

TERMS OF REFERENCE FOR SPECIALIST STUDIES

IMPACT ASSESSMENT METHODOLOGY

All the specialist studies would be carried out and reported based on the following methodology. The identified impacts would be assessed by considering seven rating scales as listed below. All specialist studies proposed or listed for the proposed power line would consider these ratings when assessing potential impacts. These ratings include:

- ❖ Extent;
- ❖ Duration;
- ❖ Intensity;
- ❖ Significance;
- ❖ Status of impact;
- ❖ Probability; and
- ❖ Degree of confidence.

In assigning significance ratings to potential impacts before and after mitigation specialists would be instructed to follow the approach presented below:

The core criteria for determining significance ratings are “extent”, “duration” and “intensity”. The preliminary significance ratings for combinations of these three criteria are given below.

The status of an impact is used to describe whether the impact will have a negative, positive or zero effect on the affected / receiving environment. An impact may therefore be negative, positive (or referred to as a benefit) or neutral.

Describe the impact in terms of the probability of the impact occurring and the degree of confidence in the impact predictions, based on the availability of information and specialist knowledge.

Additional criteria to be considered, which could “increase” the significance rating if deemed justified by the specialist, with motivation, are the following:

- ❖ Permanent / irreversible impacts (as distinct from long-term, reversible impacts);
- ❖ Potentially substantial cumulative effects; and

- ❖ High level of risk or uncertainty, with potentially substantial negative consequences.

Additional criteria to be considered, which could “decrease” the significance rating if deemed justified by the specialist, with motivation, are the following:

- ❖ Improbable impact, where confidence level in prediction is high.

When assigning significance ratings to impacts *after mitigation*, the specialist needs to:

- ❖ First, consider probable changes in intensity, extent and duration of the impact after mitigation, assuming effective implementation of mitigation measures, leading to a revised significance rating; and
- ❖ Then moderate the significance rating after taking into account the likelihood of proposed mitigation measures being effectively implemented. Consider:
 - Any potentially significant risks or uncertainties associated with the effectiveness of mitigation measures;
 - The technical and financial ability of the proponent to implement the measure; and
 - The commitment of the proponent to implementing the measure, or guarantee over time that the measures would be implemented.

The significance ratings are based on largely objective criteria and inform decision-making at a project level as opposed to a local community level. In some instances, therefore, whilst the significance rating of potential impacts might be “low” or “very low”, the importance of these impacts to local communities or individuals might be extremely high. The importance which I&APs attach to impacts will be taken into consideration, and recommendations will be made as to ways of avoiding or minimising these negative impacts through project design, selection of appropriate alternatives and / or management.

The relationship between the significance ratings after mitigation and decision-making can be broadly defined as follows:

Significance rating	Effect on decision-making
Very Low; Low	Will not have an influence on the decision to proceed with the proposed project, provided that recommended measures to mitigate negative impacts are implemented.
Medium	Should influence the decision to proceed with the proposed project, provided that recommended measures to mitigate negative impacts are implemented.

High; Very High	Would strongly influence the decision to proceed with the proposed project.
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EXTENT

“Extent” defines the physical extent or spatial scale of the impact.

Rating	Description
Local	Extending only as far as the activity, limited to the site and its immediate surroundings. Specialist studies will specify extent.
Regional	Gauteng Province
National	South Africa
International	

DURATION

Rating	Description
Short term	0-5 years
Medium term	5-15 years
Long term	Where the impact will cease after the operational life of the activity, either because of natural processes or by human intervention.
Permanent	Where mitigation either by natural processes or by human intervention will not occur in such a way or in such time span that the impact can be considered transient.

INTENSITY

“Intensity” establishes whether the impact would be destructive or benign.

Rating	Description
Low	Where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected.
Medium	Where the affected environment is altered, but natural, cultural and social functions

	and processes continue, albeit in a modified way.
High	Where natural, cultural and social functions or processes are altered to the extent that it will temporarily or permanently cease.

SIGNIFICANCE

“Significance” attempts to evaluate the importance of a particular impact, and in doing so incorporates the above three scales (i.e. extent, duration and intensity).

Rating	Description
Very High	Impacts could be EITHER: of <i>high intensity</i> at a <i>regional level</i> and endure in the <i>long term</i> ; OR of <i>high intensity</i> at a <i>national level</i> in the <i>medium term</i> ; OR of <i>medium intensity</i> at a <i>national level</i> in the <i>long term</i> .
High	Impacts could be EITHER: of <i>high intensity</i> at a <i>regional level</i> and endure in the <i>medium term</i> ; OR of <i>high intensity</i> at a <i>national level</i> in the <i>short term</i> ; OR of <i>medium intensity</i> at a <i>national level</i> in the <i>medium term</i> ; OR of <i>low intensity</i> at a <i>national level</i> in the <i>long term</i> ; OR of <i>high intensity</i> at a <i>local level</i> in the <i>long term</i> ; OR of <i>medium intensity</i> at a <i>regional level</i> in the <i>long term</i> .
Medium	Impacts could be EITHER: of <i>high intensity</i> at a <i>local level</i> and endure in the <i>medium term</i> ; OR of <i>medium intensity</i> at a <i>regional level</i> in the <i>medium term</i> ; OR of <i>high intensity</i> at a <i>regional level</i> in the <i>short term</i> ; OR of <i>medium intensity</i> at a <i>national level</i>

	<p>in the <i>short term</i>;</p> <p>OR of <i>medium intensity</i> at a <i>local level</i> in the <i>long term</i>;</p> <p>OR of <i>low intensity</i> at a <i>national level</i> in the <i>medium term</i>;</p> <p>OR of <i>low intensity</i> at a <i>regional level</i> in the <i>long term</i>.</p>
Low	<p>Impacts could be EITHER</p> <p>of <i>low intensity</i> at a <i>regional level</i> and endure in the <i>medium term</i>;</p> <p>OR of <i>low intensity</i> at a <i>national level</i> in the <i>short term</i>;</p> <p>OR of <i>high intensity</i> at a <i>local level</i> and endure in the <i>short term</i>;</p> <p>OR of <i>medium intensity</i> at a <i>regional level</i> in the <i>short term</i>;</p> <p>OR of <i>low intensity</i> at a <i>local level</i> in the <i>long term</i>;</p> <p>OR of medium intensity at a local level and endure in the medium term.</p>
Very low	<p>Impacts could be EITHER</p> <p>of <i>low intensity</i> at a <i>local level</i> and endure in the <i>medium term</i>;</p> <p>OR of <i>low intensity</i> at a <i>regional level</i> and endure in the <i>short term</i>;</p> <p>OR of low to medium intensity at a local level and endure in the short term.</p>
Not applicable	<p>Impacts with:</p> <p>Zero intensity with any combination of extent and duration.</p>
Unknown	<p>In certain cases it may not be possible to determine the significance of an impact.</p>

STATUS OF IMPACT

The status of an impact is used to describe whether the impact would have a negative, positive or zero effect on the affected environment. An impact may therefore be negative, positive (or referred to as a benefit) or neutral.

PROBABILITY

“Probability” describes the likelihood of the impact occurring.

Rating	Description
Improbable	Where the possibility of the impact to materialise is very low either because of design or historic experience.
Probable	Where there is a distinct possibility that the impact will occur.
Highly probable	Where it is most likely that the impact will occur.
Definite	Where the impact will occur regardless of any prevention measures.

DEGREE OF CONFIDENCE

This indicates the degree of confidence in the impact predictions, based on the availability of information and specialist knowledge.

Rating	Description
High	Greater than 70% sure of impact prediction.
Medium	Between 35% and 70% sure of impact prediction.
Low	Less than 35% sure of impact prediction.

All the specialist activities should, as a minimum,

- ❖ Describe the baseline conditions that exists in the study area
- ❖ Indicate the reliability of information utilized in the assessment of impacts as well as constraints to which the assessment is subject (e.g. any areas of insufficient information or uncertainty)
- ❖ Identify feasible ways in which the impacts could be mitigated and benefits enhanced giving an indication of the likely effectiveness of such mitigation and how these could be implemented in the construction and management of the proposed power lines.