

## **3 EIA PROCESS AND METHODOLOGY**

### **3.1 Introduction**

The Environmental Impact Assessment (EIA) and Waste Licence Application process for the proposed Tutuka Continuous Ashing project is comprised of three main phases (**Figure 3.1**), namely the Application phase, Scoping phase and Impact Assessment phase (which will include the Waste License Report and the Conceptual Designs). This EIA report documents the tasks that were undertaken as part of the Impact Assessment phase of the EIA. These tasks include the public participation process and the documentation of the issues which were identified as a result of these activities. This chapter summarises the work undertaken during Scoping phase, work undertaken during EIA phase, and provides a conclusion.

### **3.2 Scoping Phase**

#### **3.2.1 Introduction**

The Scoping Phase of an EIA serves to define the scope of the detailed assessment of the potential impacts of a proposed project. The Environmental Scoping Phase was undertaken in accordance with the requirements of sections 24 and 24D of the National Environmental Management Act (NEMA) (Act 107 of 1998), as amended, and as read with Government Notices R 543 (Regulations 26-30), 544, 545 and 546 of the NEMA and GN 921 of the National Environmental Management Waste Act (NEMWA) (Act 59 of 2008).

Lidwala undertook the Scoping Phase of the project between **June 2012** and **January 2013**. The public review of the Draft Scoping Report ran for a period of **30 calendar days** from **8 November 2012 to 7 December 2012**. The responses and comments from Interested and Affected Parties (I&Aps), on the draft Scoping Report were captured in the Final Environmental Scoping Report. The Final Environmental Scoping Report was submitted to DEA for review and decision-making on **14 December 2012**.

### **3.3 Authority Consultation**

#### **3.3.1 Consultation with Authorities**

The relevant key commenting authorities required to review the proposed project and provide comment to enable the Competent Authority to make a decision were consulted from the outset of this study, and have been engaged throughout the project process. The Final Environmental Scoping Report was accepted in writing on **19 March 2013**. The

letter of acceptance is included in **Appendix A**. The competent authority for this project is the DEA. The DWA and MDEDET are noted as key commenting authorities.

The Final report will presented to DEA for a decision.

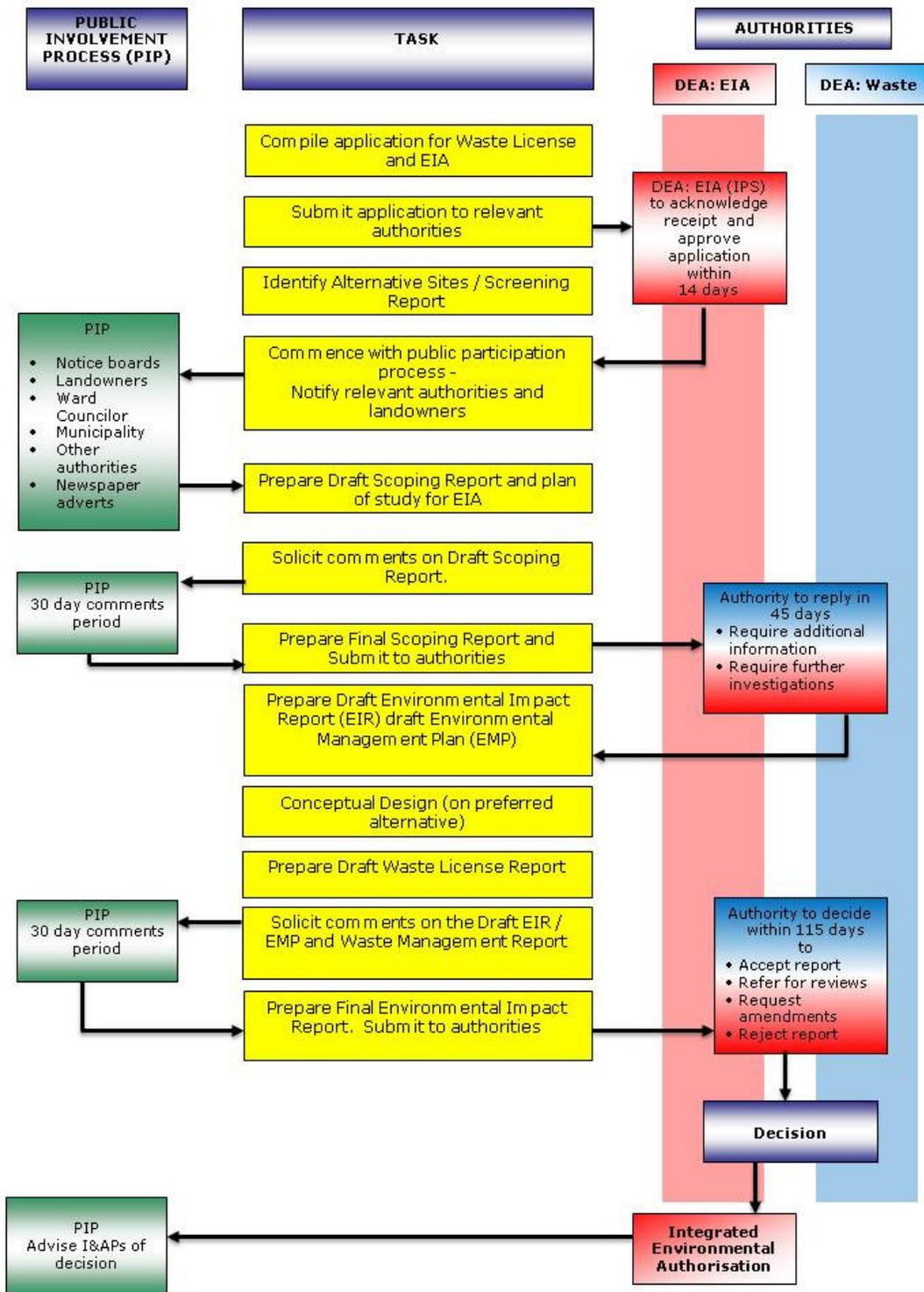


Figure 3.1: EIA process for an integrated application.

### **3.3.2 Public Participation**

A comprehensive Public Participation Process (PPP) was implemented as part of the Scoping Phase. The Project and the environmental assessment process were widely announced with an invitation to the general public to register as I&APs and to actively participate in the PPP. The main activities undertaken as part of the PPP in the Scoping Phase were as follows:

- Print media advertisements in English, Afrikaans, Zulu that were placed in the "The Highveld Tribune" and "Cosmos News" newspapers to announce the EIA Process;
- Key Stakeholders were contacted telephonically and informed of the Project and the EIA process;
- A Background Information Document (BID) and comment sheet were produced in English, Afrikaans and Zulu detailing the proposed Project and explaining the EIA process. The BID was emailed and posted to I&APs and uploaded on the Lidwala website;
- Copies of the BID were made available to I&APs as and when requested. Public documents were also made available in public libraries and other local public venues, including:
  - Standerton Public Library
  - Tutuka Power Station
  - Lidwala and Eskom Website
- General project notices were erected at the following locations:
  - Tutuka Power Station: Reception
  - Tutuka Power Station Ash Disposal – Entrance
  - Die Plaas Slaghuis
  - Standerton Public Library
- The official site notices were erected as per the NEMA EIA Regulations at the Tutuka power station and distributed to neighbouring I&AP's within a 100m radius from the border of Eskom property.
- Public open day and meeting was held at the Hoerskool Standerton Hall, Standerton on **22 November 2012**.
- Two Focus groups were held on the **22 November 2012** with the landowners and the Local Municipality
- Key Stakeholder Workshop was held on the **21 November 2012** at Ermelo

A **30 calendar day** commenting period (**8 November 2012 to 7 December 2012**) was allowed for I&APs to comment on the Draft Scoping Report (DSR). All comments received were captured and responded to in the Comment and Response Report (**Appendix G**).

### **3.3.3 Potential Environmental Impacts Identified during Scoping**

Environmental impacts identified during the scoping phase, which were considered to require further assessment, are listed below:

**Table 3.1.** List of environmental and socio-economic issues identified during Scoping

<b>Environmental Issues Identified</b>
<p><b>Geology</b></p> <ul style="list-style-type: none"> <li>• Impacts related to the construction-related earthworks</li> <li>• Impacts related to the pollution in case of spillage/leakage of hydrocarbon and other hazardous material from storage facilities</li> </ul>
<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>• Change to drainage patterns due to construction-related earthworks and additional stormwater drainage patterns.</li> <li>• Mitigation measures are required to be identified.</li> </ul>
<p><b>Soil</b></p> <ul style="list-style-type: none"> <li>• Pollution of soil due to handling, use and storage of hazardous substances during construction and operation.</li> <li>• The loss of available top soil.</li> </ul>
<p><b>Land Capability</b></p> <ul style="list-style-type: none"> <li>• Key variables that determine the land capability of the study area such as soil fertility reduced and disturbed due to the potential activities related to the ash disposal facility.</li> <li>• The loss of viable agricultural land.</li> <li>• Mitigation measures are required to be identified.</li> </ul>
<p><b>Avifauna</b></p> <p>Ash disposal facility</p> <ul style="list-style-type: none"> <li>• Destruction of habitat and disturbance of birds</li> </ul> <p>Associated Infrastructure</p> <ul style="list-style-type: none"> <li>• Electrocutions</li> <li>• Collisions</li> <li>• Habitat destruction</li> </ul>

<ul style="list-style-type: none"> <li>• Disturbance</li> </ul>
<p><b>Biodiversity</b></p> <p>Ten impacts were identified that are of relevance to any development in a natural environment, namely:</p> <ul style="list-style-type: none"> <li>• Direct impacts on threatened flora species;</li> <li>• Direct impacts on protected flora species;</li> <li>• Direct impacts on threatened faunal taxa;</li> <li>• Direct impacts on common fauna species/ faunal assemblages (including migration patterns, corridors, etc.);</li> <li>• Human - Animal conflicts;</li> <li>• Loss or degradation of natural vegetation/ pristine habitat (including ecosystem functioning);</li> <li>• Loss/ degradation of surrounding habitat;</li> <li>• Impacts on SA's conservation obligations &amp; targets;</li> <li>• Increase in local and regional fragmentation/ isolation of habitat; and</li> <li>• Increase in environmental degradation, pollution (air, soils, surface water)</li> </ul>
<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>• Impacts on surface water quality;</li> <li>• Impacts on hydrology;</li> <li>• Impacts related to erosion and sedimentation;</li> <li>• Impacts on aquatic biota; and</li> <li>• Impacts on aquatic ecosystem services.</li> </ul>
<p><b>Groundwater</b></p> <ul style="list-style-type: none"> <li>• Contamination of ground water due to hydrocarbon spillage and seepage into groundwater reserves, affecting groundwater quality.</li> <li>• Further construction of infrastructure and compaction of the area will further contribute to reduced water infiltration rates to replenish groundwater aquifers.</li> </ul>
<p><b>Noise</b></p> <p>Change in ambient noise levels during both construction and operation</p>
<p><b>Air Quality</b></p> <ul style="list-style-type: none"> <li>• Increase in dust generating activities during construction and operation including exceedances of PM10 concentrations and exceedances of dustfall rates.</li> </ul>
<p><b>Socio-Economic Issue Identified</b></p>
<ul style="list-style-type: none"> <li>• Impact on the current visual landscape.</li> <li>• Impact on sensitive receptors,</li> <li>• identify the potential heritage sites within the study area</li> <li>• identify any impacts (if any) that may occur on these sites as a result of the</li> </ul>

continuous ashing project

- Perceptions and fears associated with the proposed project; and
- Local, site-specific issues.

These potential impacts were further investigated during the EIA phase of the project by means of the following processes and methodology.

### **3.4 Impact Assessment Phase**

#### **3.4.1 Introduction**

The purpose (General) of the Impact Assessment Phase of an EIA is as follows:

- Ensure that the process is open and transparent and involves the Authorities, proponent and stakeholders;
- Address issues that have been raised during the preceding Scoping Phase (**Chapter 8** and **9**);
- Assess alternatives to the proposed activity in a comparative manner (see **Chapter 7**);
- Assess all identified impacts and determine the significance of each impact (see **Chapter 9**);
- Develop an Environmental Impact Assessment Report (EIR);
- Develops a conceptual design for the project;
- Allow for public participation process on this phase; and
- Formulate mitigation measures (see **EMPr – Appendix D**).

Numerous acceptable approaches and methodologies exist by which the above purpose can be achieved. The legislation in South Africa, including the guideline documents published in support thereof, does not provide a specific methodology for the assessment of impacts.

Rather, an assessment framework is provided within which environmental assessment practitioners are expected to structure a project-specific assessment methodology. This assessment framework recognises that there are different methodologies available for assessing the impacts of a development but that the specific methodology selected must provide for the following:

- A clear process for impact identification, prediction and evaluation;
- Specification of impact identification techniques;

- Criteria for evaluating the significance of impacts;
- Design of mitigation measures to address impacts;
- Defining types of impacts (direct, indirect or cumulative); and
- Specification of uncertainties.

### 3.4.2 Specialist Studies

**Table 3.2** provides a list of the Specialists that are involved in this study and their areas of expertise.

**Table 3.2:** List of Specialist Studies

<b>Specialist Study</b>	<b>Organisation Responsible for the Study</b>
Impacts on groundwater	SLR Consulting
Impacts on surface water and aquatic fauna & flora	Ecotone Freshwater Consultants
Impacts on terrestrial fauna & flora	Bathusi Environmental
Impacts on soils & agricultural potential	Agricultural Research Council (ARC)
Impacts on heritage resources	Johnny van Schalkwyk
Impacts on air quality	Airshed Planning Professionals
Impacts due to noise	Francois Malherbe Acoustic Consultants
Impacts on the social environment	Lidwala Consulting Engineers (SA)
Impacts on avifauna	Endangered Wildlife Trust (EWT)
Impacts on bats	Endangered Wildlife Trust (EWT)
Visual impact assessment	MetroGIS
Conceptual Design	Lidwala Consulting Engineers (SA) and Alan Robinson
Geotechnical Studies	Alan Robinson
GIS	Lidwala Consulting Engineers (SA)
Land Survey	Global Geomatics
Ash Classification	Jones & Wagener

### 3.4.3 Public Participation Process

The main objectives of the PPP in the Impact Assessment Phase are to:

- Inform Interested and Affected Parties (IAPs) about the proposed project and the EIA process;
- Establish lines of communication between IAPs and the project team;

- Provide an opportunity to all parties to exchange information and express their views and concerns;
- Obtain contributions of IAPs and ensure that all issues, concerns and queries raised are fully documented; and
- Identify all the significant issues that need to be addressed in the EIA, if warranted.

PPP during the impact assessment phase revolves around the review and findings of the EIA, which are altogether presented in this Draft Environmental Impact Report (DEIR). All I&APs have been notified of the progress to date and availability of the Draft EIR, via mail, e-mail and advertisements in local newspapers (**Appendix E**) as detailed in **Table 6.3** below.

**Table 3.3:** Date on which the adverts were published for the review of the Draft EIR

<b>Newspaper</b>	<b>Publication Date</b>	<b>Language</b>
Highveld Tribune	15 July 2014	English, Afrikaans, Zulu
Cosmos News	16 July 2014	English, Afrikaans

The I&AP register was used to capture all I&AP details and interactions which were updated as and when information was distributed to, or received from I&APs. This ongoing and up-to-date record of communication is an important record-keeping requirement of the EIA legislation and was undertaken for the duration of the Impact Assessment. The full I&AP register is included in **Appendix F**. A comments and response report, documenting all comments and concerns raised by I&APs throughout the process has also been included in **Appendix G**.

A legislated period of **40** consecutive days was allowed for public comment. Reports were made available in the following way:

- The Draft Environmental Impact Assessment Report has been placed for public review and comments at the following two public venues:
  - Standerton Public Library
  - Tutuka Power Station (Main West Gate - Security Reception)
- The document (Tutuka Continuous Ash Disposal Facility Draft EIA Report) was made available to download from the Lidwala website ([www.lidwala.com](http://www.lidwala.com)); and
- Copies of the report on CD were made available on request.

A public meeting was held during this phase (details shown in **Table 3.4**). The meeting was facilitated by key members of the PPP project team. The purpose of the public meeting was to present the findings of the impact assessment where I&APs are given the opportunity to debate and discuss key issues and concerns.

**Table 3.4:** Public Meeting

Province	Area	Venue	Date
Mpumalanga	Thuthukani	Ulwazi Primary School Hall	2 September 2014

All registered Interested and Affected Parties (I&APs) were notified, in writing, of the availability of the draft Environmental Impact Report in the week starting **14 July 2014**. (**Appendix H**).

This Final EIR incorporates public comments received on the Draft EIR and will be made available for public review and submitted to the authorities. All I&APs will receive a letter at the end of the process notifying them of the authority's decision, thanking them for their contributions, and explaining the appeals procedure.

#### **3.4.4 Consultation with Authorities**

The relevant authorities required to review the proposed Project and provide input were consulted from the outset of this study, and have been engaged throughout the project process. The competent authority for this project is DEA. The DWA and MDEDET are noted as key commenting authorities.

Background information regarding the proposed Project was provided to the other relevant authorities, together with a registration and comment form formally requesting their input into the EIA process. The authorities include *inter alia*:

- Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET);
- Department of Water Affairs (DWA);
- Department of Agriculture, Forestry and Fisheries (DAFF)
- Pixley ka Seme Local Municipality;
- Gert Sibande District Municipality;
- South African Heritage Resources Agency (SAHRA) – Head Office and Provincial Office;
- Please refer to **Appendix F** for a comprehensive stakeholder list

### **3.4.5 Impact Assessment Methodology (This Project)**

In accordance with Regulation 31 of Government Notice R.543, promulgated in terms of section 24 of the National Environmental Management Act, 1998 (Act 107 of 1998), Lidwala were required to assess the significance of potential impacts in terms of the following criteria:

- Cumulative impacts;
- Nature of the impact;
- Extent and duration of the impact;
- Probability of the impact occurring;
- The degree to which the impact can be reversed;
- The degree to which the impact may cause irreplaceable loss of resources; and
- The degree to which the impact can be mitigated.

Issues were assessed in terms of the following criteria:

- The **nature**, a description of what causes the effect, what will be affected and how it will be affected;
- The physical **extent**, wherein it is indicated whether:
  - \* 1 - the impact will be limited to the site;
  - \* 2 - the impact will be limited to the local area;
  - \* 3 - the impact will be limited to the region;
  - \* 4 - the impact will be national; or
  - \* 5 - the impact will be international;
- The **duration**, wherein it is indicated whether the lifetime of the impact will be:
  - \* 1 - of a very short duration (0–1 years);
  - \* 2 - of a short duration (2–5 years);
  - \* 3 - medium-term (5–15 years);
  - \* 4 - long term (> 15 years); or
  - \* 5 - permanent;
- The **magnitude of impact on ecological processes**, quantified on a scale from 0–10, where a score is assigned:
  - \* 0 - small and will have no effect on the environment;
  - \* 2 - minor and will not result in an impact on processes;
  - \* 4 - low and will cause a slight impact on processes;
  - \* 6 - moderate and will result in processes continuing but in a modified way;
  - \* 8 - high (processes are altered to the extent that they temporarily cease); or

- \* 10 - very high and results in complete destruction of patterns and permanent cessation of processes;
- The **probability of occurrence**, which describes the likelihood of the impact actually occurring. Probability is estimated on a scale where:
  - \* 1 - very improbable (probably will not happen);
  - \* 2 - improbable (some possibility, but low likelihood);
  - \* 3 - probable (distinct possibility);
  - \* 4 - highly probable (most likely); or
  - \* 5 - definite (impact will occur regardless of any prevention measures);
- the **significance**, which is determined through a synthesis of the characteristics described above (refer formula below) and can be assessed as low, medium or high;
- the **status**, which is described as either positive, negative or neutral;
- the degree to which the impact can be reversed;
- the degree to which the impact may cause irreplaceable loss of resources; and
- the degree to which the impact can be mitigated.

The **significance** is determined by combining the criteria in the following formula:

$$S = (E+D+M)*P; \text{ where}$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance weightings** for each potential impact are as follows:

- **< 30 points:** Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
- **30 - 60 points:** Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- **> 60 points:** High (i.e. where the impact must have an influence on the decision process to develop in the area).

### **3.4.6 Draft Environmental Management Programme**

A Final Environmental Management Programme (EMPr) has been compiled and is attached as **Appendix D**.

The EMPr serves as a document providing the mitigation measures applicable during all phases of the proposed infrastructure development, to ensure safe work procedures and prevent or mitigate environmental impacts. The EMPr contains guidelines, operating procedures and rehabilitation/pollution control requirements which will be binding after approval of the EMPr. It is essential that the EMPr be carefully studied, understood, implemented and adhered to at all time. Expansion or adaptation of this management plan may be required in specific circumstances. The document describes mitigation measures for possible impacts associated with the proposed infrastructure.

### **3.5 Conclusion**

This chapter discussed the various tasks that have been undertaken as part of the EIA phase of the process. The main components include the Public Participation Process and assessment of identified impacts and alternatives that have been undertaken as part of the EIA.

The Draft EIR was made available for public comment. The availability of this report was announced to all registered I&APs via site notices, personalised letters and telephonic notification of key stakeholders. The Draft EIR was distributed to suitable public venues with comment sheets which were collected at the end of the **40 day** comment period. Comments on the Draft EIR were captured and responded to in the updated Issues and Response Report. Thereafter, the Draft EIR was finalised into this Final EIR which was submitted to DEA for their review and decision making. All registered I&APs will be informed by personalised letter of the availability of the Final EIR, and of the Environmental Authorisation and associated conditions of environmental authorisation by personalised letters.