscribes to corporate environmental management policy, which is currently being applied and monitored across the organization. One of the founding principles of our policy is to mitigate environmental impacts of our activities on the environment and to further monitor those external impacts that threaten the sustainability and the reliabilities of the service we render through our infrastructure. In pursuance of the above, Risk Management, a supporting function within the Spoornet structural make-up is charged with custodianship of internal and external environmental management processes and their administration thereof. ▪ Your organisation is hereby advised that Risk Management is the contact entry point in Spoornet for all communiqué in respect of environmental initiatives, i.e. EIA's etc. Your consultancy is requested to direct correspondence pertinent to all matters related to environmental management in the future to: Mr Brave Leballo or Mr Vincent Matabane. 	<ul style="list-style-type: none"> ▪ Comments noted.
Mr Michael Oberholzer Dept. of Minerals and Energy: Free State Regional Office	<ul style="list-style-type: none"> ▪ I refer to your letter dated 29 March 06 and wish to notify you that according to office records it seems that no applications for mining rights/prospecting rights have been submitted at this office or where mining licences/mining permits/prospecting permits had been issued under previous legislation in respect of the areas of the '33 km Perseus-Hydra 2 study area' and the '12 km Beta-Perseus study area'. ▪ Currently the only area of interest, where the prospecting of diamonds is concerned, is on the boundary between the Magisterial Districts of Boshof and Petrusburg (just south of the oval shaped figure as indicated the map accompanying your relevant letter). 	<ul style="list-style-type: none"> ▪ Comments noted.

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<p>Mr Gabriel Tlhapi South African Heritage Resources Agency (Free State)</p>	<ul style="list-style-type: none"> ▪ Ensure that the requirements of Section 38 (HIA of the NHRA No. 25 of 1999) are considered and adhered to where heritage resources may be affected. 	<ul style="list-style-type: none"> ▪ Noted. Every precaution with respect to Section 38 of the NHRA, 1999 (Act No. 25 of 1999) will be taken for the proposed development. A specialist study on the archaeological resources that may be affected by the various Corridor Alternatives has been commissioned for the project. The location of all identified artefacts will be mapped during the EIA Phase and this information will influence the selection of the most preferred Corridor Alternative. Furthermore, should the development be authorised, a registered archaeologist will assess and verify the placement of every pylon structure prior to the construction thereof commencing. No artefact will be destroyed or removed without consultation with landowners and the requisite permission from the South African Heritage Resources Agency (SAHRA).
<p>R Dyssel South African Heritage Resources Agency (National) <i>(‘Review Comment on Archaeological Impact Assessment’)</i></p>	<ul style="list-style-type: none"> ▪ This report assesses the impact of the proposed power transmission lines on the cultural heritage resources in the study areas as part of the environmental scoping Hydra-Perseus and Beta-Perseus 765KV Transmission Power Lines Environmental Impact Assessment Eskom Holdings Limited Environmental Scoping Report. A full Phase 1 report in the field was not conducted, and the evaluation was based on existing published information, a short field trip and low altitude helicopter tour on the area (1 200 000 km²). ▪ The report indicates that numerous ‘open’ Stone Age sites of low heritage significance occur in the area and the proposed development will have a low impact on these sites. The developers must contract an archaeologist to assess each pylon site and construction campsite before these are developed. This Phase 1 archaeological assessment will indicate where Phase 2 collection of “open” Stone Age sites must take place, whilst stratified sites (if any) should be excavated. The Phase 2 work will require permit from SAHRA. 	<ul style="list-style-type: none"> ▪ Noted. The report reviewed was a basic scoping assessment conducted for the Scoping phase by the study team’s cultural heritage specialist Mr A van Jaarsveld, and is not regarded as a complete Heritage Impact Assessment. A detailed assessment will be conducted during the EIA phase. ▪ Comments noted for inclusion into the EMP to be developed. Should the development be authorised, a registered archaeologist will assess and verify the placement of every pylon structure prior to the construction thereof commencing. No artefact will be destroyed or removed without consultation with landowners and the requisite permission from the South African Heritage Resources Agency (SAHRA).

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<p>R Dysssel South African Heritage Resources Agency (National) (<i>Review Comment on Archaeological Impact Assessment</i>)</p> <p>(Continued from previous section)</p>	<ul style="list-style-type: none"> ▪ The historic buildings, Anglo Boer War Battlefields and declared historical monuments are 'no-go' areas for the developers and if in any danger of being disturbed must be cordoned off during development. The same applies to sites where rock paintings and engravings occur. All graves/ burial grounds must be avoided or cordoned off. If this is not possible a permit for relocation must be applied for in terms of the heritage legislation and regulations. ▪ The construction team needs to be made aware of that most archaeological material is to be found below ground surface. Should sites, graves or other features be found during construction or mining, an archaeologist should be alerted immediately. ▪ The SAHRA Archaeology, Palaeontology and Meteorite unit supports the recommendations of the specialist. As long as the recommendations as modified above are implemented and there are no other heritage resources that will be impacted, this unit has no further objection to the development proceeding. 	<ul style="list-style-type: none"> ▪ All comments noted for inclusion into the EMP as relevant. ▪ Historic buildings, Anglo Boer War Battlefields and declared historical monuments are recognized as 'no-go' areas. The same applies to sites where rock paintings and engravings occur. Graves/burial grounds will be avoided and cordoned off if in close proximity to construction activities. ▪ Noted for inclusion into the EMP. Should the development be authorised, a registered archaeologist will assess and verify the placement of every pylon structure prior to the construction thereof commencing. All sensitive areas in proximity to construction activities will be clearly marked. ▪ Noted.
<p>Mr Gabriel Tlhapi South African Heritage Resources Agency (Free State) (<i>Further comments based on review of Heritage Impact Assessment</i>)</p>	<p>We have taken notice of the contents of your report and would like to comment on it. As you are aware section 38 of the National Heritage Resources Act (No 25 of 1999) makes provision for an impact assessment to be done when heritage resources may be affected by the development.</p> <p>Therefore in terms of subsection (2)a the following information should be included in the Heritage Impact assessment report:</p> <ul style="list-style-type: none"> ▪ Wide angled photo of the site. ▪ Close up photos of the site or any heritage resources that may occur. ▪ 1: 50 00 map clearly showing the position of the site and the map grid reference. 	<ul style="list-style-type: none"> ▪ Noted. The report reviewed was a basic scoping assessment conducted for the Scoping phase by the study team's cultural heritage specialist Mr A van Jaarsveld, and is not regarded as a complete Heritage Impact Assessment. A detailed assessment will be conducted during the EIA phase. ▪ Due to the size of the study area, all the requested information cannot be provided. The length of the line would be approximately 260 km, and therefore stretches over an area too large to photograph and made up of ± twenty-two 1:50 000 maps. The ESR did however contain an overview map with sensitive areas indicated, which will be updated during the EIA phase. Close up photographs of significant findings will also be included in the EIR.

NAME & ORGANISATION	ISSUES RAISED	RESPONSE
<p>Mr Gabriel Tlhapi South African Heritage Resources Agency (Free State) <i>(Further comments based on review of Heritage Impact Assessment)</i></p> <p><i>(Continued from previous section)</i></p>	<ul style="list-style-type: none"> ▪ The Identification and mapping of all heritage resources in the affected area and an assessment of the significance of such resources in terms of section 6 (2) and 7 of the above-mentioned act. ▪ An assessment and evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development. ▪ The results of consultation with communities affected by the proposed development and other interested parties on heritage resources. ▪ If the heritage resource will be adversely affected by the proposed development alternatives should be considered. ▪ Plans for mitigation of any adverse effects during and after the completion of the proposed development must be drafted. <p><i>After reading your report the following observations were made:</i></p> <ul style="list-style-type: none"> ▪ On page 6 of the report it is written, "This report gives an overview of cultural heritage resources in the study area (see map)". But there is no map attached. ▪ On page 11 under the sub title Rock art and engravings, it is written in the second paragraph, "There are known to occur at several places within the study area, some of which are marked on the map." There is no map attached. ▪ On page 17 under the sub tile Recommended Management/ Mitigation activities, it is written, "Recommendations regarding mitigation of specific cultural resources are therefore problematic." This is precisely why we request developers to appoint Archaeologists and heritage specialists; therefore a specialist should make a recommendation in this regard. ▪ On page 18 under the heading Conclusion, it is written that, "The construction of the three power lines as proposed by Eskom, will have a LOW impact on cultural heritage resources within the study area." It is also not clear which criteria was used to determine that the impact on cultural heritage resources would be low. It is also not clear particularly which heritage resources within the study area will be affected. 	<ul style="list-style-type: none"> ▪ Noted. The information requested in the first three points will be updated (from that in the ESR) as part of the detailed assessment during the EIA phase, and included in the EIR. ▪ Noted. The consideration of alternatives and recommendation of a preferred alignment with least total impact, as well as the development of mitigation measures for inclusion into the EMP, would form a principal part of the EIA phase and associated detailed studies. ▪ The cultural heritage sensitivity map was included as Appendix 5.3.2 of the ESR. This sensitivity map will be updated during the EIA phase. ▪ See above. ▪ Recommendations to this effect will be done based on the findings of the detailed assessment to be conducted during the EIA phase by Mr van Jaarsveld, a registered cultural heritage specialist. ▪ The conclusion drawn was largely based on the fact that sensitive areas can be avoided and that the actual footprint (area of impact) of the power line towers are small. However, the detailed assessment during the EIA phase will include an impact assessment where the significance of impacts will be determined based on criteria acceptable to DEAT (e.g. nature, duration and extent of impact).

NAME & ORGANISATION	ISSUES RAISED	RESPONSE
<p>Ms Basani Mkhombo Northern Cape Department of Tourism, Environment and Conservation</p>	<ul style="list-style-type: none"> ▪ This letter serves to inform you that the Scoping Report and Plan of Study for EIA for the abovementioned project (DEAT ref: 12/12/20/782) has been approved by our Department, and thus recommend authorisation by the National Department of Environmental Affairs and Tourism. ▪ The applicant may proceed with the Environmental Impact Report as defined in Regulation 8 of Government Notice R. 1183 of 5 September 1997 if Authorisation is obtained from the National Department of Environmental Affairs and Tourism. ▪ During the Environment Impact Process, the applicant must also take note of the following: <ul style="list-style-type: none"> – As set out in the plan of study for EIA, a detailed specialist investigation must be conducted for the potential impact on the avi-fauna for the proposed alternative 3 and alternative 4 corridors with proposed mitigation measures. – An investigation must also be conducted for the potential health impacts due to exposure of electromagnetic fields (EMF) for power lines on humans and animas. – An Environmental Management Plan (EMP) for the construction phase and operational phase of the proposed project with all the relevant mitigation measures should be incorporated into the Environmental Scoping Report. 	<ul style="list-style-type: none"> ▪ Noted. ▪ The detailed EIA phase will be proceeded with accordingly. ▪ Please see Section 5.2 of the ESR Addendum Report. The preliminary findings of the specialist studies conducted in the EIA Phase suggest the need for all Corridor Alternatives to be evaluated in detail during the EIA Phase. This will include a number of specialist investigations of potential impacts, including those on avi-fauna. ▪ The Applicant (Eskom Transmission) has commissioned a study into the impact of Electromagnetic Fields (EMFs) and the findings of this study will be provided as part of the EIR. It can be noted that no adverse health impacts have been identified by the World Health Organisation to date (See Section 7.2.9 of the ESR). ▪ An EMP will be compiled for the construction and operational phases of the project. However, since an EIR will be compiled, which will investigate the significance of potential impacts, the EMP will be developed based on this assessment, as well as the conditions for authorisation set by DEAT, and accordingly does not form part of the ESR.

NAME & ORGANISATION	ISSUES RAISED	RESPONSE
<p>Ms Basani Mkhombo Northern Cape Department of Tourism, Environment and Conservation</p> <p><i>(Continued from previous section)</i></p>	<ul style="list-style-type: none"> - All municipalities in which the proposed project may cross must be informed and engaged in the process. - The language of different sector groups in each of the affected areas must be taken into consideration during the public participation processes. - All affected farmers and other stakeholders whose land will be affected by the proposed project should be fully consulted and their issues be fully addressed on the environmental impact report. - Where ownership of land does not belong to Eskom, Eskom should seek an agreement with the affected property and submit evidence of such agreement with the property owners. 	<ul style="list-style-type: none"> ▪ All municipalities have been identified and informed of the proposed project. ▪ The language preference of I&APs is being considered during the public participation process. The majority of I&APs in the study area are Afrikaans speaking and most public meetings have thus been conducted in this language. Reports have been compiled in English and summarised in Afrikaans. I&APs are welcome to submit their comments in any language and a response will be provided in that language. ▪ Landowner identification and consultation is an ongoing activity throughout the EIA process. The size of the study area makes the identification of all landowners a laborious process, and I&APs who are aware of neighbouring landowners who have not been identified are encouraged to provide their details to the project team so that they can be added to the I&AP database and thus included in any correspondence. All comments raised are considered and appropriately addressed by the EIA project team. ▪ Negotiations will commence once Eskom has some surety on the preferred alternative alignment corridor.

APPENDIX 3
PRELIMINARY LAYOUT OF PROPOSED PERSEUS
SUBSTATION EXPANSION

APPENDIX 4
AMENDED PLAN OF STUDY FOR EIA