

Environmental Impact Assessment for the proposed coal-fired power station in the Waterberg area, Limpopo

DEAT Ref No 12/12/20/1255

BACKGROUND INFORMATION DOCUMENT

September 2008

Purpose of this document

The purpose of this Background Information Document (BID) is to brief interested and affected parties (I&APs) about the Environmental Impact Assessment (EIA) process that is being conducted for the proposed Waterberg power station west of Lephalale in the Limpopo Province.

In addition to supplying information about the proposed project this BID also provides I&APs with the opportunity to:

- Register as stakeholders in the public participation process; and
- Comment on and make contributions to the proposed project.

The purpose of an EIA is to identify and evaluate potential impacts, to recommend measures to avoid or reduce negative impacts and to enhance positive impacts. The EIA decision-making authority is the Department of Environmental Affairs and Tourism (DEAT) in accordance with section 24(5) of the National Environmental Management Act, Act No 107 of 1998.

Please register by 15 Oct 2008

When you register you will be included on the Waterberg stakeholder database and receive further information for comment as it becomes available. To register, please complete and submit the enclosed registration sheet, write a letter, call or e-mail the public participation office. All EIA documents will also be available on www.eskom.co.za/eia and www.ninhamshand.co.za. Hard copies will also be made available in Lephalale.

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BACKGROUND

Eskom is responsible for the generation, transmission and distribution of electricity in South Africa. It supplies approximately 95% of the country's electricity, and 45% of the total electricity consumed on the African continent. Eskom relies on coal-fired power stations to produce approximately 90% of its electricity.

The growing demand for electricity is placing increasing pressure on Eskom's existing power generation capacity. The South African economy is showing a healthy growth rate and, with that, an associated increase in the demand for electricity.

To address this increase in demand, Eskom is investigating the possibility of building another coal-fired power station in the Waterberg area, in the Limpopo Province.

Eskom was granted a reference number (Ref no: 12/12/20/1255) in July 2008 by the Department of Environmental Affairs and Tourism (DEAT) to proceed with an Environmental Impact Assessment (EIA) as required by the National Environmental Management Act, Act No 107 of 1998.

Electricity cannot be stored in large quantities, neither easily nor cost-effectively in volumes as

is needed by Eskom's consumers and it must, therefore, be generated when needed.

That requires Eskom to have enough installed generating capacity to meet this demand. Without this required installed capacity, Eskom would have difficulty in meeting this demand for electricity, which in turn could have a negative impact on economic growth.

Electricity generation from a coal-fired power station requires that coal is used to heat water which is then converted into superheated steam.

This steam turns a large turbine connected to a rotating magnet that converts this mechanical energy into electrical energy (electricity), which is then further stepped-up (increased) via transformers into high voltage electric power.

Overhead high voltage transmission lines transport the electricity from the power station into the national transmission network. Electricity has to be stepped down (decreased) in the substations to voltages more suitable for industrial and residential uses.

THE PROPOSED PROJECT: CONSTRUCTION OF THE COAL-FIRED POWER STATION IN THE WATERBERG AREA

Eskom proposes to construct and operate a coal-fired power station of installed capacity of up to 5 400 megawatt (MW), consisting of six units of approximately 900 MW each. The final station capacity and layout is dependent on the technology selected, which will be based on the proposals from the various original equipment manufacturers (OEMs). The technology options available to Eskom with respect to cooling and emission reductions will be investigated during the EIA process.

Additional infrastructure that could be required at the site would include:

- a wastewater treatment works;
- a potable water treatment works;
- a demineralisation plant;
- access roads and rail infrastructure;
- general and hazardous
- waste storage and handling facilities;
- dams for the storage of "clean" and "dirty" water;
- an ashing facility;

- a coal stockyard;
- a construction village;
- temporary electricity supply (for construction) and Distribution substation;
- temporary water supply through pipelines (for construction);
- A Transmission High-Voltage (HV) yard; and
- Water supply pipelines and raw water storage reservoirs;
- Associated infrastructure;

This EIA is conducted by:



On behalf of:



DESCRIPTION OF THE PROPOSED PROJECT

Three potential sites for the proposed construction of the power station have been chosen to the west of Lephalale and also west of the existing Matimba power station and the Medupi power station (currently under construction).

The identification of potential sites was driven by the location of the coal resources in the Waterberg area, the fact that the power station could not be constructed on top of coal resources and constraints such as geographical borders and fault lines. Since the specific coal supplier has not yet been selected, it was recommended that the candidate sites had to be no further than 30 km from the furthest coal mine, due to the technical constraints of constructing and operating conveyor belts in excess of 30 km. It was further suggested that the sites had to be located such that each site could be supplied from any of the local coal mines.

Through this process, three alternative sites were delineated after the evaluation of various technical considerations as well as environmental and social criteria such as impact on local air quality and land use. The sites are located in the vicinity of Steenbokpan, to the south of the Enzaamheid geological fault. Please refer to **Figure 1** for a map depicting the sites.

The three sites will be thoroughly investigated during the EIA process. The findings of the EIA will enable the project team to recommend a preferred site for construction of this power station, from an environmental perspective. Eskom will then evaluate the technical and financial considerations of the three sites, and select the site that meets their requirements from a technical, environmental and financial perspective.

The three sites include the following farms:

Site A – 8 328 ha

- Minnaarspan, Farm No 322
- Zyferbult, Farm No 324
- Taaiboschpan, Farm No 320
- Zandheuwel, Farm No 356
- Leliefontein, Farm No 672
- Portion of Doornlaagte, Farm No 353

Site B – 7 377 ha

- Pyppan, Farm No 326
- Mooipan, Farm No 325
- Knopjesdoorn, Farm No 351
- Portion of Doornlaagte, Farm No 353
- Schuldpadfontein, Farm No 328
- Rooibokbult, Farm No 330
- Portion of Paardevley, Farm No 329

Site C – 8 122 ha

- Dwars-in-die-Weg, Farm No 289
- Gifboschpan, Farm No 288
- Witkop, Farm No 287
- Rooiboklaagte, Farm No 283
- Haakdoornpan, Farm No 673
- Haakdoornhoek, Farm No 333
- Vaalboschhoek, Farm No 285

PROPOSED SCHEDULING

The construction of the proposed power station and associated infrastructure will be implemented in a phased manner. The first phase will be to conduct the EIA in order to obtain environmental authorisation (previously known as a Record of Decision) from the Department of Environmental Affairs and Tourism (DEAT), which is required before any construction may commence. As part of the EIA process, an Environmental Management Plan (EMP) will also be submitted to DEAT for their approval. The purpose of the EMP will be to manage the impacts of the power station activities, during the construction, operation and decommissioning phases.

During the EIA, Eskom's land negotiators will make presentations on the land acquisition process, to ensure that potentially affected landowners understand the process and what to expect, should Eskom require their land. Landowners would be compensated for their land at market-related prices, based on an independent evaluation of the land and its improvements. Depending on the outcome of the environmental assessment and subsequent decision by DEAT, Eskom may commence with the construction phase sometime between 2010 and 2011.

AN ENVIRONMENTAL ASSESSMENT (EIA)

What is an EIA?

An EIA is a planning and decision-making process undertaken in terms of section 24 (5) of the National Environmental Management Act (NEMA), Act No 107 of 1998. The EIA has two parallel and integrated processes namely, a technical and public participation process. The technical process investigates "hard" information: facts based on scientific and technical study, statistics or technical data. It identifies the potential negative and positive consequences of a proposed project or development at an early stage, and recommends ways to enhance positive impacts and to avoid or reduce or mitigate negative impacts. The findings of an EIA also guide the technical and financial investigations. The EIA regulations require that an EMP be developed for all identified impacts. An EMP provides specifications on how to operate and implement the project. The provisions of the EMP will be legally binding on the proponent throughout the life cycle of the project.

Public participation is a cornerstone of any EIA process that facilitates openness and transparency. It provides stakeholders with sufficient information and affords them ample opportunity to make valuable contributions to the project, in terms of their issues and concerns. It should be noted that negotiations with

landowners for land and servitudes and compensation do not form part of the public participation process for an EIA. Eskom will negotiate servitudes or the acquisition of land directly with landowners.

The public participation process is designed to provide sufficient and accessible information to I&APs in an objective manner to assist them to:

- Raise issues of concern and make suggestions for alternatives and enhanced benefits;
- Contribute local knowledge;
- Verify that their issues have been captured and considered by the technical investigations;
- Comment on the findings of the EIA.

Activities assessed during these EIAs

Activities to be assessed in the EIA are listed in terms of Sections 24 of NEMA (Government Notice 386 and 387 of April 2006). The primary activity being the proposed construction of a coal-fired power station. A full list of the activities will be published in the Draft Scoping Report.

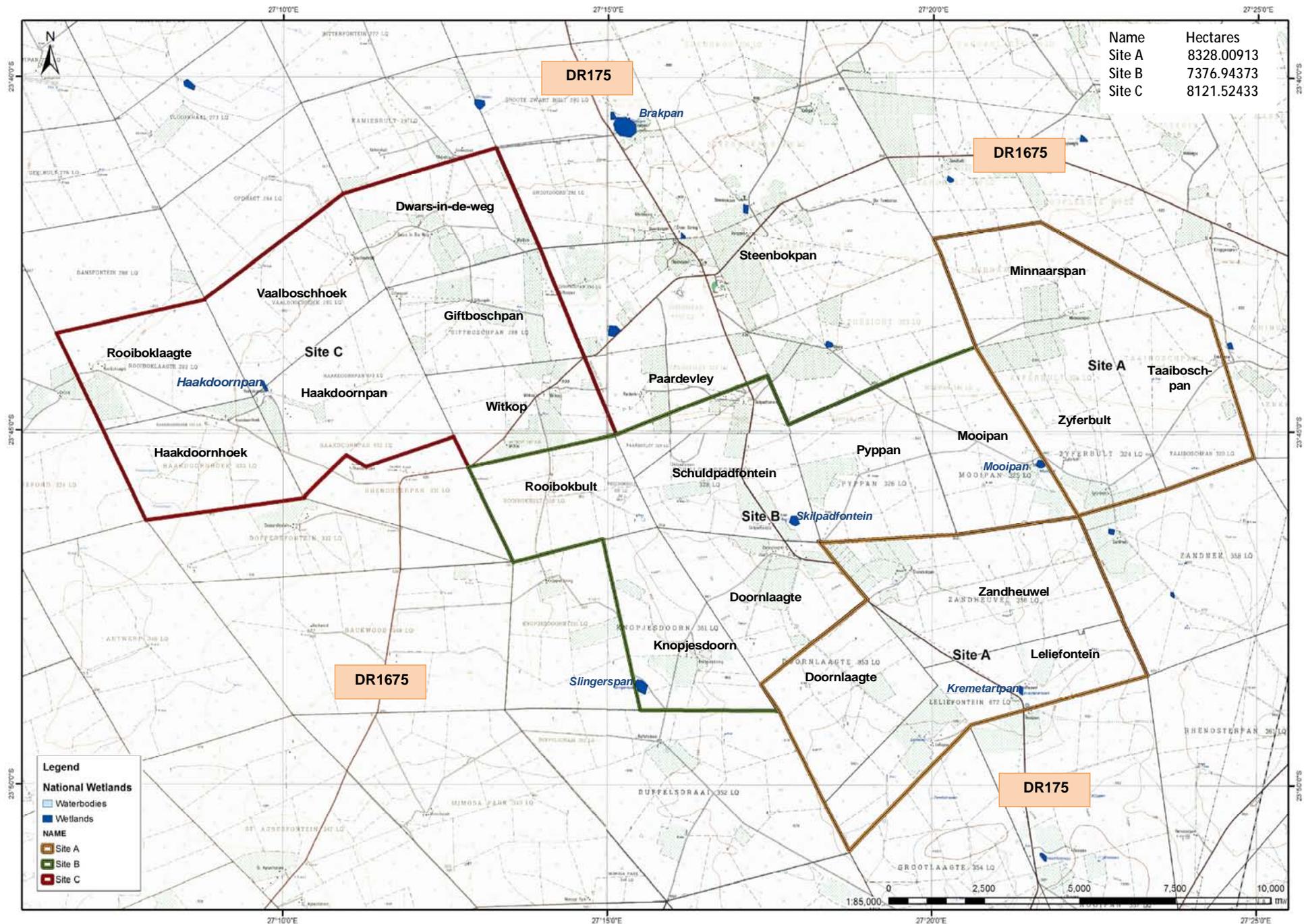


Figure 1 : Map depicting the three sites under investigation

Approach to the EIA

An EIA is conducted in phases, as outlined below. The provisional scheduling of these phases for the proposed coal-fired power station in the Waterberg area is also indicated.

Scoping Phase of the EIA: From July – November 2008

The first phase is the Scoping Phase, which is conducted to gain understanding of the potential environmental issues that are relevant to the project, and to determine where further information is required, in the form of specialist studies/investigations. A Scoping Report and Plan of Study for EIA are submitted to the DEAT, for their review and to approve the proposed approach to the detailed investigation required in the next phase. Activities involved in the Scoping Phase include:

- Meetings with authorities to agree on process and study requirements;
- Registering the EIA with the DEAT who allocates a reference number to each EIA. In this case the relevant number is 12/12/20/1255.
- Notification of Interested and Affected Parties (I&APs) in the project area of the commencement of the EIA process, through advertisements in selected local and regional newspapers and on-site notices;
- Distribution of this Background Information Document and an invitation to contribute to the EIA process to I&APs in the project area and beyond
- Stakeholder meetings with relevant representatives to announce the project;
- Compilation of a Draft Scoping Report
- Convening stakeholder workshops and a meeting in the project area to obtain comment on the Draft Scoping Report; and
- Submission of a Final Scoping Report, capturing all issues raised for the impact assessment, to the DEAT.

Impact Assessment Phase of the EIA: From November 2008 – July 2009

The second phase of the EIA is an Impact Assessment Phase which entails undertaking various specialist studies in order to investigate certain impacts in detail. Specific activities will include:

- Specialist studies focussed on outcomes of the scoping phase and issues raised by stakeholders;
- Compilation of a Draft Environmental Impact Report indicating the significance of positive and negative impacts and measures to enhance positive impacts, and to reduce or avoid negative impacts;
- Compilation of a Draft EMP which is appended to the Draft EIR. Following approval by authorities, the EMP will ensure compliance to environmental regulations during the construction, operation and decommissioning phases;
- Distribution of the Draft Environmental Impact Report, including Issues and Response Report, for comment; and
- Stakeholder meeting in the project area to present the findings of the EIA for stakeholder comment.

Decision-making Phase of the EIA: From August 2009 – December 2009

The final step involves finalising the Environmental Impact Report with comments received, for submission to the DEAT who are required to accept or reject this report within 30 days. Should Environmental Authorisation be granted, stakeholders must be advised of the decision as well as the opportunity to appeal the decision, should they so wish.

Preliminary list of environmental issues

A number of potential environmental issues have already been identified and are listed below to assist I&APs to better understand the investigations to be undertaken as part of the environmental assessment process:

Potential environmental issues are:

- Impacts on air quality in the area;
- Potential nuisance impacts during and after construction (e.g. dust, noise, etc);
- Socio-economic impacts during construction related to an influx of construction workers and after construction in terms of loss of property, job creation, etc;
- Visual impacts arising from the power station;
- Change of character of the area;
- Impacts on fauna and flora (including avifauna);
- Potential safety impacts;
- Benefits and disadvantages of the development to local and regional economy;
- Potential traffic impacts during construction;
- Social impacts (including loss of property and land, marginalisation of local people etc.);
- Potential impacts on natural systems, e.g. wetlands and their delineation;
- Impacts on ground and surface water resources.

Your comment is important

Your comments will ensure that all relevant issues are evaluated in the EIA. You are requested to complete the enclosed registration/comment sheet, write a letter, call or email the public participation office in Midrand (see information box for contact details). You will then receive further information about the proposed project and the EIA.

Please also contact the public participation office if you require a copy of the EIA Regulations, the User Guide to the National Environmental Management Act (NEMA) or any other material that will assist you to participate in this process.

Your registration as an Interested and Affected Party and your comments are important

The purpose of an EIA is to provide the authorities with sufficient information on which to base a decision on whether to grant Environmental Authorisation to the proposed project or not and, if yes, under which conditions. The contributions of stakeholders from all sectors of society will assist in informed decision-making. You are invited to participate freely and to submit any comments or information you feel may be useful to the EIA process.