

BASIC ASSESSMENT (BA) FOR THE PROPOSED CONSTRUCTION AND OPERATION OF THE HENDRINA NORTH 132KV POWERLINE TO HENDRINA POWER STATION IN THE MPUMALANGA PROVINCE OF SOUTH AFRICA.

TERMS OF REFERENCE FOR SPECIALIST STUDIES

1 INTRODUCTION

The purpose of these Terms of Reference is to provide the specialist team with a consistent approach to the specialist studies that are required as part of the Basic Assessment (BA) process being conducted in respect of the Hendrina North grid connection infrastructure to serve the Hendrina North Wind Energy Facility (WEF). This will enable comparison of environmental impacts, efficient review and collation of the specialist studies into the BA reports, in accordance with the latest requirements of the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended).

2 PROCESS

In terms of the Environmental Impact Assessment (EIA) Regulations, which were published on 04 December 2014 [GNR 982, 983, 984 and 985] and amended on 07 April 2017 [promulgated in Government Gazette 40772 and Government Notice (GN) R326, R327, R325 and R324 on 7 April 2017], various aspects of the proposed development are considered listed activities under GNR 327 and GNR 324 which may have an impact on the environment and therefore require authorisation from the National Competent Authority (CA), namely the Department of Forestry, Fisheries and Environment, (DFFE), prior to the commencement of such activities. Specialist studies have been commissioned to assess and verify the power line under the new gazetted specialist protocols.

3 PROJECT BACKGROUND

ENERTRAG South Africa (Pty) Ltd (hereafter referred to as "ESA"), has appointed SiVEST SA (Pty) Ltd (hereafter referred to as "SiVEST") to undertake the required BA Process for the proposed construction and operation of a 132kV overhead power line to connect the proposed Hendrina North Wind Energy Facility ("WEF") (14/2/16/3/3/2/2130)¹ to the Hendrina Power Station. The proposed project aims to feed the electricity generated by the proposed Hendrina North WEF into the national grid. The WEF will form part of the Renewable Energy Independent Power Producer Programme (REIPPP) (in line with the Integrated Resource Plan (IRP) – renewable wind energy).

¹ Note: The proposed Hendrina North WEF (DFFE Reference No. 14/2/16/3/3/2/2130) is subject to a separate EIA Process as contemplated in terms of the EIA Regulations 2014 (as amended), which is currently being undertaken separately from this BA process by another consultant.

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4 PROJECT DESCRIPTION

4.1 Project Location

The proposed project is located approximately 15km west of Hendrina, within the Steve Tshwete Local Municipality, in the Nkangala District Municipality, Mpumalanga Province. The Hendrina Power Station is located approximately 17km northwest of Hendrina, near Pullens Hope (refer to **Figure 1**). The proposed powerline (up to and including 132kV) to Hendrina Power Station will be ~20km long depending on the exact route. A 500m corridor is proposed (250m from the centre lines). The proposed project (including site area and powerline corridors) will be located on the following properties / farm portions:

Portion No.	Farm No.	Farm Name
12	153	Driefontein
37	153	Driefontein
2	153	Driefontein
17	153	Driefontein
14	151	Roodepoort
13	151	Roodepoort
2	151	Roodepoort
18	151	Roodepoort
1	151	Roodepoort
8	154	Boschmanskop
3	185	Haartebeestkuil
4	185	Haartebeestkuil
1	25	Broodsneyerplaats
0	162	Hendrina Power Station
0	186	Gloria
11	162	Hendrina Power Station
1	158	Aberdeen

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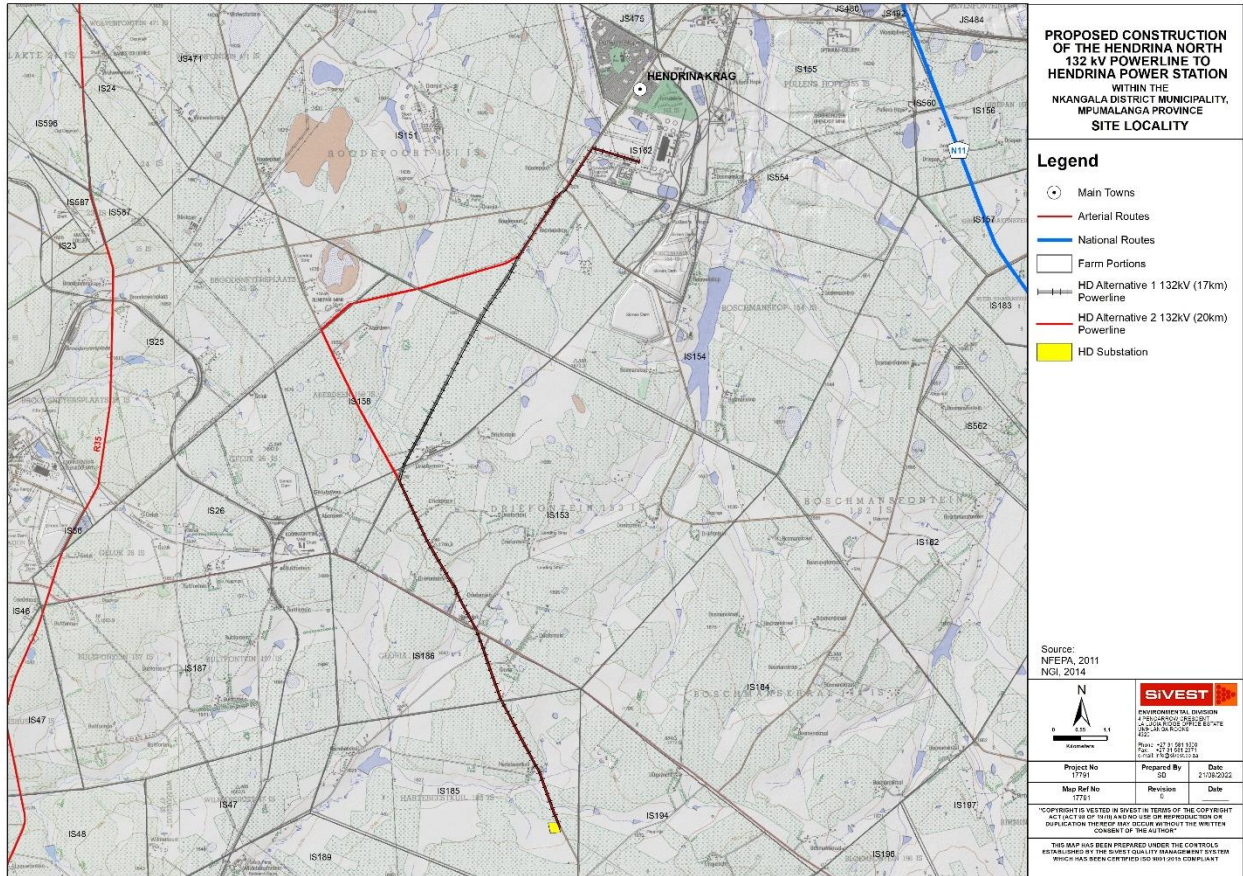


Figure 1: Hendrina North Grid Infrastructure Site Locality

4.2 Grid Infrastructure Connection Components

The Project entails the development of electricity transmission and distribution infrastructure required to connect the proposed Hendrina North WEF to the National Grid via the existing Eskom substation, located at the Hendrina Power Station.

The Applicant intends to develop the Project under a self-build agreement with Eskom. Once construction is complete it is anticipated that the Grid Infrastructure, and associated Environmental Authorisation, will be transferred to the Grid Operator (Eskom). Eskom will be the ultimate owner of the Grid Infrastructure and will be responsible for the operation, maintenance and decommissioning (if applicable) thereof. The Project will make use of the Hendrina North WEF² Project laydown areas and construction camps (subject to a separate application for EA)

The proposed grid connection infrastructure will include the following components:

² Note: The proposed Hendrina North WEF (DFFE Reference No. 14/12/16/3/3/2/2130) is subject to a separate EIA Process as contemplated in terms of the EIA Regulations 2014 (as amended), which is currently being undertaken separately from this BA process by another consultant.

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4.2.1 Onsite Substation

- Onsite substation consisting of 33/132kV yard (to be owned by the applicant) and a 132kV switching station yard (to be owned by Eskom) (footprint up to 3ha). The substation will consist of:
 - feeder bays, transformers, switching station electrical equipment (bus bars, metering equipment, switchgear, etc.), control building, workshop, telecommunication infrastructure, and access roads.
 - The substation will include an area with a subterranean earthing mat onto which a concrete plinth will be constructed.

4.2.2 132kV powerline

- Up to 132kV powerline connecting the on-site substation at Hendrina North WEF to the Hendrina Power Station. Power line towers being considered for this development include self-supporting suspension monopole structures for relatively straight sections of the line and angle strain towers where the route alignment bends to a significant degree. Maximum tower height is expected to be approximately 40m.

Technical details associated with proposed powerlines

Powerline capacity:	132kV powerlines (single circuit or double circuit)
Powerline corridor length	Approx. 17-20km (To be confirmed prior to construction)
Powerline corridors width	500m (250m on either side of centre line)
Powerline servitude	32m per 132kV powerline
Powerline pylons:	Monopole or Lattice pylons, or a combination of both where required
Powerline pylon height:	Maximum 40m height

5 GRID CONNECTION BA ALTERNATIVES

The proposed grid connection infrastructure proposals include two (2) power line route alignment alternatives within a 500m wide and a 33/132kV onsite substation (**Figure 2**). These alternatives will be considered and assessed as part of the BA process and will be amended or refined to avoid identified environmental sensitivities.

The two alternative grid connection solutions (within a 500m wide corridor) will include:

- **Grid Connection Alternative 1 (Preferred):** The proposed powerline will be approximately 17km and will connect to the Hendrina North WEF to the Hendrina Power Station. This alternative is shorter span over existing road and farm boundaries. This is the landowners preferred routing. The preferred pylon and powerline will be 132 kV Intermediate Self-Supporting single circuit or double circuit Monopole.
- **Grid Connection Alternative 2:**
The proposed powerline will be approximately 20km and will connect to the Hendrina North WEF to the Hendrina Power Station. This alternative follows an existing a dirt road until it meets the Eskom HENDRINA-ABINA 132kV powerline. It then follows the Eskom powerline

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into the Hendrina Power Station. The preferred pylon and powerline will be 132 kV Intermediate Self-Supporting single circuit or double circuit Monopole.

The proposed substation will be located on Portion 3 of Hartebeestkuil 1851S. This site was identified as the only alternative due to the substation location needing to be centrally located, its location outside of identified wetlands and critical biodiversity areas, on undeveloped land (not within agriculture land as per land owner request).

5.1 No-Go Alternative

The 'no-go' alternative is the option of not undertaking the proposed grid connection infrastructure project. Hence, if the 'no-go' option is implemented, there would be no development. This alternative would result in no environmental impacts from the proposed project on the site or surrounding local area. It provides the baseline against which other alternatives are compared and will be considered throughout the report.

6 SPECIALIST REPORT REQUIREMENTS

6.1 Site Sensitivity Verification and Reporting

The requirements for Specialist Studies being undertaken in support of applications for Environmental Authorisation are specified in **Appendix 6** of the 2014 NEMA EIA Regulations (as amended), as well as the Assessment Protocols that were published on the 20th of March 2020, in Government Gazette 43110, GN 320 and the Assessment Protocols that were published on the 30th of October 2020, in Government Gazette 43855, GN 1150. These protocols stipulate the Procedures for the Assessment and Minimum Criteria for reporting on identified environmental themes in terms of Sections 24(5)(A) and (H) and 44 of the NEMA, when applying for EA.

The Assessment Protocols are as follows:

- **PART A:** This relates to the Site Sensitivity Verification (SSV) and Reporting requirements where a Specialist Assessment is required but no specific Assessment Protocol has been prescribed. In this instance, specialist assessment must comply with **Appendix 6** of the 2014 NEMA EIA Regulations (as amended). However, the current use of the land and the environmental sensitivity of the site under consideration as identified by the DFFE Screening Tool must be verified and confirmed and an SSV report must be compiled and included as an appendix to the Specialist Assessment. Where there are no sensitivity layers on the Screening Tool for a particular Specialist Assessment, then this must be stated in the actual Specialist Assessment and in the accompanying SSV report.
- **PART B:** This relates to the Site Sensitivity Verification (SSV) and Reporting requirements where a Specialist Assessment is required, and a specific Assessment Protocol has been prescribed.

The following Assessment Protocols are relevant to the proposed project:

- Agriculture
- Terrestrial Biodiversity

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- Aquatic Biodiversity
- Archaeological, Cultural and Paleontology
- Avifauna
- Civil Aviation
- Defence
- Terrestrial Plant Species
- Terrestrial Animal Species

6.2 Specialist Assessment Reports / Compliance Statements

Specialists are requested to provide **one (1)** impact assessment report and / or compliance statement that provides an assessment of the associated grid connection infrastructure (132kV overhead power line).

The specialist assessment report and / or compliance statement should include the following sections:

6.2.1 Executive Summary

Specialists must provide an Executive Summary summarizing the findings of their report to allow for easy inclusion in the BA report.

6.2.2 Project Description

The specialist report must include the project description as provided above.

6.2.3 Terms of Reference

The specialist report must include an explanation of the terms of reference (TOR) applicable to the specialist study. The gazetted Environmental Assessment Protocols of the NEMA EIA Regulations (2014, as amended), prescribes Procedures for the Assessment and Minimum Criteria for Reporting on the Identified Environmental Themes in terms of Sections 24(5)(A) and (H) and 44 of the National Environmental Management Act, 1998. These procedures must be considered.

Where a specialist assessment is required and no specific environmental theme protocol has been prescribed, the required level of assessment must be based on the findings of the site sensitivity verification and must comply with Appendix 6 of the EIA Regulations; and any relevant legislation and guidelines deemed necessary

Where relevant, a table must be provided at the beginning of the specialist report, listing the requirements for specialist reports in accordance with Appendix 6 of the EIA Regulations, 2014 (as amended) and cross-referencing these requirements with the relevant sections in the report. An MS Word version of this table will be provided by SiVEST.

6.2.4 Legal Requirements and Guidelines

The specialist report must include a thorough overview of all applicable best practice guidelines, relevant legislation, prescribed Assessment Protocols and authority requirements.

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6.2.5 Methodology

The report must include a description of the methodology applied in carrying out the specialist assessment.

6.2.6 Specialist Findings / Identification of Impacts

The report must present the findings of the specialist studies and explain the implications of these findings for the proposed development (e.g. permits, licenses etc.). This section of the report should also identify any sensitive and/or 'no-go' areas on the development site or within the power line assessment corridors. These areas must be mapped clearly with a supporting explanation provided.

This section of the report should also specify if any further assessment will be required.

6.2.7 Environmental Impact Assessment

The impacts (both direct and indirect) of the proposed grid connection infrastructure (during the Construction, Operation and Decommissioning phases) are to be assessed and rated according to the methodology developed by SiVEST. Specialists will be required to make use of the impact rating matrix provided (in Excel format) for this purpose. **Please note that the significance of Cumulative Impacts should also be rated in this section.** Both the methodology and the rating matrix will be provided by SiVEST.

Please be advised that this section must include mitigation measures aimed at minimising the impact of the proposed development.

6.2.8 Input To the Environmental Management Programme (EMPr)

The report must include a description of the key monitoring recommendations for each applicable mitigation measure identified for each phase of the project for inclusion in the Environmental Management Programme (EMPr) or Environmental Authorisation (EA).

Please make use of the table below for each of the phases i.e. Design, Construction, Operation and Decommissioning.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

6.2.9 Cumulative Impact Assessment

Cumulative impact assessments must be undertaken for the proposed grid connection infrastructure to determine the cumulative impact that will materialise if other Renewable Energy Facilities (REFs) and large-scale industrial developments are constructed within 35kms of the proposed development.

The cumulative impact assessment must contain the following:

- A cumulative environmental impact statement noting whether the overall impact is acceptable; and
- A review of the specialist reports undertaken for other REFs and an indication of how the recommendations, mitigation measures and conclusion of the studies have been considered.

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In order to assist the specialists in this regard, SiVEST will provide the following documentation/data:

- A summary table listing all REFs identified within 35kms of the proposed SEF;
- A map showing the location of the identified REFs; and
- KML files.

It should be noted that it is the specialist's responsibility to source the relevant EIA / BA reports that are available in the public domain. SiVEST will assist, where possible.

6.2.10 No Go Alternative

Consideration must be given to the “no-go” option in the BA process. The “no-go” option assumes that the site remains in its current state, i.e. there is no construction of grid infrastructure in the proposed project area and the status quo would be preserved.

6.2.11 Comparative Assessment Of Alternatives

As mentioned, alternatives for the power line route alignment have been identified. These alternatives are being considered as part of the BA process and as such specialists are required to undertake a comparative assessment of the alternatives mentioned above as per the latest table provided by SiVEST.

6.2.12 Conclusion / Impact Statement

The conclusion section of the specialist report must include an Impact Statement, indicating whether any fatal flaws have been identified and ultimately whether the proposed development can be authorised or not (i.e. whether EA should be granted / issued or not).

6.2.13 Specialist Declaration of Independence

A copy of the Specialist Declaration of Interest (DoI) form, containing original signatures, must be appended to all Draft and Final Reports. This form will be provided to the specialists. ***Please note that the undertaking / affirmation under oath section of the report must be signed by a Commissioner of Oaths.***

7 DELIVERABLES

All specialists will need to submit the following deliverables:

- 1 x Specialist Assessment Report and / or Compliance statement for inclusion in Draft Basic Assessment Report (DBAR) and updated version based on EAP and applicant review;
- 1 x Updated Specialist Report and / or Compliance statement for inclusion in Final Basic Assessment Report (FBAR) should updates and/or revisions be required as part of the public participation process;
- A copy of the specialist's Curriculum Vitae (CV);
- A copy of the Specialist Declaration of Interest (DoI) form, containing original signatures. This form will be provided to the specialists. ***Please note that the undertaking / affirmation under oath section of the report must be signed by a Commissioner of Oaths;***

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- Delineated areas of sensitivity and 'No-Go' areas in KMZ or GIS format; and
- All other relevant data such as photos and maps (see **Section 9** below).

8 DEADLINES AND REPORT SUBMISSION

- Specialist Assessment Report and / or Compliance Statement for inclusion in DBAR no later than [19th September 2022] and
- Updated version based on EAP and applicant review no later than [23rd September 2022] for the DBAR;
- Any changes identified as a result of stakeholder engagement no later than [31st October 2022].

9 REPORT / DATA FORMATS

- All specialist reports must be provided in MS Word format.
- Where maps have been inserted into the report, we will require a separate map set in PDF format for inclusion in our submission.
- Where figures and/or photos have been inserted into the report, we will require the original graphic in jpg format for inclusion in our submission.
- Delineated areas of sensitivity must be provided in either ESRI shape file format or Google Earth KML format. **Sensitivity classes must be included in the attribute tables with a clear indication of which areas are “No-Go” areas.**

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