

**PROPOSED EXTENSION OF ASH DAMS AT HENDRINA POWER STATION,
MPUMALANGA**

DEA Reference Number: 12/12/20/2175

BACKGROUND INFORMATION DOCUMENT

May 2011

WHAT DOES THIS DOCUMENT TELL YOU?

The purpose of this Background Information Document (BID) is to provide Interested and/or Affected Parties (I&APs) with background information about the proposed Hendrina Ash Dam project and the application processes to be undertaken (i.e. EIA process and Waste Management License Application process). It further explains how you can become involved in the project, receive information as the EIA progresses, and raise comments and/or concerns regarding the potential impacts of the project on the environment. You are hereby invited to register as an I&AP by completing and submitting the attached comments and registration sheet.

This BID document will help you to:

- Determine if you are interested in and/or affected by the proposed project;
- Better understand the project in order to be able to provide comment; and
- Understand the environmental authorisation process so that you are able to participate effectively.

WHY EXTEND THE HEDNRINA POWER STATION ASH DAMS?

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 have five ash dams, of

which two ash dams (Ash dam 3 and 5) are currently in operation, the other three dams (Ash dam 1, 2 & 4) are not in use due to either having reached their full capacity (Dams 1 and 4) or due to stability issues (Dam 2). At the current rate of disposal Dams 3 and 5 will reach full capacity within five years (from the end of 2010). 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. Therefore, Hendrina Power Station proposes to extend its ashing facilities and associated infrastructure with the following development specifications:

- Airspace of 43.3 million m³
- 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, which is related to the high ash content in the coal, and an urgent need to extend station life.

WHAT DOES THE HENDRINA ASH DAM EXTENSION PROJECT ENTAIL?

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 is estimated to be in the order of 200 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 Ash water dams, pipelines, stormwater trenches, seepage water collection systems, pump stations, seepage dams etc.

ASH DISPOSAL

The coal-fired power generation process produces large quantities of ash, which is disposed of in ash dumps and dams. Eskom uses coal of a low grade (called middlings coal) which produces a larger mass of ash during combustion. The higher-grade coal predominantly serves the export market. Eskom uses either wet or dry methods of ash disposal. Both utilise effluent water or wastewater, which is the end product of the cascading water re-use process. Wet ash disposal entails the hydraulic conveyance of ash, while dry ash disposal entails the conveyance of partially moistened ash on conveyer belts..

The Hendrina Power Station utilises a wet ashing disposal method and therefore the new proposed ash dam will be built in order to link in with the existing system..

PROJECT ALTERNATIVES

- **Site alternatives:**

Figure 1 shows the identified alternative sites for the proposed new ash dam extension and associated infrastructure. Potential corridor alternatives for the linear infrastructure will be identified during the scoping phase of the EIA phase.

- **Associated Infrastructure:**

Associated infrastructure such as pipelines, seepage dams and ash water return dams will be required for the proposed project. Alternative alignments and/or corridors for the linear structures will be identified during the EIA process.

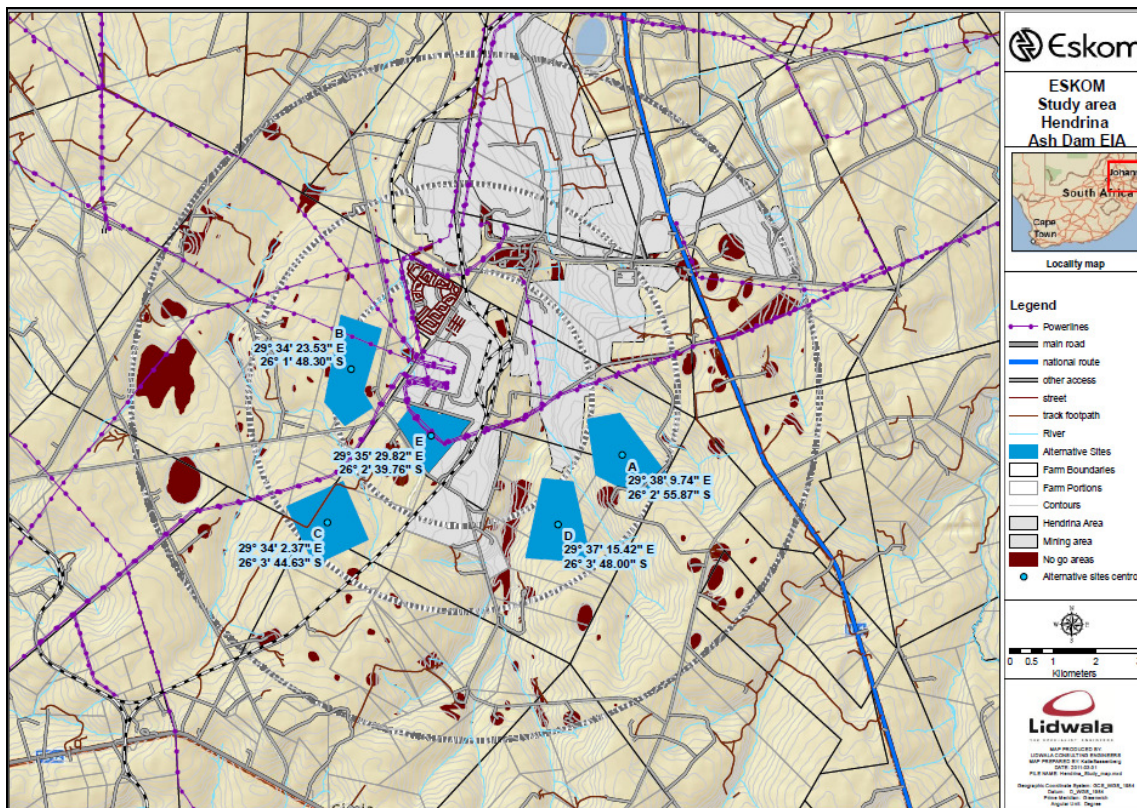


Figure 1: Alternative Sites

WHAT ARE THE POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PROPOSED PROJECT?

The current scope of the Environmental Impact Assessment (EIA) includes:

- The proposed ash dam extension and its associated infrastructure, including *inter alia*:
 - Pipelines;
 - Pump stations;
 - Stormwater trenches;

- Seepage collection systems; and
- Ash Water return dams.

A number of potential environmental impacts associated with the project are anticipated. As part of the EIA, these potential impacts will be assessed through the following specialist studies:

Specialist Study	Organisation Responsible for the Study
Impacts on groundwater	Metago Water GeoSciences 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
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
Visual impact assessment	MetroGIS
Conceptual Design	Lidwala Consulting Engineers (SA) and Alan Robinson
Geotechnical Studies	Alan Robinson
GIS	Lidwala Consulting Engineers (SA)
Survey	Global Geomatics

As part of the Scoping Study, desktop specialist studies will identify potential issues which require further investigation within the EIA phase including potential additional studies that may be required. Input from I&APs through the public participation process also provides valuable input in the identification of issues requiring investigation within this EIA process. More detailed studies on potentially significant impacts will be investigated within the EIA phase of the project for each aspect.

An Environmental Screening Study was undertaken to highlight sensitive areas that should be avoided, with regards to the choice of alternative sites, in order to minimise potential environmental impacts. The Screening Study will be included in the Scoping Report. The EIA Study will evaluate alternative sites for the proposed ash dam extension. The EIA study will recommend the most favourable site and ancillary infrastructure, respectively.

WHY ARE ENVIRONMENTAL STUDIES NEEDED?

In terms of the Environmental Impact Assessment (EIA) Regulations (2010) and the National Environmental Management Waste Act (Act 59 of 2008), Eskom Holdings Limited requires authorisation from the National Department of Environmental Affairs (DEA) for the undertaking of the proposed project. In order to obtain an environmental authorisation and the relevant waste management license for this project, comprehensive, independent environmental studies must be undertaken in accordance with the EIA Regulations.

An EIA is a legislative tool that is used to ensure that potential impacts that may occur due to the proposed development are identified before execution, and can therefore either be avoided or mitigated (minimised). In South African legislation the environment includes social, economic and bio-physical aspects and the EIA must assess these equitably.

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.

This proposed project activates a number of Listed Activities in accordance to the EIA Regulations. The reference numbers of the various Listed Activities are reflected in the table below. Should you wish to obtain a complete list of these activities, please contact the Public Participation Consultants.

NEMA	No. R. 544	9	10	22
	No. R. 545	6	15	
NEMWA	GN 718 - Category B	1	9	11

Eskom Holdings Limited has appointed Lidwala Consulting Engineers (SA) (Pty) Ltd, as Environmental Assessment Practitioners (EAP), to undertake environmental studies to identify and assess all potential environmental impacts associated with the proposed project. As part of these environmental studies, all I&APs are invited to become actively involved through a public participation process.

The EIA can be divided into 4 distinct phases:

Application and initial notification

During this phase an application for authorisation is made to the National Department of Environmental Affairs (DEA). Once DEA acknowledges the EIA and waste license application (within 14 days), an initial notification process takes place whereby the public is informed of the proposed development through *inter alia*, newspaper adverts, notification letters, BIDs and notice boards. This application is an integrated application due to the fact that the project requires both an Environmental Authorisation through NEMA and a Waste management license through NEMWA.

Scoping phase

The purpose of the scoping phase is:

- To investigate and gather information on the proposed alternative sites, technologies and the study area in order to establish an understanding of the area;
- To establish how the proposed development activities will potentially impact on the surrounding environment;

- To identify Interested and Affected Parties (I&APs) and relevant authorities by conducting a Public Participation Process (PPP);
- To identify potential environmental impacts that require detailed assessment at EIA phase, through investigation and PPP; and
- To describe and investigate the alternatives that may be considered.

EIA phase

During this phase all issues and proposed alternatives identified in the scoping phase are assessed and rated in terms of their significance. Where necessary, mitigation measures are recommended to reduce the significance of potential impacts. An Environmental Management Programme will then be compiled that will prescribe environmental specifications to be adhered to during the construction, operational and decommissioning phases of the project, should the Environmental Authorisation be granted. As with the scoping phase, the PPP is an integral and important part of the assessment phase. Once the Final EIR has been submitted to DEA, the decision making process will commence.

Environmental Authorisation and Waste Management License

Due to the fact that the proposed new ash dam encompasses listed activities in NEMA and NEMWA, both an Environmental Authorisation (EA) in term of NEMA and a Waste Management License (WML) in terms of NEMWA are required. However, Eskom have applied for an Integrated License which will cover both of the relevant Acts and their related authorisations. The EIA process is represented diagrammatically in **Figure 2**.

WHAT IS THE EIA PROGRAMME FOR THIS PROPOSED PROJECT?

The following preliminary programme is envisaged for the scoping and EIA:

Application Phase	Scoping Phase	EIA Phase	DEAT review and decision making	Environmental Authorisation
March 2011 (Complete)	March to July 2011	July to October 2011	November 2011 to January 2012	February 2012

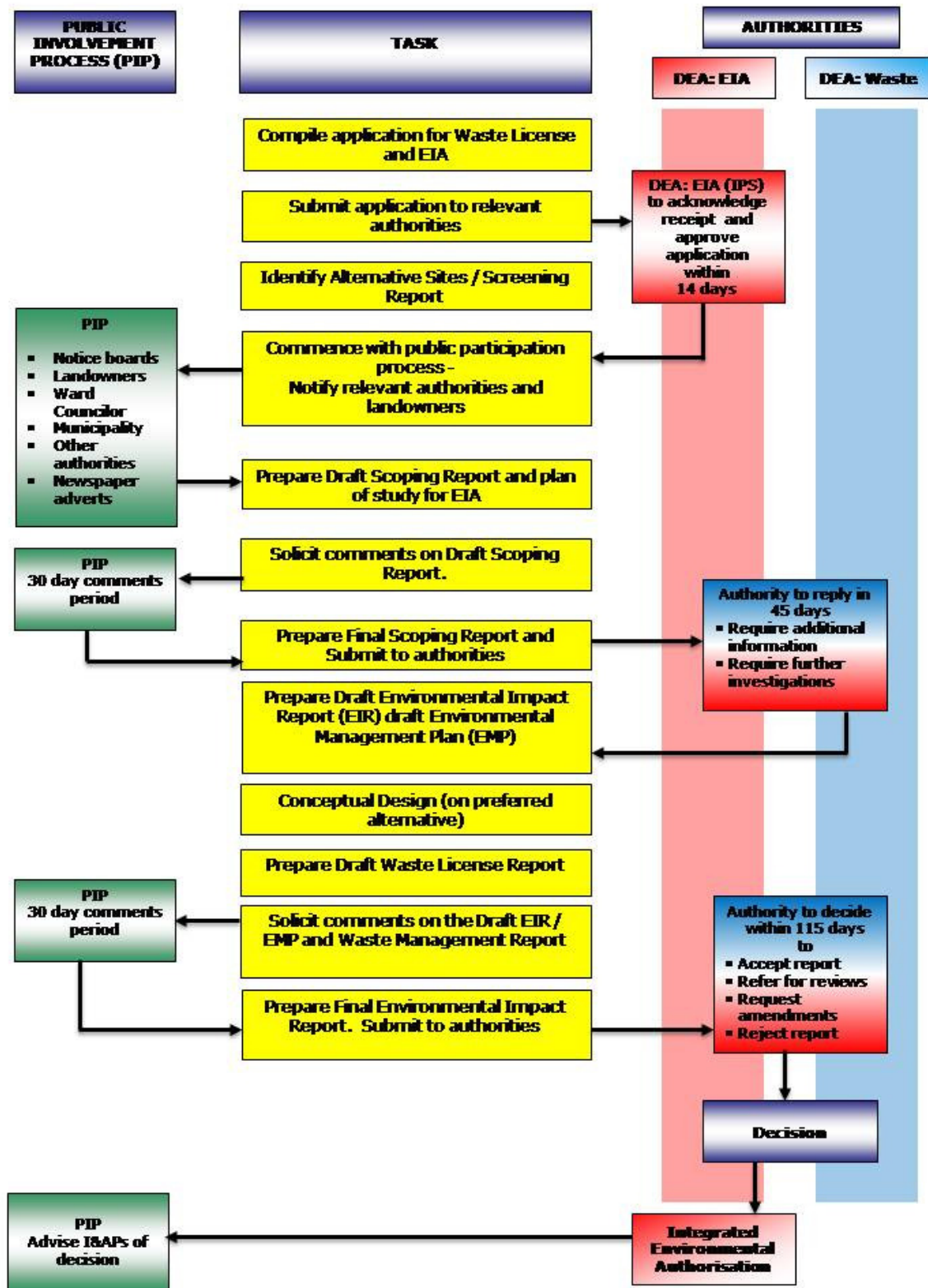


Figure 2: EIA Process

PUBLIC PARTICIPATION PROCESS

It is important that relevant I&APs are identified and involved in the public participation process from the outset of the proposed project. The inputs received from I&APs form an integral part of the EIA process and will also assist the decision-making authority, DEA, with their decision-making. To ensure effective public participation, the process includes the following steps:

- STEP 1: Advertise the EIA Process (regional and local/community newspapers)
- STEP 2: Register I&APs and key stakeholders on the database (on-going)
- STEP 3: Consultation with, and transfer of information to, I&APs through consultation, public meetings, focus group meetings and key stakeholder workshops
- STEP 4: Record all comments, issues and concerns raised by I&APs within an issues trail, which will form an integral part of EIA Reports
- STEP 5: Invite I&AP comment and input on the draft Scoping and EIA reports (40-day comment period)

HOW CAN YOU GET INVOLVED?

1. By responding (by phone, fax or e-mail) to our invitation for your involvement which has been advertised in regional and local newspapers.
2. By mailing, faxing or e-mail the attached comment form to Lidwala SA.
3. By attending the meetings to be held during the course of the project. Should you register as an I&AP you will be invited to attend these meetings. The meeting dates will also be advertised in regional and local newspapers.
4. By telephonically contacting Lidwala if you have a query, comment or require further project information.
5. By reviewing the draft Scoping, EIA and Waste License Application Reports within the 40-day review periods and sending your comments to Lidwala.


If you consider yourself an I&AP for this proposed project, we urge you to make use of the opportunities created by the public participation process to become involved in the process. Your input into this process forms a key part of the environmental studies and we would like to hear from you to obtain your views on the proposed project.

By completing and submitting the accompanying response form, you automatically register yourself as an I&AP for this project, and ensure that your comments, concerns or queries raised regarding the project will be addressed.

This BID is also available in Afrikaans, Pedi and Zulu on request.

COMMENTS, QUERIES AND RESPONSES


**Direct all comments, queries and responses to:
Lidwala Consulting Engineers (SA)**


 PO Box 4221, Northcliff, 2115

ATTENTION:

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