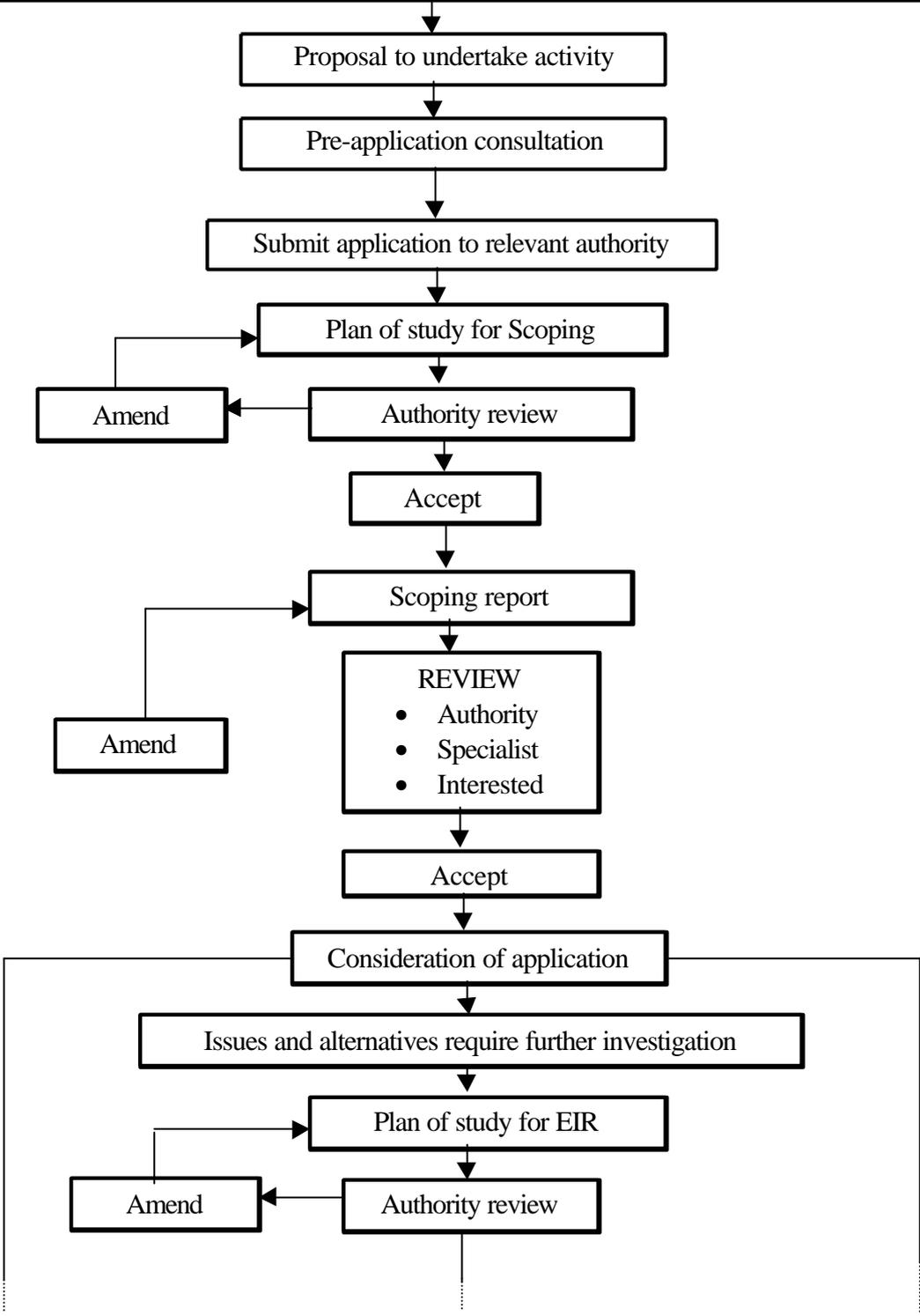


APPLICATION PROCEDURE
for activities listed in terms of section 21 of the Environment Conservation Act, 1989



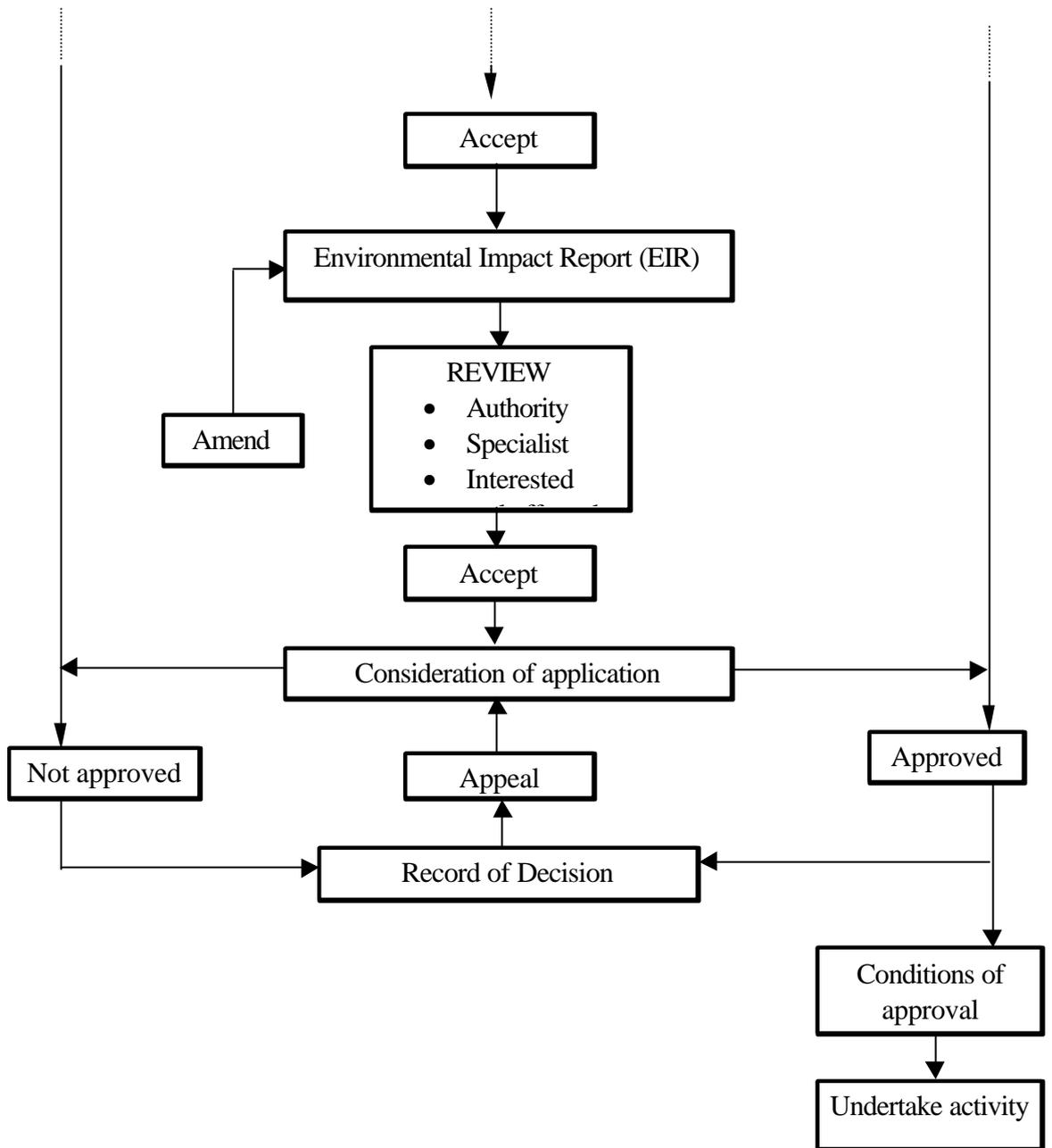


Figure 1: National EIA Process

PLAN OF STUDY FOR SCOPING

ENVIRONMENTAL SCOPING FOR THE

ESKOM DUVHA – JANUS

TRANSMISSION LINE AND JANUS

SUBSTATION

Date of Submission: December 2002

Prepared by:

Theo Ferreira

Environmental Impact Management Services (Pty) Ltd

P.O. Box 2083, Pinetown, 2123

Tel: (011) 789-7170

Fax: (011) 787-3059

e-mail: theo@eims.co.za

DOCUMENT CONTROL

PLAN OF STUDY FOR SCOPING: ESKOM DUVHA JANUS TRANSMISSION LINE

	Name	Signature	Date
COMPILED:	Theo Ferreira		
CHECKED:	Paulette Jacobs		
AUTHORIZED:	Theo Ferreira		

DISTRIBUTION LIST

AGENCY, ORGANISATION OR PERSON	NO. OF COPIES
Department of Finance and Economic Development	1

REVISION AND AMENDMENTS

DATE	No.	DESCRIPTION OF REVISION OR AMENDMENT

PLAN OF STUDY FOR SCOPING

ESKOM DUVHA-JANUS TRANSMISSION LINE AND JANUS SUBSTATION

Submitted to the National Department of Environmental Affairs and Tourism to fulfil the requirements of Government Notices No. R.1182 and R.1183 of the Environment Conservation Act (No. 73 of 1989)

APPLICATION SUMMARY DATA

- PROJECT:** Construction of a 400kV transmission powerline from Duvha power station to a new substation known as Janus in the Steelpoort area.
- LOCATION:** The area between Witbank, Middelburg, Groblersdal, Stoffberg, Roosenekal and Steelpoort
- APPLICANT:** ESKOM
Contact: Ms. Mamokete Mafumo
Contact details: PO Box 1091
Johannesburg
2000
Tel: (011) 800 2621
Fax: (011) 800 3917
- CONSULTANT:** Environmental Impact Management Services (Pty) Ltd
Contact: Theo Ferreira
Contact details: PO Box 2083
Pinegowrie 2123
Tel. (011) 789-7170
Fax. (011) 787-3059

TABLE OF CONTENTS

Section	Aspect	Page
1	PROBLEM STATEMENT	1
1.1	DESCRIPTION OF THE ACTIVITY	3
1.1.1	<i>Retain Status Quo</i>	3
1.1.2	<i>Demand side management</i>	3
1.1.3	<i>New generation systems</i>	3
1.1.4	<i>Upgrade existing Transmission lines by using bigger conductors</i>	4
1.1.5	<i>Construct a 400 kV Transmission line between Duvha Power Station and Janus Substation</i>	4
2	ENVIRONMENTAL-LEGAL REQUIREMENTS APPLICABLE TO THIS ACTIVITY.....	4
2.1	ENVIRONMENT CONSERVATION ACT	4
2.2	NATURAL HERITAGE RESOURCES ACT	5
3	KEY TASKS TO BE PERFORMED AS PART OF THE SCOPING PROCESS.....	5
3.1	NEEDS ANALYSIS	5
3.2	GATHERING OF AVAILABLE BACKGROUND INFORMATION.....	5
3.3	PUBLIC PARTICIPATION PROCESS.....	6
3.3.1	<i>Pre-application consultation meeting</i>	6
3.3.2	<i>Consultation with authorities</i>	6
3.3.3	<i>Involvement of other Interested and Affected Parties (I&APs)</i>	6
3.3.4	<i>Identification</i>	7
3.3.5	<i>Public notices</i>	7
3.3.6	<i>Public meeting</i>	8
3.3.7	<i>Background information document (BID)</i>	8
3.3.8	<i>Reporting</i>	8
3.3.9	<i>Feedback</i>	9
3.4	SPECIFIC ENVIRONMENTAL ISSUES TO BE INVESTIGATED.....	9
3.5	IDENTIFICATION OF ALTERNATIVES	10
3.6	PREPARATION OF SCOPING REPORT	10
3.7	APPEAL PERIOD.....	10
4	SCHEDULE OF TASKS FOR THE SCOPING STUDY.....	10
5	INDEPENDENCE.....	11

1 PROBLEM STATEMENT

The Steelpoort area is characterised by the existence of huge mining reserves. These are in the form of platinum group metals and ferrochrome reserves. The electrical load in this area will reach 465 MVA before the end of year 2002. The confirmed new loads will push this peak to 546 MVA in 2003. If other highly likely loads materialise, the peak will reach about 797 MVA in 2004.

The main source of electrical energy in South Africa is found in the Mpumalanga coalfields. The relatively low cost of coal makes it economical to build large power stations in this area and transmit the power over large distances by the use of Power Lines.

Due to the increase of loads in the Rustenburg and Polokwane areas, the capacity of the Steelpoort network is consumed and the network will not adequately cater for its loads if one line goes out service. This makes it difficult to carry out routine maintenance, the condition of the line can deteriorate and this will result in poor line performance (faults etc.).

Studies have shown that in the Steelpoort area the collapse (break) point will be reached if the load reaches 680 MVA, i.e. the network will collapse. It is for this reason that Eskom is working on plans to reinforce the power supply to the area by construction of a line from the Mpumalanga area to the Steelpoort area. This will help stabilise the voltage in the area and provide capacity for future load growth.

At present there are two major 400 kV power lines to the Steelpoort Area. It is being proposed that a third line be constructed to address the problems described above.

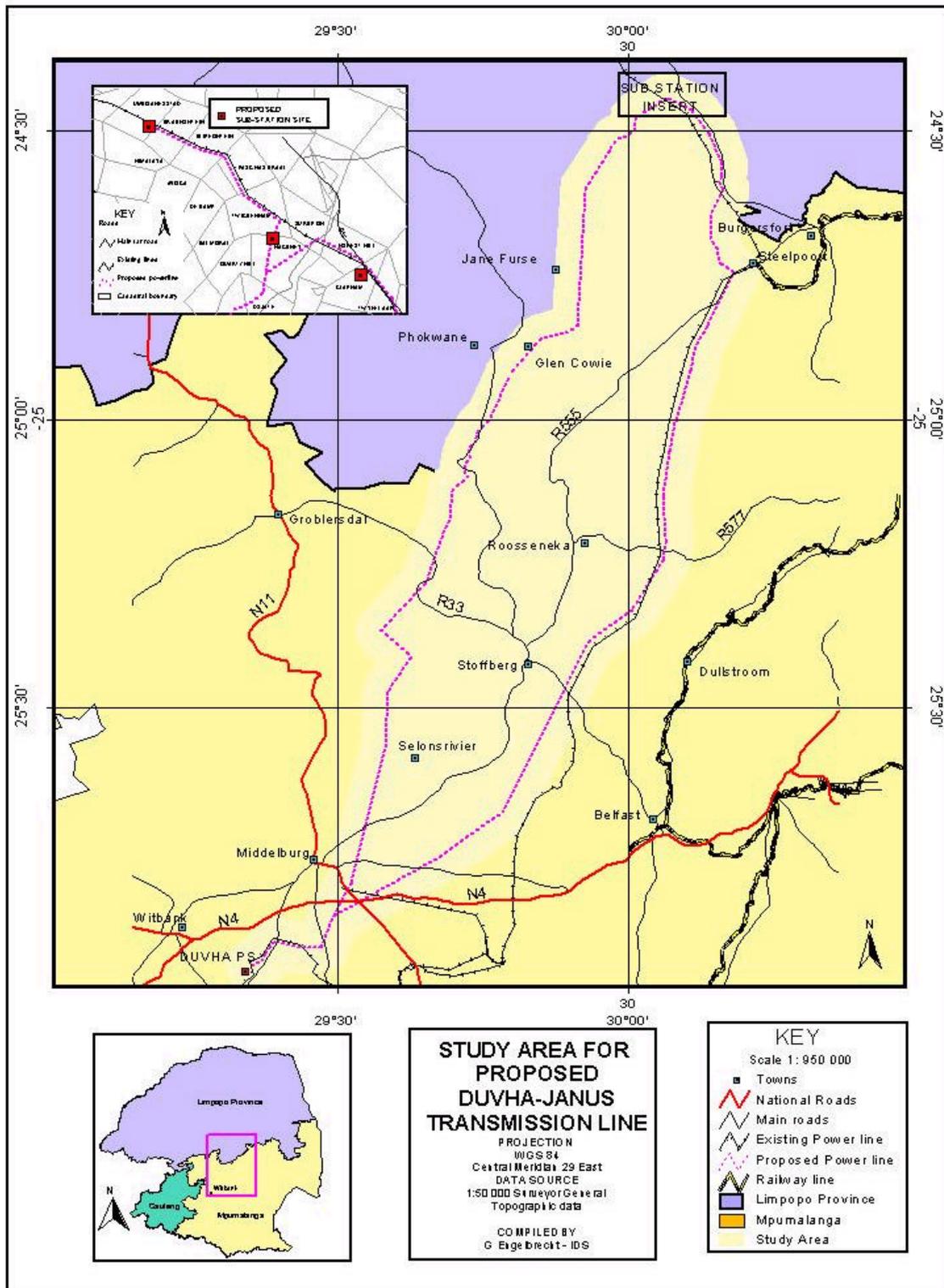


Figure 1: Contextual setting of the Duvha-Janus line.

1.1 DESCRIPTION OF THE ACTIVITY

The following alternatives for satisfying the twofold need for additional electrical supply to the region and optimising the existing infrastructure were investigated by Eskom:

1.1.1 *Retain Status Quo*

To maintain the status quo is the easy way out. By not taking timeous action, Eskom may end up with a situation of not being able to ensure firm supply into the region in the very near future. This would eventually lead to load shedding which can cause major disruptions of power supply to different areas at different times. New township and industrial developments in the region in the near future may cause overloading of the existing transmission system, with resultant power failures. The growth in the area is the largest economic activity taking place in the region at the moment, and is critical to the economic development of the region. This option is therefore ruled out because it would neither supply the projected demand for electricity nor optimise the existing infrastructure.

1.1.2 *Demand side management*

Demand Side Management (DSM) can generally be defined as the activities performed by the electricity supply utility, which are designed to produce the desired changes in the load shape through influencing customer usage of electricity and to reduce overall demand by more efficient use. These efforts are intended to produce a flat load duration curve to ensure the most efficient use of installed network capacity. By reducing peak demand and shifting load from high load to low load periods, reductions in capital expenditure (for network capacity expansion) and operating costs can be achieved. Some of the basic tools are the price signals (such as time of use tariffs) given by the utility and direct load management. This option is practised to a certain extent, but is currently not considered feasible for expansion in this particular region.

Eskom is currently looking at various means to achieve a flatter load profile in this area. However, the large concentration of industrial users in this area makes this a very difficult option to pursue.

1.1.3 *New generation systems*

A new coal fired, gas or nuclear generation plant could be commissioned near to the load centre. This would have a greater overall negative impact on the environment, therefore this option was not investigated, as Eskom does not experience a shortage in generation capacity at present, only the means to transmit power to the load centres. Transmitting power through Transmission lines is currently the cheapest way to supply the end customers.

1.1.4 ***Upgrade existing Transmission lines by using bigger conductors***

The physical load on the existing towers would increase substantially and the towers would be inadequate. Furthermore, it would not be possible to remove one 400 kV line from service to perform the upgrading work, as the remaining line would not be able to supply the electrical loads in the region. This option would not optimise the existing infrastructure or permit future growth

1.1.5 ***Construct a 400 kV Transmission line between Duvha Power Station and Janus Substation***

This option will sufficiently reinforce the present network, as it will form the third 400kV feeder into Steelpoort. The line will provide additional capacity so that the overall network in Steelpoort does not collapse. This will increase the amount and security of power that can be transferred to Steelpoort. This is the option most favoured by Eskom.

This alternative is probably the most economical apart from doing nothing and will ensure optimal use of the acquired servitude. At a cost of approximately R850 000 per kilometre, this is the cheapest option for Eskom. The need for increased capacity and the need for optimising existing infrastructure would be met.

The advantages with this option are as follows:

- It improves the network capacity by increasing the voltage collapse limit.
- It improves the reliability of supply to Janus substation since the line is sourced from a completely different power substation.

The need for increased capacity and the need for optimising existing infrastructure will be met in this way, and this option was put forward as the most feasible option by Eskom.

2 ENVIRONMENTAL-LEGAL REQUIREMENTS APPLICABLE TO THIS ACTIVITY

2.1 Environment Conservation Act

The Environment Conservation Act (Act 73 of 1989) provides for the effective protection and controlled utilisation of the environment and for matters incidental thereto. Section 21 of the Environment Conservation Act (ECA) makes provision of the identification of activities that may have a substantial detrimental effect on the environment. On 5 September 1997 regulations were promulgated under Section 21

of the ECA whereby activities that may have a substantial detrimental impact on the environment, were identified and the method to determine its impact is explained (Government Notice 1182 and 1183). One of these identified activities is construction of facilities for the transmission of electrical power.

As a result of the above environmental authorisation is required from the National Department of Environmental Affairs and Tourism (DEAT) before the construction of the Duvha-Janus transmission line and Janus substation may begin.

2.2 Natural Heritage Resources Act

The Natural Heritage Resources Act (Act 25 of 1999) strives to ensure that the natural heritage of South Africa is protected. Section 38 of the Act indicates that any person who intends to undertake a development such as the construction of a road must at the very early stages notify the responsible heritage resources authority and furnish them with details regarding the location, nature and extent of the proposed development. The responsible heritage resources authority could, within 14 days of receipt of a notification, request an impact assessment if there is any reason to believe that the natural heritage resources in the area will be affected. The responsible heritage resources authority may also notify the applicant that this section of the Act does not apply.

3 KEY TASKS TO BE PERFORMED AS PART OF THE SCOPING PROCESS

Tasks listed hereunder are limited to the Scoping Study only.

3.1 Needs Analysis

The applicant through the Environmental Consultant will provide summary information of the need for this development. This information will be incorporated into the scoping report.

3.2 Gathering of available background information

The purpose of this task is to obtain as much as possible technical information on the required engineering works. This type of information will also assist in describing the need for the project and whether this is in line with the perceptions of the information obtained during the public participation process.

The information will also assist in obtaining an understanding of the required engineering works and how this could impact on the environment. When related to a

specific section of the line, alternatives to a specific design detail could also be identified.

3.3 Public Participation Process

3.3.1 *Pre-application consultation meeting*

Department of Environment and Tourism (DEAT) was identified as the lead authority in the EIA process. DEAT was identified as the lead authority since the proposed development stretches over the borders of two provinces (in this case Mpumalanga and Limpopo). A pre-application consultation meeting took place between the proponent (Eskom), the environmental consultant (EIMS) and the lead authority (DEAT). The meeting was attended by Danie Smit from DEAT, Representatives from Mpumalanga province, Mamokete Mafumo and Carol Streaton from Eskom and Theo Ferreira from EIMS attended the meeting. The objective of the pre-application meeting was to get agreement from DEAT on the process planned, applicable legal requirements etc before the application and Plan of Study is submitted.

3.3.2 *Consultation with authorities*

3.3.2.1 *Provincial authorities*

The environmental departments of the provincial governments in the Mpumalanga and Limpopo Provinces will be consulted. The transmission line's route stretches over both these provinces and these provincial authorities are therefore key stakeholders. A pre-application meeting has already been held and a site visit will be undertaken in January.

3.3.2.2 *Local authorities*

Local authorities of all the towns, cities and regions through which the transmission line may pass will be consulted. Meetings were held on 18 and 19 November 2002 with telephonic follow-ups. These authorities are considered a valuable source of information (in identifying sensitive areas, community profiles etc). These authorities may also be able to assist in identifying other interested and affected parties (I&APs) in their relevant areas.

3.3.3 *Involvement of other Interested and Affected Parties (I&APs)*

All stakeholders or I&APs should be afforded the opportunity to become part of the process, to share and exchange information as well as raise their concerns. The process will be transparent and streamlined by involving I&APs. Ultimately this will achieve sustainable development since the public will accept and support the project and provide their co-operation in its successful completion.

3.3.4 **Identification**

Once all I&APs have been identified, they will become involved in the consultation process. I&APs include people possibly being affected by the activity (residents, owners of land, local businesses etc), people having an interest in the activity (provincial authorities, government officials, media etc) and people having an interest in the considered environment (environmental activists, environmental groups, civic or community forums/organisations, commerce and business groups etc). I&APs already identified include:

- Eskom
- Department of Environment and Tourism (DEAT)
- Limpopo Province Department of Environment
- Mpumalanga Province Department of Environment
- Local authorities
- Landowner of proposed location of substation
- Landowners along the proposed route

The Eskom database and list of authorities will be a starting point in identifying I&APs. Discussions with relevant authorities will provide details on other I&APs in the area. Public notices will also provide I&APs with an opportunity to come forward or register.

3.3.5 **Public notices**

Public notices provide an official announcement of an intent to undertake an activity. Public notices will be used to draw the attention of I&APs and request their input.

Public notices will as a minimum contain the following information.

- Name of proponent (Eskom)
- Address relevant to planned activity (name of farm where sub-station construction is planned, route of transmission line mentioning the major towns along the route)
- Brief description (sub-station and 400kV transmission line of about 230 km)
- Name and contact details of person to be contacted (EIMS contact details)
- Details of public involvement (date and venue for public meeting)
- Procedure for comments (register as an I&AP by contacting the above or provide comments to contact person)
- Closing date for registration and comments

- Supporting information (a background information document will be made available upon request).

The distribution of public notices would be such as to reach all segments of the affected community. The most effective method of distribution (advertising) will be sought. Authorities in the area will be consulted for guidance in this regard. The following will be conducted as a minimum:

- Newspaper advertisement – a display advertisement of 100 mm by 80 mm will be placed in four of the local Newspapers (Middelburg observer, Steelburger, Daller and Lydenburg News) as agreed with DEAT.
- Flyers will be distributed at major shopping areas, clinics, “kooperasies” and at municipal buildings.
- Public announcements may be considered (Marnet two-way radio system used for security purposes by farmers).
- Notices will be placed on bulletin boards at clinics, shopping areas, “kooperasies” and municipal buildings. Notices will also be placed on farm gates encountered along the proposed routes of the transmission line to inform owners or tenants.
- An internet site for the proposed project has been established. This allows the I&APs to register and/or comment via the internet.

3.3.6 ***Public meeting***

Three public meetings will be arranged in February 2003 to afford the public the opportunity to raise issues, note concerns, ask questions or make comments.

3.3.7 ***Background information document (BID)***

The BID informs the public about the regulatory process followed as well as technical issues with regards to the proposed activity. Information on the project with a brief project description and general management measures will be included. The BID will be made available to all I&APs requesting a copy

3.3.8 ***Reporting***

The procedure through which I&APs were afforded the opportunity to participate and at which stages they were afforded the opportunity will be recorded.

All issues and concerns raised, comments made and questions asked will be recorded, written comments will be also be filed and verbal comments will be noted and filed. All discussions will be followed up with written notes to confirm discussions, actions to be taken etc. Information will be summarised and captured in

a database and will be linked to a locality map (GIS). Information to be recorded will include:

- Date and time;
- Name of person;
- Organisation represented;
- Contact details (physical and postal address, telephone and fax numbers, e-mail);
- Comments/issues/concerns/questions;
- Environment to which it applies (water, air etc); and
- Response (status of the comment – has it been addressed, mitigation measures suggested, actions taken etc).

3.3.9 ***Feedback***

Feedback will continuously be provided to the I&APs. This includes feedback on activities, upcoming events, progress, applications, corrective action planned, mitigation measures, response to comments etc. A feedback meeting is also planned once all comments have been received and the comment period has expired.

The Scoping report will be made available to the public for their comment/review. I&APs will be afforded the opportunity to express their view regarding the scope of the report including alternatives considered and the extent to which issues raised were addressed. A key stakeholder workshop will be held to ensure that all issues are considered in the further planning of the project.

3.4 **Specific Environmental issues to be investigated**

The key environmental issues that will require investigations are the following:

- Impact of the line and substation construction on fauna and flora, including specific focus on avifauna with regards to the transmission line.
- Impacts on sites of possible historical significance, with specific focus on known sites in the Steelpoort Valley – Twickenham area.
- Visual impact of the transmission line
- Social and Tourism impacts of the transmission line and substation.

The purpose of environmental scoping is to further identify any unknown issues of concern that needs investigation and consideration for the EIA phase.

As part of the scoping phase specialist input will be sought with regards to the following fields:

- Archeology and Anthropology (Dr. Johnny Van Schalkwyk)
- Ecology (Mr David Hoare)
- Tourism (Mr. Adriaan Rall)
- Social Studies (Afrosearch Consultants)
- Avifauna (Mr. Chris Van Rooyen)

3.5 Identification of alternatives

If any of the issues and concerns identified during the scoping phase are regarded as significant by the relevant authority, I&APs, or the consultant, alternatives or appropriate corrective action measures to that aspect of the line will be sought. These alternatives and corrective action measures will be included in the Scoping Report, along with other comments pertaining to effectiveness and likely cost implications.

3.6 Preparation of Scoping Report

A Scoping Report will be prepared according to the requirements of Government Notice R1183, and will be submitted to the Department for review and decision making.

3.7 Appeal period

Any party may lodge an appeal against the decision made by the DEAT with regard to the Record of Decision (RoD). An Appeal to the Minister under Section 35(3) of the Environment Conservation Act must be done in writing 30 days from the date on which the RoD was issued.

4 SCHEDULE OF TASKS FOR THE SCOPING STUDY

A schedule of tasks for the scoping study is set out in the attached Gantt chart.

5 INDEPENDENCE

In recognition of the requirement of independence applicable to the consultant, as indicated under Government Notice R1183 and the Guidelines published by the *Department of Environmental Affairs and Tourism* (February 1998), we wish to confirm that our firm:

- is not in the permanent service of the applicant;
- is not involved in both the design work and environmental studies on the same project;
- earns less than 50% of their income from the applicant; and
- payment for the work does not depend upon the successful approval of the application.