

1 INTRODUCTION

Hendrina Power Station is located near Hendrina in the Mpumalanga Province and falls within the Steve Tshwete Local Municipality (**Figure 1.1**) which falls within the Nkangala District Municipality.

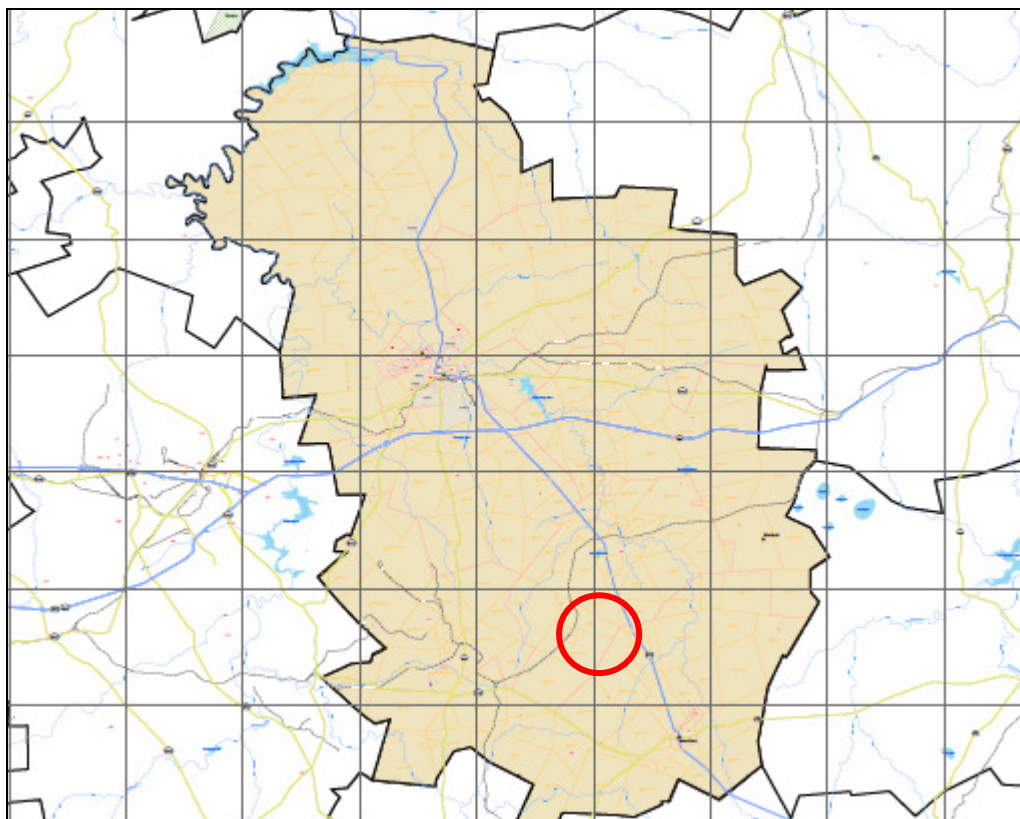


Figure 1.1: Steve Tshwete Local Municipality

Eskom Holdings Limited is planning to expand the current ashing system at the Hendrina Power Station with the development of a proposed new ash dam and associated infrastructure.

Eskom Holdings Limited therefore required the services of an environmental consultant to conduct the necessary Environmental Impact Assessment (EIA), to obtain environmental authorisation from the relevant authorities.

Lidwala Consulting Engineers (SA) (Pty) Ltd responded to Eskom's invitation to submit proposals by proposing to conduct the above-mentioned services. Lidwala SA was appointed as their independent Environmental Assessment Practitioner (EAP) and has been commissioned by Eskom Holdings Limited to conduct the scope of work, including the EIA, as required by the National Environmental Management Act (Nr. 107 of 1998) and the National Environmental Management Waste Act (59 of 2008). Details of all the relevant role-players, including the expertise of Lidwala SA to carry out the required procedures, have been included in **Chapter 2** of this document. This scoping report is prepared according to NEMA Regulation 543 Section 28: *Contents of scoping reports*.

1.1 Need and Justification for the Project

Eskom's core business is the generation, transmission and distribution of electricity throughout South Africa. Electricity by its nature cannot be stored and must be used as it is generated. Therefore electricity is generated according to supply-demand requirements. The reliable provision of electricity by Eskom is critical to industrial development and other poverty alleviation initiatives in the country.

If Eskom is to meet its mandate and commitment to supply the ever-increasing needs of end-users in South Africa, one of Eskom's options is to extend the life of its infrastructure of generation capacity and transmission and distribution powerlines. This expansion includes not only the building new power stations but also expanding and upgrading existing power stations to ensure that the operating life of the power stations can be extended.

The Hendrina Power Station, in the Mpumalanga Province currently uses a wet ashing system for the disposal of ash. Hendrina Power Station currently has five ash dams, of which two (Ash dam 3 and 5) are currently in operation, the other three (Ash dam 1, 2 & 4) are not in use for the following reasons:

- Having reached full capacity (Dam 1)
- Stability issues (Dam 2)
- Temporary decommissioning (Dam 4). Ash dam 4 will be re-commissioned in 2011.

At the current rate of disposal on Dams 3, 4 and 5, the rate-of-rise will exceed 4m/year in 2018, which is not acceptable in terms of structural stability. The Hendrina Power Station is anticipated to ash approximately 64.2 million m³ until the end of its life span which is currently estimated to be 2035.

It has been determined, through studies, that the existing ashing facilities are not capable to provide sufficient ash disposal capacity for this amount of ash for the full life of the station. The existing facilities (Ash Dams 3, 4 and 5) allow for the disposal of 20.9 million m³. Therefore, Hendrina Power Station proposes to extend its ashing facilities and associated infrastructure with the following development specifications:

- Additional airspace of 43.3 million m³
- Ash dam ground footprint of 139 ha
- Ground footprint of associated infrastructure such as Ash Water Return Dams of 70 ha

The need for this extension is to allow the Hendrina Power Station to continue ashing in an environmentally responsible way for the duration of the operating life of the Power Station. The need for the extension is related to the deteriorating coal quality, higher load factors, the installation of the Fabric filter plant (to meet requirements in terms of the

National Environmental Management: Air Quality Act (Act 39 of 2004)) and the need to extend station life.

1.2 Project Background

The project includes the expansion of the Ash Dam facilities at the Hendrina Power Station in the Mpumalanga Province. The ash dam expansion will need to be big enough to dispose of 43.3 million m³ ash. The footprint of the proposed expansion (including the ash dam and associated infrastructure) is estimated to be in the order of 209 ha. However, the final shape and design of the footprint is still to be determined through conceptual engineering and design.

In addition to the expansion of the ash dams the project will also include the expansion of the relevant infrastructure associated with the ashing system, such as an Ash water return dam, pipelines, solution trenches, seepage water collection systems, pump stations, and a seepage recovery dam etc.

In terms of the EIA Regulations published in Government Notice R543 of 2 August 2010 in terms of Section 24 (5) of the National Environmental Management Act (Act No. 107 of 1998), certain listed activities as set out in Government Notices R544 and R545 and in GN 718 of the National Environmental Management: Waste Act (NEMWA) require environmental authorisation and waste management license before they can proceed. The process will also be done in consultation with the Department of Water Affairs (DWA), as well as the Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET).

As mentioned above, Eskom has appointed Lidwala Environmental and Planning Services (EPS) (Pty) as their independent EAP to manage the application and to undertake environmental studies together with a team of specialists. Through this process Lidwala EPS and the relevant specialists will identify and assess all potential environmental impacts associated with the proposed Project. In order to obtain authorisation for all aspects of this project, comprehensive, independent environmental studies are required to be undertaken in accordance with the EIA Regulations.

The environmental studies will follow a three-phased approach in accordance with the EIA Regulations published in terms of the EIA Regulations published in Government Notice R543 of 2 August 2010 in terms of Section 24 (5) of the National Environmental Management Act (Act No. 107 of 1998) i.e.:

- Phase 1: Application
- Phase 2: Environmental Scoping Study
- Phase 3: Environmental Impact Assessment

This Environmental Scoping Study identifies and evaluates potential environmental impacts associated with all aspects of the proposed Project. In terms of the EIA

Regulations, *feasible and reasonable* alternatives have been discussed within the Scoping Study (refer to **Chapter 4**).

1.3 Summary of the EIA Process

1.3.1 EIA Process

The EIA process is controlled through Regulations published under the Government Notice No. R. 543, R. 544, R 545 and R. 546 and associated guidelines promulgated in terms of Chapter 5 of the National Environmental Management Act (Act 107 of 1998). There are three phases to the EIA process that are typically recognised:

- Application Phase;
- Scoping Phase; and
- EIA or Assessment Phase.

The EIA process and appeal process as legislated in terms of NEMA is shown diagrammatically in **Figure 1.2**.

1.3.2 Application Phase

The Application Phase consists of completing the appropriate application form by the Independent EAP and the proponent as well as the subsequent submission and registration of the Project with the competent authority. The DEA has been confirmed as the competent authority, in conjunction with commenting authorities DWA, as well as the MDEDET.

The Application form was submitted to DEA on **2 February 2011**. The reference number allocated to this application is **12/12/20/2175**. This reference number is to appear on all official correspondence with the authorities regarding this project.

A copy of the application form and the Acknowledgement of Receipt of the Application are included in **Appendix A** and **Appendix B** respectively.

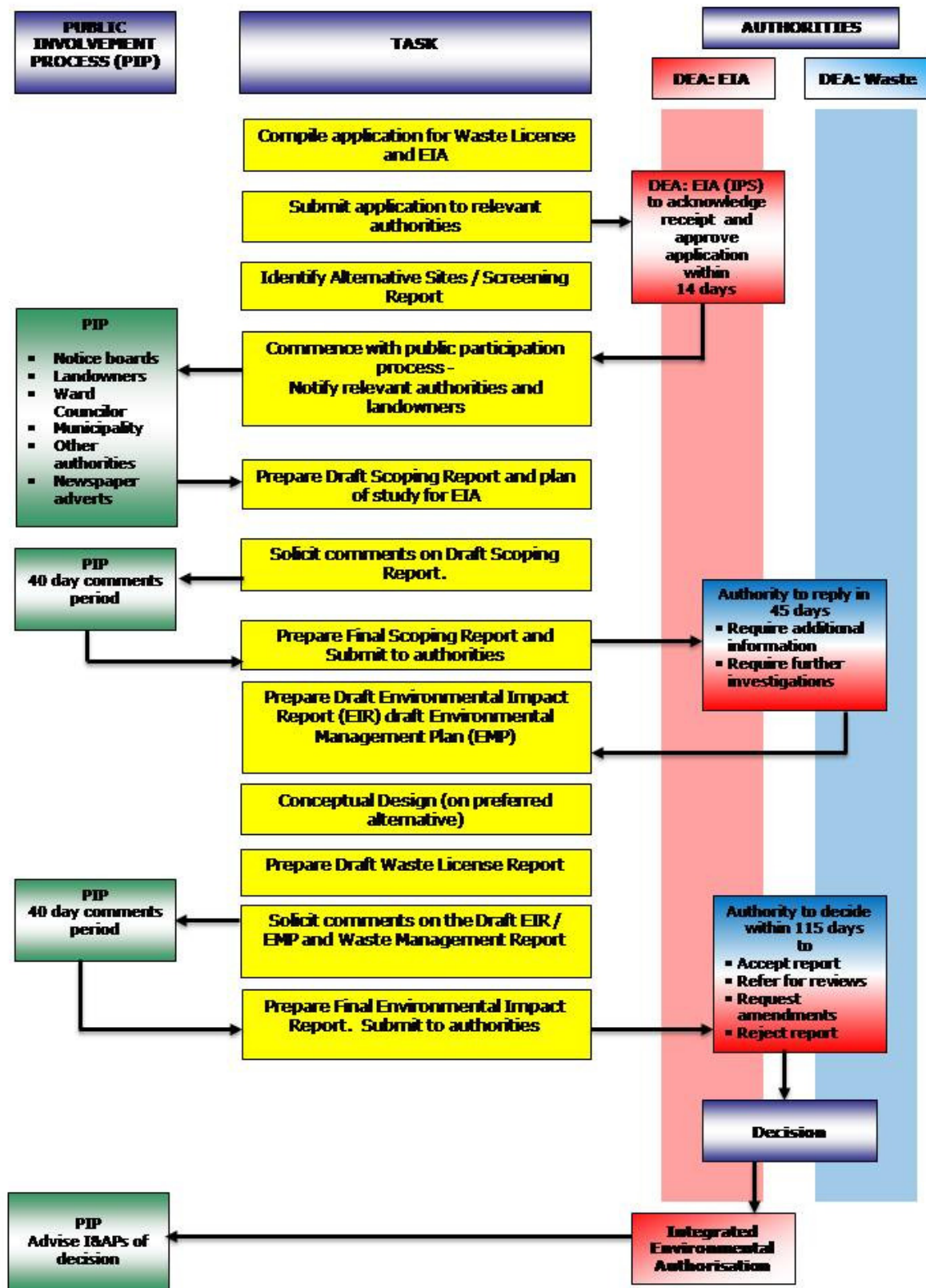


Figure 1.2: Environmental Impact Assessment Process

1.3.3 Scoping Phase

The scope of an environmental assessment is defined by the range of issues and alternatives to be considered, and the approach towards the assessment that will follow. The characteristics of a scoping exercise are as follows:

- It is an open process that involves the authorities, the proponent, stakeholders and I&APs;
- Feasible and reasonable alternatives are identified and selected for further assessment;
- Important characteristics of the affected environment are identified;
- Significant issues that are to be examined in the assessment procedure are identified; and
- It provides the basis for determining terms of reference for the assessment procedure.

At the end of the Scoping Phase a Scoping Report is compiled. As required by regulation, a Draft Scoping Report (DSR) must first be compiled which provides the public an opportunity to comment prior to submission of the Final Scoping Report (FSR) to the authorities. **This report is the Final Scoping Report.**

a) Draft Scoping Report

The aim of the Draft Scoping Report is to document the outcome of the Scoping Phase. This report includes *inter alia*:

- Details of the proposed Project (**Chapter 3**);
- Details on alternatives for the proposed Project (**Chapter 4**);
- Contact details and expertise of the environmental assessment practitioner undertaking the scoping process (**Chapter 2**);
- Description of the key legislation and guidelines potentially applicable to the proposed activity (**Chapter 5**);
- A description of the receiving environment (**Chapter 7**);
- A register of Interested and Affected Parties (**Appendix F**);
- Details of the stakeholder engagement process conducted including a summary of issues raised through the process to date (**Chapter 6**);
- A description of the environmental issues and impacts associated with the proposed Project and alternatives which have been identified (**Chapter 8**);
- A description of the issues that require further investigation (**Chapter 8 and 10**);
- A description of the methodology to be used in the assessment of impacts (**Chapter 10**); and
- A Plan of Study (PoS) for the EIA which will include a description of the public participation process to be undertaken and terms of reference for the identified specialist studies required within the EIA phase (**Chapter 10**).

b) *Final Scoping Report*

Once the draft Scoping Report was reviewed by Interested and Affected Parties, comments were collected and responded to, and the report was amended accordingly (where required) and finalised.

1.3.4 EIA or Assessment Phase

Once the Final Scoping Report and the PoS for EIA have been submitted to and accepted by DEA the Project will proceed into its detailed EIA or Assessment Phase which involves specialist investigation.

Lidwala EPS will produce a Draft Environmental Impact Report (EIR) after the completion of all the specialist studies. The Draft EIR is subject to public comment for a period of 40 days. The Draft EIR will provide an assessment of all the identified key issues and associated impacts from the Scoping Phase.

During the EIA phase the Waste License application report will also be compiled along with the conceptual designs for the preferred site. These reports will also be subject to public review concurrently with the EIA Report.

a) *Draft Environmental Impact Report*

The Draft EIR would contain, *inter alia*, the following:

- Contact details and expertise of the environmental assessment practitioner undertaking the EIA process;
- A detailed description of the proposed activity;
- A description of the affected environment including a description of the affected properties;
- A description of the ongoing public consultation process;
- A description of the need and desirability of the proposed activity;
- An indication of the methodology used in determining the significance of potential environmental aspects;
- A comparative assessment of the feasible alternatives;
- A summary of the findings and recommendations of any specialist report or specialised processes;
- An assessment of the impacts in terms of nature of the impact, extent, duration, intensity and probability;
- An assessment of cumulative impacts;
- The determination of the significance of the impacts;
- A description of environmental management and mitigation measures;
- A description of assumptions, uncertainties and gaps in knowledge;

- An environmental impacts statement including a summary of the findings and a comparative assessment of the positive and negative implications of the Project activity and identified alternatives;
- A draft Environmental Management Plan (EMP); and
- Copies of specialist reports and reports on specialised processes (if required).

b) *Final EIR*

Once the Draft EIR has been reviewed by Interested and Affected Parties, comments will be collected and responded to and the report will be amended accordingly and then finalised.

1.4 Way Forward

The Draft Scoping Report was distributed for public comment for a period of 51 calendar days. All comments on the document have been considered and a response thereto provided within a Comments and Response Report prior to submission of the FSR to the relevant authorities for consideration.

It is anticipated that DWA and MDEDET will provide comment to DEA on the adequacy of the DSR, and DEA will consider these comments prior to making a decision on the adequacy of the report. If the report is adequate then DEA will instruct the EAP to continue on to the next phase of the EIA process.