

GREEN MATTERS !

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1. INTRODUCTION

The development and expansion of the transmission and distribution infrastructure in South Africa was by and large deferred over the past years, due to various reasons. The resultant delay in the investment and expansion of the infrastructure in municipal and Eskom networks has seen many lines reaching their capacity and substations exceeding their firm supply capacity. The volume of new power lines and substations that are planned for execution in the next 5 years in South Africa is phenomenal.

The construction of power lines and substations are however regulated activities in terms of the environmental legislation and its regulations. Formal authorisation is required for each line that is to be erected and for each substation that is to be constructed. Past experience has shown that such authorisations can take several months to obtain. Fortunately with the new regulations that came into effect in July 2006, time limits have been stipulated for the review and granting of authorisations. The overall time period required for an application can however exceed the guideline period if the application is not complete or if additional investigations are requested.

The purpose of this paper is to inform electrical engineers and electricity utilities of the environmental legislation that exists, in order that they can ensure that the infrastructure that they have constructed and plan to construct, is in compliance with the Act and its Regulations. More importantly the purpose of this paper is to mobilise utilities to commence with the relevant applications for environmental authorisation, as construction of substations and power lines may not commence without such authorisation, which takes on average approximately six months to obtain. A six month delay on the upgrading or establishment of infrastructure that is crucial to the utility's service delivery is significant and can have potential catastrophic results.

2. ENVIRONMENTAL LEGISLATION

2.1 Environmental Governance

2.1.1 *King Code on Corporate Governance II – 2002*

The King Code on Corporate Governance II – 2002 establishes directors of a business as the focal point of the corporate governance system, with ultimate accountability and responsibility for the performance and affairs of a business. Although Management Committees with formally determined terms of reference, roles and functions constitute an important element of the process, the delegation of authority to any other committee does not in any way mitigate or dissipate the discharge of the directors of their duties and responsibilities. Every management team should also adopt a formal charter describing its roles and responsibilities, which should be disclosed in the annual report.

The directors of a utility must therefore ensure that the following environmental related responsibilities are implemented in order to ensure compliance with the King Code:

- Determining the Utility's objectives and values including the Utility's environmental policy;

- Determining the strategy to achieve the Utility's objectives and to implement its values;
- Ensuring that effective and practical environmental procedures and practices are in place that protect the Utility's assets and reputation;
- Monitoring and evaluating the implementation of environmental related strategies, policies, management performance criteria and business plans;
- Ensuring that the Utility complies with all relevant environmental laws, regulations and codes of best business practice;
- Identifying key environmental related risk areas at an early stage in order to develop the relevant key performance indicators of the Utility to good environmental and social responsibility;
- Regularly assessing the environmental impacts and the performance and effectiveness of the Utility, including its directors, to implement acceptable environmental impact mitigation measures.

2.2 Over-arching legislation

2.2.1 *The Constitution of the Republic of South Africa – Act 108 of 1996*

Everyone has the right to an environment that is not harmful to their health or well-being and everyone has the right to have the environment protected for the benefit of present and future generations, through responsible legislative and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development.

Should the Utility's actions potentially result in an environment that is harmful to the health or well-being of the public, it is advisable to conduct a full environmental impact assessment.

2.2.2 *The Environmental Conservation Act (ECA) – Act 73 of 1989*

The Environmental Conservation Act, Act 73 of 1989 was the first Act to introduce the requirement to undertake an Environmental Impact Assessment (EIA) in South Africa.

Section 21 of the ECA provides that the Minister of Environmental Affairs and Tourism may, by notice in the Government Gazette, identify certain listed activities, which in his opinion may have a detrimental effect on the environment. The identification takes place after consultation with certain other ministers. The activities that were listed include land use and transformation, water use and disposal, electricity generation and distribution, resource renewal to name a few.

Regulations giving effect to the EIA provisions under the Environmental Conservation Act, Government Notice : Regulation 1182 (R1182) were promulgated on the 5th September 1997. Regulation 1182 identified certain activities as activities that were considered substantially detrimental to the environment. These regulations were amended by Government Notice : Regulation 670 of 7 May 2002. These regulations have since been replaced by new regulations that were passed by the Minister in April 2006, and came into effect on the 1st July 2006.

2.2.3 *The National Environmental Management Act (NEMA) Act 107 of 1998*

The principles of NEMA include that decisions must be taken in an open and transparent manner and access to information must be provided in accordance with the law.

In April 2006 the Minister of Environmental Affairs and Tourism passed regulations in terms of Chapter 5 of the National Environmental Management Act. These regulations replace the environmental impact assessment (EIA) regulations that were promulgated in terms of the Environmental Conservation Act and introduce new provisions regarding environmental management frameworks.

The two regulations R386 and R387 of 2006, make provision for the undertaking of a Basic Assessment and a Scoping/EIA respectively.

2.2.4 *National Environmental Management Amendment Act, Act 8 of 2004*

Section 24(1) of NEMA, Act 8 of 2004, (which Act came into effect on the 7th January 2005) provides that in order to give effect to the general objectives of integrated environmental management, the potential impact on the environment of listed activities must be considered, investigated, assessed and reported to the competent authority charged by this Act with granting the relevant environmental authorisation.

2.2.5 *The national Water Act, Act 36 of 1998 – GN R 704 of 4 June 1999*

2.2.6 *Occupational health and Safety Act, Act 85 of 1993 – Major Hazard Installation Regulations – GN R692 of 30 July 2001*

3. ENVIRONMENTAL AUTHORISATION

3.1 Infrastructure for electricity that requires authorisation

The former regulation defined the construction, erection or upgrading of facilities for commercial electricity generation with an output of at least 10MW and infrastructure for bulk supply as listed activities. This definition was clear in terms of generation but was open to interpretation in terms of the definition of the term “Bulk Supply”. The term “upgrading” was previously defined as the expansion beyond its existing size, volume or capacity of an existing facility, installation or other activity, but did not include regular or routine maintenance and the replacement of inefficient or old plant, where such did not have an increased detrimental effect on the environment.

The current regulations by contrast clearly distinguish between activities that have either a potentially low or a potentially high risk of impact on the environment due to their inherent nature. Activities that have been identified as having a relatively low impact on the environment are categorised in the schedule of Regulation 386 and are subject to a Basic Assessment process for environmental authorisation. Activities that have been identified as having a relatively high impact on the environment are categorised in the schedule of Regulation 387 and are subject to a comprehensive environmental assessment process which includes scoping and an EIA process for environmental authorisation. The listed and specified activities relating to the construction of infrastructure for electricity is provided in detail in paragraph 4 of this paper.

The following activities that are directly related to electricity require a basic assessment process to be followed in order to obtain authorisation:

- The construction of facilities or infrastructure including associated structures or infrastructure, for the generation of electricity where the output is more than 10MW but less than 20MW;
- The construction of facilities or infrastructure, including associated structures or infrastructure, for the transmission and distribution of electricity above ground with a capacity of more than 33kV and less than 120kV.

The following activities that are directly related to electricity require a comprehensive and thorough environmental assessment process, including a scoping and EIA, to be adopted in order to obtain authorisation:

- The construction of facilities or infrastructure including associated structures or infrastructure, for the generation of electricity where
 - the output is 20MW or more; or
 - the elements of the facility cover a combined area in excess of 1 hectare.
- The construction of facilities or infrastructure, including associated structures or infrastructure, for the transmission and distribution of above ground electricity with a capacity of 120kV or more.

3.2 Interpretation

Electrical engineers have a tendency to be pedantic and would perhaps prefer more detailed and descriptive definitions. The following interpretation of the foregoing definitions are perhaps in order:

(a) Power lines

The definition in terms of power lines is well defined except that the term “capacity” should be understood as “voltage level”. Power lines are listed as activity 1(l) in the schedule of the regulations.

No authorisation is required for the construction of 11kV, 22kV or 33kV power lines unless they cross a wetland or other environmentally sensitive area.

In terms of Regulation 386, a Basic Assessment process leading to authorisation is required for the construction of 44kV, 66kV and 88kV power lines.

In terms of Regulation 387, a Scoping/EIA process leading to authorisation is required for the construction of 132kV, 275kV, 400kV and 765kV power lines.

The foregoing criteria apply to the voltage level of the design of the power line irrespective of the actual voltage level at which the power line may be operated. There are instances where a power line will initially be operated at a lower voltage until certain infrastructure is provided. The fact that a 132kV power line will perhaps initially be operated at 33kV does not exempt it from a Scoping/EIA authorisation prior to construction.

The regulations do not distinguish between distribution power lines within a city or town; and transmission lines that interlink power stations with main transmission stations (MTS) and the in-feed stations at the outskirts of a city or town. The voltage levels of distribution systems within a city or town in South Africa are typically confined to 66kV, 88kV and 132kV although 275kV distribution systems do exist.

The voltage levels of transmission systems in South Africa are restricted to 132kV, 275kV, 400kV and 765kV. The standard transmission voltage levels for power lines are included in Regulation 387 and it can therefore be interpreted that a comprehensive assessment process (scoping & EIA) is required for all transmission lines. This makes sense as transmission lines are characterised by their relatively long length and in many instances their route crosses undisturbed environmental tracts of land.

The environmental regulations do not prescribe any mandatory servitude width for power lines and the widths as provided in the relevant NRS specifications is generally accepted as best practice.

(b) Substations

The criteria in terms of substations is perhaps not as well defined in the regulations as that of power lines. The listed activities emphasises generation which to an electrical engineer relates to the production of electrical energy at a power station. Electricity is created at a power station and is distributed at a substation where in most cases its voltage level is transformed. The description of the activity states: *“The construction of facilities or infrastructure, including associated structures or infrastructure for the generation of electricity.”* The term “construction” in terms of the regulations means the building, erection or expansion of a facility, structure or infrastructure that is necessary for the undertaking of an activity, but excludes any modification, alteration or upgrading of such facility, structure or infrastructure that does not result in a change to the nature of the activity being undertaken or an increase in the production, storage or transportation capacity of that facility, structure or infrastructure. The terms “associated structures or infrastructure” in terms of the regulations means any building or infrastructure that is necessary for the functioning of a facility or activity or that is used for an ancillary service or use from the facility. A substation can be interpreted as being an associated infrastructure or an ancillary service or use from a power station (generation).

Power lines are normally always connected to a substation that transforms the voltage level from a primary voltage level to a secondary voltage level. The fact that no authorisation is required for power lines with a voltage level of 33kV and less, may imply that substations with a voltage level not exceeding 33kV should also be exempt from an environmental authorisation, providing that they are not proposed on environmentally sensitive areas.

A safe interpretation of Clause 1 of the Schedule of Regulations 386 and 387 is to replace the terms “generation of electricity” with “provision of electricity”. Substations with an installed transformer capacity of 20MVA or more, or a footprint area in excess of 1 hectare are subject to a Scoping/EIA process for environmental authorisation, while substations with an installed transformer capacity of less than 20MVA are subject to a Basic Assessment evaluation.

(c) Power Stations

Power stations are clearly defined as the first listed activity, activity 1(a) in the schedule of the regulations. Provision is also made for nuclear reactors.

(d) Underground cables

The regulations exclude underground cable installations, irrespective of the voltage level, as they refer only to the distribution of electricity above ground. Authorisations in terms of cable installations are not required unless the cables are to be laid

through an environmentally sensitive area such as a wetland. In such instances the authority will typically request confirmation that there are no alternate supply options, even if such supply options need to be negotiated and obtained from an adjacent licensed electricity supply authority.

3.3 Application

The starting point in obtaining the environmental authorisation for an “activity” such as a substation or a power line is the completion of an application. The application is made using an official application form which is obtainable from the relevant environmental authority. Documentation in support of an application is largely dependant on the assessment procedure that is defined for the specific activity, and includes a report. All applications for environmental authorisation must be supported by an assessment. The regulations provide for two types of assessment procedures, ie. the basic assessment process and the scoping and EIA process. The purpose of a basic assessment is to provide a mechanism for the complete but concise assessment of activities. A scoping and environmental impact assessment process is reserved for activities which have the potential to result in significant impacts which are complex to assess. Scoping and environmental impact assessment accordingly provides a mechanism for the comprehensive assessment of activities that are likely to have more significant environmental impacts.

The application is normally prepared by an environmental assessment practitioner “EAP” who is appointed by the electricity utility to manage the application for the environmental authorisation of the works. The EAP must determine which of the two procedures is applicable for the application. It is advisable to discuss the type of procedure with the authority, especially in the case of substations.

The relevant environmental authority is hereafter obliged to acknowledge receipt of the application or reject the application if it is found not to be in order, in writing within 14 days.

If the applicant intends undertaking more than one activity of the same type (i.e. 132/11kV substation) at different locations in the same province, separate applications in respect of the different locations must be submitted. The competent authority may however, at the written request of the applicant, grant permission for the submission of a single application in respect of all the activities.

3.4 EAP

An EAP is a person who manages an application for environmental authorisation on behalf of the applicant. The electricity utility must ensure that the EAP to be appointed complies with regulations 18(a) and (b) and must provide the EAP with access to all information at its disposal regarding the application, whether or not such information is favourable to the electricity utility.

The EAP appointed must be:

- Independent
- Possess the necessary expertise
- Perform the work in an objective manner
- Comply with the Act and Registration
- Disclose information that may influence the decision

Apart from being competent and independent, the EAP must also undertake the work objectively – even if this results in findings that are unfavourable to the utility. In view of this, the EAP must disclose all information that has the potential to influence a decision for the authorisation of the application. The EAP is also responsible for ensuring that a public participation process is undertaken in accordance with the requirements of the regulations.

The utility will need to provide the EAP with a detailed scope of the work involved as well as a detailed description of the works. This aspect should not be under-estimated and if the utility has limited personnel resources it may be advisable to appoint an electrical engineer to assist the EAP with the application.

4. LISTED AND SPECIFIED ACTIVITIES

4.1 Schedules

The two Regulations 386 and 387 of 2006 each contain a schedule. Each of the schedules lists the various listed activities as categorised according to the applicable assessment procedure and defines the activity number, description and identification of the competent authority per activity. The scope of the relevant listed activities pertaining to electricity are collectively summarised in paragraph 4.3.

The schedule of Regulation 386 lists the activities identified in terms of the Act, which may not commence without environmental authorisation in respect of which the investigation, assessment and communication of potential impact of activities must follow the procedure described in Regulations 22 to 26 for a basic assessment.

The schedule of Regulation 387 lists the activities identified in terms of the Act, which may not commence without environmental authorisation in respect of which the investigation, assessment and communication of potential impact of activities must follow the procedure described in Regulations 27 to 36 for a scoping and EIA.

4.2 Definitions applicable to Regulations

- 4.2.1 **“associated structures or infrastructure”** means any building or infrastructure that is necessary for the functioning of a facility or activity or that is used for an ancillary service or use from the facility;
- 4.2.2 **“construction”** means the building, erection or expansion of a facility, structure or infrastructure that is necessary for the undertaking of an activity, but excludes any modification, alteration or upgrading of such facility, structure or infrastructure that does not result in a change to the nature of the activity being undertaken or an increase in the production, storage or transportation capacity of that facility, structure or infrastructure;
- 4.2.3 **“expansion”** means the modification, extension or alteration of a facility, structure or infrastructure at which an activity takes place in such a manner that the production, treatment, storage or capacity of the facility is increased;
- 4.2.4 **“floodplain”** means a discernable flat landscape feature next to a river or stream that was created by weathering and sedimentation over time;
- 4.2.5 **“phased development”** means an activity that is developed in phases over time on the same or adjacent properties to create a single or linked entity through interconnected

internal vehicular or pedestrian circulation, sharing of infrastructure, or the continuum of design, style or concept by the same proponent of his or her successors.

4.2.6 **“the Act”** means the National Environmental Management Act, 1998 (Act No. 107 of 1998); and

4.2.7 **“the Regulations”** means the Environmental Impact Assessment Regulations, 2006.

4.2.8 **“the Schedule”** means activities identified in terms of section 24(2)(a) and (d) of the act, which may not commence without environmental authorisation from the competent authority and in respect of which the investigation, assessment and communication of potential impact of activities must follow the procedure as described in regulations 22 to 26 of the environmental impact assessment regulations, 2006, promulgated in terms of section 24(5) of the act-

4.3 Relevant Listed Activities

(a) **Generation of electricity** {Listed Activity 1(a)}

The construction of facilities or infrastructure including associated structures or infrastructure for the generation of electricity where the electricity output exceeds 10MW or where the elements of the facility covers a combined area in excess of one hectare.

(b) **Transmission & Distribution of electricity above ground** {Listed Activity 1(l)}

The construction of facilities or infrastructure including associated structures or infrastructure, for the transmission and distribution of electricity above ground with a capacity of more than 33kV.

(c) **Activities in the 1:10 Flood Line** {Listed Activity 1(m)}

The construction of facilities or infrastructure including associated structures or infrastructure for any purpose in the one in ten year flood line of a river or stream, or within 32 metres from the bank of a river or stream where the flood line is unknown, excluding purposes associated with existing residential use, but including:-

- (i) canals;
- (ii) channels
- (iii) bridges
- (iv) dams; and
- (v) weirs

(d) **Activities requiring Dredging** {Listed Activity 4}

The construction of facilities or infrastructure including associated structures or infrastructure for the dredging, excavation infilling, removal or moving of soil, sand or rock exceeding 5 cubic metres from a river, tidal lagoon, tidal river, lake, in-stream dam, floodplain or wetland.

(e) **Masts** {Listed Activity 14}

The construction of facilities or infrastructure including associated structures or infrastructure for the construction of mast of any material or type and of any height, including those used for telecommunication broadcasting and radio transmission, but excluding-

- (i) mast of 15 metres and lower exclusively used
 - (a) by radio amateurs; or
 - (b) for lighting purposes
 - (ii) flag poles; and
 - (iii) lightning conductor poles
- (f) **De-commissioning and Re-commissioning** {Listed Activities 23 & 24}

The construction of facilities or infrastructure including associated structures or infrastructure for the de-commissioning or re-commissioning of existing facilities or infrastructure, other than facilities or infrastructure that commenced under and environmental authorisation issued in terms of the Environmental Impact Assessment Regulations, 2006 made under section 24(5) of the Act and published in Government Notice No. R. 385 of 2006 for-

- (a) electricity generation;
- (b) nuclear reactors and storage of nuclear fuel;
- (c) industrial activities where the facility or the land on which it is located is contaminated or has the potential to be contaminated by any material which may place a restriction on the potential to re-use the site for a different purpose;
- (d) the disposal of waste;
- (e) the treatment of effluent, wastewater and sewage with an annual throughput capacity of 15 000 cubic meters or more;
- (f) the recycling, handling, temporary storage or treatment of general waste with a daily throughput capacity of 30 cubic metres or more; or
- (g) the recycling, handling, temporary storage or treatment of hazardous waste.

5. AUTHORISATION PROCESS

5.1 Basic Assessment

The basic assessment process includes all the aspects required by NEMA but in a way that facilitates a concise process. This is mainly achieved by indicating what information the competent authority requires in the Regulations, thereby limiting the number of interactions between the EAP and the competent authority. This means that the competent authority is presented with all the appropriate documentation at the time it receives the application since the EAP would already have conducted the public participation process and compiled a basic assessment report containing the information specified in the Regulations. The EAP must timeously notify the competent authority of the intention to submit an application because the public participation process and assessment will take place prior to the submission of the application.

If the basic assessment report is accepted, the competent authority will consider the contents of the basic assessment report, including any attachments, and make a decision to:

- Grant authorisation in respect of all or part of the application;
- Refuse authorisation in respect of all or part of the application;
- Request further information or investigation;
- Refer the application to a scoping process were substantial additional investigations or assessments are required in order to make a decision.

A request for further investigation can include a request for further public participation, a specialised study, a specialised process or consideration of alternatives. In such a case a revised basic assessment report or supplementary document must be compiled and submitted to the competent authority as well as been made available to interested and affected parties.

5.2 Scoping / EIA

The scoping and EIA process involves a more complex and intensive assessment of the potential impacts of an activity. The process takes place in three distinct phases, namely submission of an application form, scoping and the EIA.

Where an application for environmental authorisation needs to be supported by a scoping and an EIA process, an application form must be completed and submitted to the competent authority before that scoping may commence. The applicant is entitled to a pre-scoping consultation with the competent authority before conducting the scoping.

The objective of scoping is to establish the "Scope" of the EIA that will be conducted in respect of the activity for which authorisation is applied for, such as an 132kV power line. The focus during scoping is to identify and determine:

- issues;
- potential impacts; and
- potential alternatives.

Public participation is a key element of scoping. The scoping process culminates in the compilation of a scoping report. The minimum requirements of a scoping report are set out in the regulations and include a plan of study for EIA.

After receiving a scoping report, the competent authority will consider the contents and make a decision to:

- * request amendments to the report;
- * request further alternatives to be considered;
- * reject the scoping report or plan of study; or
- * accept the scoping report.

When the competent authority accepts a scoping report and a plan of study for EIA, the EAP must proceed with the EIA. The purpose of the EIA is to:

- address issues that have been raised during the scoping;
- assess alternatives to the proposed activity in a comparative manner;
- assess all identified impacts and determine the significance of each impact; and
- formulate mitigation measures.

Public participation is an essential component of the EIA process. During the EIA process, public participation is conducted in accordance with the plan of study for EIA as opposed to the minimum requirements set out in the Regulations. After the different aspects of the assessment have been undertaken, including any specialised studies and processes, an EIA report is compiled, which must contain at least the information list in the Regulations, including a draft environmental management plan.

The review and consideration of the EIA report occurs in two phases. In the first phase, the competent authority, after receipt of the EIA report, will take a decision to:

- accept the report;
- Request amendments to the report;
- Refer the report for specialist review; or
- Reject the EIA report.

The second phase occurs after the competent authority has accepted an EIA report, or after receipt of findings of a specialist reviewer. During this phase, the competent authority will take a decision to:

- grant all or part of the application; or
- refuse all or part of the application

6. ENVIRONMENTAL LEGAL – COMPLIANCE

6.1 General

The activities and operations of any electricity utility, whether it be Eskom, a municipal electricity department or any one of the proposed Regional Electricity Distributors (RED's) have inherent potential negative effects on the environment.

These potential negative effects inevitably create enviro-legal risks to the electricity utility from the date of its establishment.

Futhermore, for an environmental legal risk to arise, there need not necessary be a formal or legal relationship between the electricity utility and the effected party as the provisions of Section 24 of the Constitution provides that everyone has the right to an environment that is not harmful to one's health or well being.

If unmanaged, an enviro-legal risk represents a threat that may prevent an electricity utility from achieving its service delivery objectives and responsibilities, which in turn has a bearing on maintaining its licence with NERSA. In order for an electricity utility to manage its environmental legal risks it is essential to firstly identify all existing and potential risks by means of a legal compliance audit.

The damage which an unmanaged environmental related risk can inflict is likely to be wide ranging. It will include not only potential damages claims (financial loss, clean-up and rehabilitation costs and heavy fines) but also several hidden costs such as reputational damage, unwanted media attention etc.

6.2 Enviromental legal compliance audit

An enviro-legal compliance audit is an effective means for an electricity utility to identify what environmental related legal risks it runs, that may prevent it from achieving its service delivery objectives, and then to consider how it can manage them thereby reducing the likelihood that they will have a serious impact on its operations.

A legal risk is probably best considered as an operational risk and it is therefore prudent for a utility to establish with whom it has legal relationships, ie. who might invoke their rights against the utility or against whom the utility might need to exercise its rights.

An Environmental Audit (EA) should as a general rule concentrate on the following two elements:

- Compliance of existing facilities and operations with relevant environmental (including Occupational Health and Safety) laws, regulations and specific institutional requirements; and

- The nature and extent of significant adverse environmental impacts, including contamination to soils, ground water, and structures as a result of past activities at the existing facilities.

An environmental audit is normally undertaken by an independent consultant having a broad and extensive industrial experience in the relevant areas of the environmental and Occupational Health and Safety legislation.

7. ENVIRONMENTAL MANAGEMENT FRAMEWORK

Chapter 8 of the regulations provides that the Minister or MEC, may initiate an environmental management framework for an area. EMF's that are adopted by the Minister or MEC must be taken into account in the consideration of applications for environmental authorisation in or affecting the areas to which the EMF applies. In practice it is foreseen that EMFs will mostly be joint initiatives between provincial departments and local authorities that act within the mandates of the MECs. It is also likely that the formation of EMFs will in most cases be contracted out to specialists.

EMFs will provide applicants with an early indication of the areas in which it would be potentially appropriate to undertake an activity. Co-operative government is facilitated through the identification of different regulatory responsibilities and recommending mechanisms for addressing the needs of the relevant authorities.

8. CONCLUSIONS

- 8.1 Electricity utilities are bound by the relevant environmental legislation referred to in this paper. In terms of the King Code on Corporate Governance the directors of the utility are ultimately responsible and accountable for the legal compliance of the utility in terms of environmental matters.
- 8.2 Many of the municipal electricity departments as well as Eskom have deferred the establishment and expansion of their transmission and distribution networks. The winter loads imposed on an alarming number of municipal substations have well exceeded the firm supply capacity of these substations. A significant number of power lines have likewise reached their safe supply capacity limits.
- 8.3 In April 2006 the Minister of Environment Affairs and Tourism passed regulations in terms of the National Environmental Management Act (NEMA) Act 107 of 1998. These regulations replaced the previous regulations in terms of the Environmental Conservation Act on the 1st July 2006.
- 8.4 In terms of the new regulations environmental authorisation is required for the construction of all new power lines with a designed voltage level exceeding 33kV. Authorisation is furthermore required for any increase in the load transfer capacity of any existing power line with a designed voltage level exceeding 33kV.
- 8.5 In terms of the new regulations environmental authorisation is required for the construction of all new substations with a primary or secondary voltage level exceeding 33kV. Authorisation is furthermore required for the reconfiguration or increase in the

installed transformer capacity of any existing substation with a primary or secondary voltage level exceeding 33kV.

- 8.6 Authorisation is not required for the installation of underground electric cables unless these cables are to be installed in an environmentally sensitive area such as a wetland.
- 8.7 An environmental legal compliance audit is an effective means for an electricity utility to identify what environmental related legal risks it runs, that may prevent it from achieving its service delivery objectives, and then to consider how it can manage them thereby reducing the likelihood that they will have a serious impact on its operations.

9. WAY FORWARD

- 9.1 Based on the foregoing the following activities are recommended for any existing or newly established utility:
 - 9.1.1 Appoint an environmental consultant to perform an environmental legal compliance audit of all the utility's infrastructure, in order to identify any risks that may have arisen due to environmental non-compliance.
 - 9.1.2 Manage any risks that have been identified in a professional manner, to minimise the impact on the operations of the utility.
 - 9.1.3 Identify, by means of a desk-top study, which substations will require reconfiguration and expansion in order for the utility to continue to supply the load growth, in a safe and reliable manner. Define the scope of work for each of these substations and appoint an environmental consultant to make the necessary application to the appropriate authority for environmental authorisation of the envisaged works.
 - 9.1.4 Identify the need for all future substations, on an ongoing basis, by means of a master plan study, bearing in mind that a concept master plan study will suffice for this purpose. Elaborate and sophisticated master plan studies have failed many utility's in the past. Identify at least three alternative substation positions. Define the scope of work for each of these substations and appoint an environmental consultant to make the necessary application to the appropriate authority for environmental authorisation of the envisaged works.
 - 9.1.5 Identify which lines will require to be upgraded or replaced with new lines having an increased load transfer capacity. Determine the need for additional power lines that will be required within the next 5 years. Establish at least three alternative line routes and define the scope of work for each line and appoint an environmental consultant to make the necessary applications to the appropriate authority for environmental authorisation of the planned lines.
 - 9.1.6 Present the proposed projects to the environmental representatives of the relevant municipality to obtain their support in the authorisation process.
 - 9.1.7 Convene a meeting with the relevant authority to present the integrated application.
 - 9.1.8 Ensure that the utility has a thorough knowledge and understanding of the relevant regulations.
 - 9.1.9 Ensure that effective and practical environmental procedures and practices are in place to protect the utility's assets and reputation.

