DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR THE PROPOSED DEVELOPMENT OF KHANYAZWE FLEXPOWER AND ASSOCIATED INFRASTRUCTURE IN MALELANE WITHIN THE JURISDICTION OF NKOMAZI LOCAL MUNICIPALITY, MPUMALANGA PROVINCE

DFFE REF:

14/12/16/3/3/2/2493

DATE:

08 JULY 2024

PREPARED FOR:

KHANYAZWE FLEXPOWER ("KFP")

PREPARED BY

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DOCUMENT CONTROL

PROJECT TITLE:
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ACRONYMS	
CARA	Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)
CBA	Critical Biodiversity Areas
EO	Environmental Officer
DAFF	Department of Agriculture, Fisheries and Forestry
DEA	Department of Environmental Affairs
DHSWS	Department of Settlement Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
CEMPr	Environmental Management Programme
EWWTP	Effluent Waste Water Treatment Plant
HIA	Heritage Impact Assessment
HSA	Hazardous Substance Act, 1973 (Act 15 OF 1973)
HSE	Health, Safety and Environmental
HGM	Hydro-Geomorphic Units
DFFE	Department of Forestry, Fisheries and Environment.
NWPHRA.	Mpumalanga Heritage Resource Agency
MS	Method Statement
NEMA	National Environmental Management Act, 1998 (Act 107 of 1998)
NEM: AQA	National Environmental Management Waste Act, 2008 (Act 36 of 2008)
NEM: BA	National Environmental Management Biodiversity Act, 2004 (Act 10 of 2004)
NEM: WA	National Environmental Air Quality Act, 2004 (Act 39 of 2004)
NHRA	National Heritage Resources Act, 1999 (Act 25 of 1999)
NWA	National Water Act, 1998 (Act 36 of 1998)
OHSA	Occupational Health and Safety Act, 1993 (Act of 85 of 1993)
RTA	Road Traffic Act, 1996 (Act 93 of 1996)
SDS	Safety Data Sheets
SACNASP	South African Council of Natural Scientists Profession

SAHRA	South African Heritage Resources Agency
WULA	Water Use Licence Application
WWTP	Waste Water Treatment Plant

1 INTRODUCTION AND BACKGROUND

Khanyazwe Flexpower (Pty) Ltd (KFP) proposes developing constructing and operating a 1000MW natural gas-fired power plant using Gas Engines (or Internal Combustion Engines (ICE)). After careful engineering consideration and research during the public consultation period, the applicant reviewed the capacity of the proposed power plant. Based on further research and engineering outcomes, it was confirmed that this plant can generate up to a maximum of 1000MW. The proposed project is adopting a phased development approach, which entails the following:

- Phase 1: 440MW to be built by 2028
- Phase 2: 560MW to be built by 2030

Khanyazwe Flexpower (Pty) Ltd will source gas from the Republic of Mozambique Pipeline Investments Company (ROMPCO), which has an existing gas pipeline that connects Mozambique's Pande Temane gas fields to Sasol's operations in South Africa, as well as several industrial and retail customers. Suppose gas from the existing Pande Temane fields is insufficient. In that case, alternative gas sources may include imported LNG projects developed in Matola, which will provide additional gas into the ROMPCO pipeline. KFP is also proposing the development of approximately two 500 m 275 and 132 kV overhead powerlines from the proposed power plant to the existing Eskom Khanyazwe substation. The power plant will provide a mid-merit power profile to the national grid. The proposed project will be located inside an urban area, on Portions 1, 4, 39, 96,99 and 116 of Farm Malelane 389 FP, in Malelane within the Nkomazi Local Municipality, Mpumalanga Province.

The proposed project development of the Khanyazwe Flexpower and associated infrastructure triggers GNR 983, GNR 984 and GNR 985 activities of the NEMA EIA Regulations of 2014 as amended, and Section 21 listed activities in terms of the National Water Act, 1998 (Act 36 of 1998) (NWA). As a result, Nsovo Environmental Consulting (hereafter referred to as Nsovo) has been appointed by Khanyazwe Flexpower (Pty) Ltd to compile an Environmental Management program (EMPr) as part of the Environmental Impact Assessment (EIA) process for the proposed development of the gas-fired power plant. The EMPr will be a guideline for the mitigation and management measures to be implemented during the construction, operation and decommissioning phases of the proposed activities. The EMPr is prepared in terms of the provisions contained within Appendix 4 of GN R. 982 of the NEMA EIA Regulations of 2014 as amended.

2 PURPOSE AND SCOPE OF THE EMPR

This EMPr serves as a guideline for site management and provides specifications and regulations that must be adhered to in all instances. It is the responsibility of all parties, including contractors and subcontractors, involved in the daily activities to commit to implementing the EMPr throughout the project lifecycle.

The objectives of the EMPr are to:

- Ensure that the activity is undertaken in compliance with national and provincial environmental legislations as well as local by-laws and policies;
- Ensure that the EMPr, Khanyazwe Flexpower policies, and other relevant policies are always underwritten;
- Detail mitigation measures, timeframes, and criteria for assessing the success or failure of each measure;
- Provide detailed monitoring programmes to ensure compliance;
- Provide input and strategies for environmental quality control and risk management;
- To preserve the natural environment by limiting destructive actions on site;
- Ensure appropriate restoration of areas affected by construction;
- Prevent long-term environmental degradation; and
- Ensure that activities on site consider the rights of other land users to enjoy a safe and healthy living environment.

3 LOCALITY OF THE PROPOSED PROJECT

The proposed project is within an urban area, on Portions 1, 4, 39, 96, 99, and the Remaining Extent of Portion116 of the Farm Malelane 389 FP, which is approximately 3 km from the Kruger National Park and 18 km west of the Matsulu township. The proposed site is under the administration of the Nkomazi Local Municipality within the Ehlanzeni District Municipality in Mpumalanga province.

Figure 1 is the locality map that shows the location of the proposed Khanyazwe Flexpower. Refer to Appendix A for the A3 locality and sensitivity maps.

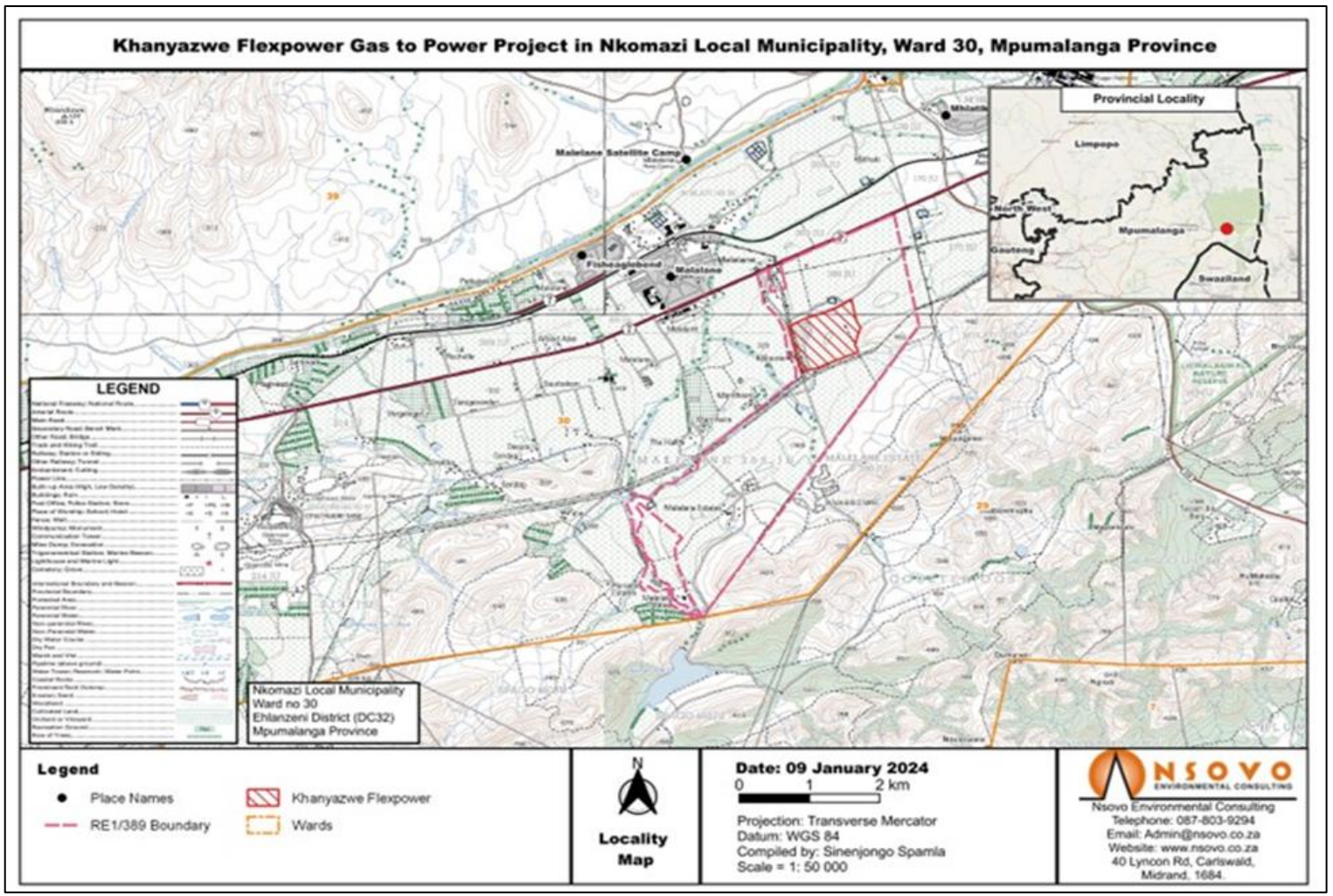

Figure 1: Locality map of the proposed project area

3.1 DESCRIPTION OF THE PROPERTY

The proposed development of the Khanyazwe Flexpower Plant and associated infrastructures is proposed on the properties listed in Table 1 below.

Table 1: Details of the properties affected

Farm Name	Portion Number	Surveyor General 21 Digit Code
Proposed Site		
Malelane 389 FP	1	T0JU00000000038900001
Access Roads		
Malelane 389 FP	4	T0JU00000000038900004
Malelane 389 FP	39	T0JU00000000038900039
Malelane 389 FP	99	T0JU00000000038900099
Malelane 389 FP	96	T0JU00000000038900096
Malelane 389 FP	RE116	T0JU00000000038900116

4 STRUCTURE OF THE EMPR

This report has been compiled in terms of the provisions contained within Appendix 4 of GN R. 982 of the NEMA EIA Regulations of 2014, as amended. The requirements are cross-referenced with the various sections in this report, as detailed in Table 2 below.

Table 2: 2014 NEMA EIA Regulations EMPr Content

No	Requirement	Reference
1(1)(a)	Details of- i) The EAP who prepared the report; and ii) The expertise of the EAP, including curriculum vitae;	Section 3
1(1)(b)	A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 4
1(1)(c)	A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	Section 5

No	Requirement	Reference
1(1)(d)	A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including- (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post closure; and (v) where relevant, operation activities;	Section 6
1(1)(e)	A description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Section 7
1(1)(f)	A description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) will be achieved, and must, where applicable, include actions to- (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practices; (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and (iv) comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;	Section 8
1(1)(g)	The method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 8
1(1)(h)	The frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 8
1(1)(i)	An indication of the persons who will be responsible for the implementation of the impact management actions;	Section 8
1(1)(j)	The time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 8

No	Requirement	Reference
1(1)(k)	The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 8
1(1)(l)	A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Section 8
1(1)(m)	An environmental awareness plan describing the manner in which- (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 9
1(1)(n)	Any specific information that may be required by the competent authority.	Section 10

5 DETAILS AND EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER INCLUDING THE APPLICANT'S DETAILS, ORGANISATIONAL STRUCTURE, AND ROLES

5.1 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

Nsovo has been appointed as the independent Environmental Assessment Practitioner (EAP) for the proposed project and meets the general requirements stipulated in Regulations 13 (3) of the NEMA EIA 2014 Regulation as amended.

Nsovo, therefore is:

- Independent and objective;
- Has expertise in conducting EIAs;
- Consider all relevant factors relating to the application; and
- Provides full disclosure to the applicant and the relevant environmental authority.

Table 3 provides the details of the EAP and relevant experience. A detailed CV and qualifications of the EAP is attached as **Appendix E1**.

Table 3: Details of the Environmental Assessment Practitioner (EAP)

Name of Company	Nsovo Environmental Consulting
Person Responsible	Munyadziwa Rikhotso
Professional Registration	Environmental Assessment Practitioners Association of South Africa EAP EAPASA (Reg 2019/1156)
Postal Address	40 Lyncon Rd

	Carlswald 1684
Telephone Number	087 803 9294
Email	munyadzi@nsovo.co.za
Qualifications & Experience	BSc Honours Environmental Sciences **20 years of experience**
Project Related Expertise	In terms of project-related expertise, the Environmental Assessment Practitioner has completed the following projects: • EIA for the proposed Tubatse strengthening phase 1 – Senakangwedi B integration within the jurisdiction of Greater Tubatse Local Municipality in Limpopo Province. • EIA for the proposed 400KV Maphutha-Witkop Eskom Powerline in Limpopo Province. • EMPr, WULA, and EA amendment for the proposed Juno Gromis 400kV power line • Environmental Impact Assessment process for the proposed development of the Eskom Agulhas 400kV MTS within the jurisdiction of Swellendam Local Municipality, Western Cape. • Environmental Management Plan and Eskom characterization for the upgrading of Eskom distribution lines in Gauteng • Basic Assessment for the proposed Transnet Orex Feeder substations (Aries, Garona, Helios, and Juno substations) within the Northern and Western Cape provinces. • Basic assessment of the proposed development of the Transnet Capital Projects substations (Bosmanskop, Leeufontein, and Rietkuil substations). • Construction Environmental Management Programmes for the proposed Transnet Orex Feeder substations (Aries, Garona, Helios, Juno) within the Northern and Western Cape provinces.

6 DETAILS OF THE APPLICANT

This EMPr is a living document that guides the day-to-day activities throughout the lifecycle of the project; it may from time to time, require revisions as may be dictated by the course of construction, operation and rehabilitation / decommission activities. It is therefore imperative that precautionary measures be taken to ensure that

environmental degradation is minimised while the project is undertaken. This will take a concerted effort from the project team and proper planning is of the utmost importance. This document is applicable to all Khanyazwe Flexpower employees, contractors and subcontractors. The details of the Applicant are presented in Table 4 below.

Table 4: Details of the Applicant

Name of Company	Khanyazwe Flexpower (Pty) Ltd
DFFE Project Reference	14/12/16/3/3/2/2493
Project	Khanyazwe Flexpower

6.1 ORGANIZATIONAL STRUCTURE AND RESPONSIBILITIES

In order to effectively and efficiently operate with utmost care of the proposed project site, it is important that all parties understand their duties and responsibilities throughout all phases of the project lifecycle. Khanyazwe Flexpower (Pty) Ltd and their duly appointed contractors and sub-contractors are fully responsible for ensuring that all activities are undertaken in compliance with the project's Environmental Authorisation (EA) and EMPr as well as world best practice. The following sections describe the roles and responsibilities of the key team members.

6.1.1 Khanyazwe Flexpower (Pty) Ltd

Khanyazwe Flexpower must ensure that all phases of the proposed project comply with the requirements of all environmental authorisations, permits, licences and obligations emanating from other relevant environmental legislation. This obligation is partly through the development of the EMPr and the implementation of the EMPr through its integration into the contract documentation. Khanyazwe Flexpower will retain various key roles and responsibilities during the construction of the Khanyazwe Flexpower. These are outlined below;

- Taking overall responsibility for all activities that occur in the proposed project and associated infrastructure;
- Ensuring that all team members are aware of their roles and responsibilities as outlined in this EMPr;
- Ensuring that all commitments/conditions contained in the EA and EMPr are communicated and adhered to by Khanyazwe Flexpower's employees, contractors and subcontractors;
- Ensure that the contractor is aware of and adheres to the provisions of this EMPr;
- Ensure that the contractor remedies problems timeously and to the satisfaction of the authorities; and
- Appoint an independent and suitably qualified Environmental Control Officer (ECO) to monitor and audit the contractor's compliance with the EA, EMPr, permits and licenses.

6.1.2 The Project Manager

The Project Manager will:

- Ensure that all specifications and legal constraints specifically concerning the environment are highlighted to the Contractor(s) so that they are aware of these.
- Ensure that Khanyazwe Flexpower and its Contractor(s) are aware of all EMP stipulations.
- Ensure that the EMP is correctly implemented throughout the project by means of site inspections and meetings. This will be documented as part of the site meeting minutes.
- Be fully conversant with the EIA for the project, the EMP, the conditions of the Environmental Authorisation, and all relevant environmental legislation.

6.1.3 The site manager/ construction manager

The Site Manager/ Construction (Khanyazwe Flexpower) will:

- Be fully knowledgeable about the contents of the Environmental Impact Assessment.
- Be fully knowledgeable about the contents and conditions of the Environmental Authorisation.
- Be fully knowledgeable about the contents of the Environmental Management Plan.
- Be fully knowledgeable about the contents of all relevant environmental legislation and ensure compliance with these.
- Be fully knowledgeable about the contents of all relevant licenses and permits
- Have overall responsibility for the EMP and its implementation.
- Ensure communication with the Project Manager, the Environmental Control Officer, and relevant discipline Engineers on matters concerning the environment.
- Ensure that no actions are taken which will harm or may indirectly cause harm to the environment and take steps to prevent pollution on the site.
- Confine activities to the demarcated construction site.

6.1.4 Environmental Control Officer

An independent Environmental Control Officer (ECO) must be appointed prior to the commencement of the construction activities. The ECO shall be responsible for monitoring, reviewing, and verifying compliance by the contractor with the environmental specifications. More specifically, the ECO will undertake the following responsibilities:

6.1.5 Communication Services

- To liaise closely with Khanyazwe Flexpower and the contractor's Environmental Officer (EO).
- To ensure that the landowner's general and special conditions are implemented.
- To agree with the landowner as well as Khanyazwe Flexpower on the bush clearing method and other method statements.
- To assist in conflict resolution.
- To ensure that the contractor rehabilitates any damage caused during construction.
- After the final rehabilitation has been completed on a property, obtain the immediate release from the landowner.

6.1.6 Environmental Management

- Monitoring of site environmental progress with respect to time, deliverables, and quality.
- Liaison between Authorities, Khanyazwe Flexpower and contractor on environmental matters.
- Recommending EMPr modifications to Khanyazwe Flexpower as and when necessary.
- Communicating changes in the EMPr to all relevant parties.
- Issuing contractor's communications and site instructions.
- Monitoring contractor the performance of contractors and subcontractors to ensure compliance with environmental and statutory requirements.
- Checking the contractor EO's record of environmental incidents (spills, impacts, legal transgressions, etc.) as well as corrective and preventive actions taken.
- Checking the contractor EO's complaints register, which records all complaints and actions taken.
- Compiling and completing the environmental management related component of the handing-over documentation and any other related documents.
- Timeously identifying any sensitive site issues which may affect environmental aspects and reporting of this to Khanyazwe Flexpower.
- Monitoring that good housekeeping practices are followed and maintained by the Contractor.
- Monitoring that the ground rehabilitation is initiated, on time, complying with the EA and EMPr, and to the satisfaction of the landowner.
- Assisting the Contractor and Khanyazwe Flexpower's EO with the environmental awareness training for all site staff, targeted at the workers' level so that they have a basic understanding of the environment that they are working in.
- Ensuring that sensitive areas are demarcated within or alongside the construction areas i.e. sites identified in the EMPr, EA.

6.1.7 Monitoring

- Validating the site environmental monitoring plan.
- Carrying out environmental surveillance.
- Validating and recording of certificates proving the legal disposal of waste streams.

6.1.8 Reporting

- To complete a daily diary and monthly reporting.
- To prepare monthly monitoring reports for submission to Khanyazwe Flexpower and the Department of Fisheries, Forestry and the Environment (DFFE), Environmental Compliance Section as and when required.
- Manage the compliance of the Contractor according to the EA, EMPr, and landowner conditions. The reports are to include photographic images of compliances, non-compliances, and special occurrences taking place during the reporting period.
- To attend site meetings as required.
- To inform Khanyazwe Flexpower of any activity not in accordance with the EA and respective Conditions, the EMPr and Landowner's agreed general and special conditions, or detrimental to the environment.

6.1.9 Administration

- To ensure a proper site ECO administration function to cater to all environmental site-related correspondence.
- To execute environmental responsibilities as per Khanyazwe Flexpower's Risk Management System.
- To promote and maintain sound relationships with the landowner, community, Contractors, and suppliers.

6.1.10 Environmental Officer

The contractor shall appoint their own Environmental Officer (EO). The EO will be responsible for the day-to-day implementation of this CEMPr and for the compilation of regular monitoring reports (i.e., daily inspection and weekly reports). In addition, the Environmental officer must act as a liaison and advisor on all environmental-related issues and ensure that any complaints received from the public are duly recorded and forwarded to the site manager, construction manager, and the contractors.

The Contractor's Environmental Officer should:

- Be well-versed in environmental matters.
- Understand the relevant environmental legislation and processes.

- Understand the hierarchy of Environmental Compliance Reporting and implications of Non-Compliance.
- Know the background of the project and understand the implementation program.
- Be able to resolve conflicts and make recommendations on-site in terms of the requirements of this Specific ation.
- Keep accurate and detailed records of all EMP-related activities on site.

6.1.11 Health Safety and Environmental Representative (HSE)

The Safety, Health and Environment Representative (SHE officer) will:

- Develop and compile environmental policies and procedures.
- Direct and liaise with the Environmental Control Officer (ECO) regarding monitoring and reporting on the construction phase's environmental performance.
- Conduct internal environmental audits and co-ordinate external environmental audits.
- Liaise with statutory bodies on environmental performance and other issues as required.

6.1.12 Contractor (including Sub-Contractors)

The Contractor (including Sub-Contractors) will report to the Project Management Team and be responsible for:

- The appointment of an Environmental Representative/Environmental Officer who will ensure that all construction activities on site are undertaken in accordance with the EMPr ;
- To fulfill all obligations as per the agreed contract;
- To implement the projects as per the approved project plan;
- Drafting Environmental Method Statements for all activities to mitigate environmental impacts;
- Informing the workforce of their roles and responsibilities in terms of the EMPr;
- Ensuring that the workforce and sub-contractors comply with this EMPr;
- Ensuring compliance with the EMPr and EA commitments and any other legislative requirements as applicable to their activities;
- Adhering to any instructions issued by the Project Manager on the advice of the ECO;
- Preparation and timeous submission of environmental compliance reports that include updated incident and complaints registers;
- Induction and training of their works force as well as subcontractors prior to the commencement of construction, taking cognisance of this EMPr and EA.
- To inform and educate all employees about the environmental risks associated with the different construction activities through toolbox talks, environmental notices, and other methods with a specific focus on environmental topics throughout the project.

- To provide all necessary supervision during the execution of the project and be available on-site at all times;
- To ensure that implementation is conducted in line with the EA and EMPr;
- To comply with special conditions as stipulated by Landowners during the negotiation process and
- Ensure compliance with pertinent environmental legislation and other legally binding documents.

6.2 AUTHORISING DEPARTMENT

The Competent Authority is the Department of Forestry Fisheries and Environment (DFFE) and their role is to enforce compliance with the EA and the EMPr conditions.

7 A DETAILED DESCRIPTION OF THE ASPECTS OF THE ACTIVITY THAT ARE COVERED BY THE EMPR AS IDENTIFIED BY THE PROJECT DESCRIPTION

This EMPr is part of the EIA process for the proposed Khanyazwe Flexpower and associated infrastructure. Subsequently, the EMPr incorporates measures for the construction, operation, and decommissioning activities associated with the proposed project. Table 6 below specifies the listed activities that are being applied for in terms of the 2014 EIA Regulations.

Table 5: Listed and specified activities

Listed Activity		Describe the portion of the proposed project to which the applicable listed activity relates.
Applicable activities listed under the EIA Regulations of 2014 as amended – Listing Notice 1		
GNR 983 Activity 11 (ii)	*The development of facilities or infrastructure for the transmission and distribution of electricity-* *(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or* ***(ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more**, excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is-* *(a) temporarily required to allow for maintenance of existing infrastructure;* *(b) 2 kilometres or shorter in length;* *(c) within an existing transmission line servitude; and* *(d) will be removed within 18 months of the commencement of development.*	The project entails developing a 275kV transmission powerline inside an urban area from the power station to the Khanyazwe substation.
GNR 983 Activity 14	*The development and related operation of facilities or infrastructure for the storage or for the storage and handling of dangerous goods, where such storage occurs in containers with a combined capacity of 80 cubic meters or more but not exceeding 500 cubic meters.*	The plant will have dangerous good storage tanks with a combined capacity of approximately 480m^3. Dangerous goods will include lube oil, diesel and other hydrocarbons.
GNR 983 Activity 24	*"The development of a road:* *(ii) A road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 meters."*	The proposed project will require the development of a 1,2 km, 10 m wide access road to the development site and associated

Listed Activity		Describe the portion of the proposed project to which the applicable listed activity relates.
		infrastructure. Post-construction, the road will serve as a maintenance road
GNR 983 Activity 28	*Residential, mixed, retail, commercial, industrial, or institutional developments where such land was used for agriculture, game farming, equestrian purposes, or afforestation on or after 01 April 1998 and where such development:* *(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares or* *excluding where such land has already been developed for residential, mixed, retail, commercial, industrial, or institutional purposes.*	The proposed facility will be developed in an urban area that is currently zoned for agriculture. The footprint of the development and associated infrastructure will be approximately 20 hectares
GN R 983 Activity 47	*The expansion of facilities or infrastructure for the transmission and distribution of electricity where the expanded capacity will exceed 275 kilovolts and the development footprint will increase.*	The Eskom Khanyazwe substation is extended to accommodate the incoming 2x275kV and/or 2x132kV and 500MVA transformer.
Applicable activities listed under the EIA Regulations of 2014 as amended – Listing Notice 2		
GNR 984, Activity 2	*"The development of facilities or infrastructure for the generation of electricity from a non-renewable resource where the electricity output is 20 megawatts or more"*	The proposed project involves developing a gas power plant and associated infrastructure with a maximum output of 1000 MW.
GNR 984, Activity 6	*"The development of facilities or infrastructure for any process or activity which requires a permit or license or an amended permit or license in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent."*	The proposed gas-to-power plant development requires an Atmospheric Emission License (AEL) under the National Environmental Management: National Environmental Air Quality Act (Act 39 of 2004) (NEMA: QA) for the burning of natural gas.

Listed Activity		Describe the portion of the proposed project to which the applicable listed activity relates.
		The proposed project triggers water-use activities in terms of the NWA and requires a WUL before commencement.
GNR 984, Activity 7	*"The development and related operation of facilities or infrastructure for the bulk transportation of dangerous goods-* *i. in gas form, outside an industrial complex, using pipelines, exceeding 1 000 meters in length, with a throughput capacity of more than 700 tons per day".*	The proposed project entails the development of a gas pipeline from the existing ROMPCO gas pipeline to the power plant.
Applicable activities listed under the EIA Regulations of 2014 as amended – Listing Notice 3		
GNR 985, Activity 4 (i)	*The development of a road wider than 4 metres with a reserve of less than 13.5 metres.* *In Mpumalanga* (i) *(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas; or".*	The proposed project will require the development of a 1.2 km 10 m wide access road to the development site. These roads will also serve as service roads during the operational phase. The road is within 10km of the Kruger National Park.

It must be noted that the proposed project triggers listed NEM: AQA Section 21 listed activities detailed in Table 6. The Licencing Authority for the proposed project, as per Section 36(5)(d) of the National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004), highlights that the Minister is the licensing Authority and must perform the functions of the Licencing Authority (Table 6). Subsequently, in terms of the application for an Atmospheric Emission Licence (AEL), the two processes (EIA-AEL) are running concurrently, with only one public participation process, as elucidated in the National Air Quality Management Framework of South Africa.

Table 6: Listed Activities under Section 21 of NEM: AQA (GN No.893 of 22 November 2013) as amended

Listed Activity	Description
Category 1.4: Gas Combustion Installations, namely gas combustion used primarily for steam raising or electricity generation with a design capacity equal to or greater than 50MW heat input per unit, based on the lower calorific value of the fuel used.	The proposed gas plant will operate at 1000MW at its maximum capacity.
Category 1.5: Reciprocating Engines	The proposed project proposes using Internal Gas Combustion Engine technology.

The proposed project triggers listed activities under Section 21 of the NWA, as detailed in Table 7 below. The application has been lodged with the responsible authority, the DWS.

Table 7: Listed Activities under Section 21 of NWA, 1998

The National Water Act, 1998 (Act 36 of 1998) Activities	
Section 21 (a)	Boreholes
Section 21(b)	Water tanks will be required for the storage of clean water. The water will be used in the plant and for offices
Section 21 (c) *21(c) Impeding or diverting the flow of water in a watercourse; and*	The proposed development is close to a watercourse (river).
Section 21 (i) *21(i) Altering the Bed, Banks, Course, or Characteristics of a Water Course*	The proposed development is close to a watercourse (river).

The National Water Act, 1998 (Act 36 of 1998) Activities	
Section 21 (g) *Disposing of water in a manner that may detrimentally impact a water course.*	The proposed project requires a sewage treatment plant to treat sewage generating sludge estimated at approximately 15m^3 per annum.

7.1 DESCRIPTION OF STRUCTURES AND INFRASTRUCTURE

The project involves developing, constructing, and operating a 1000MW natural gas-fired power plant using Gas Engines (or Internal Combustion Engines (ICE)). After careful engineering consideration and research during the public consultation period, the applicant reviewed the capacity of the proposed power plant. Based on the outcomes of further research and engineering it was confirmed that this plant has the capabilities to generate up to 1000 MW (maximum of 1000MW). KFP will source gas from the Republic of Mozambique Pipeline Investments Company (ROMPCO), which has an existing gas pipeline that connects Mozambique's Pande Temane gas fields to Sasol's operations in South Africa, as well as several industrial and retail customers. Alternative sources of gas, if gas from the existing Pande Temane fields is not sufficient, may include imported LNG projects being developed in Matola, which will be able to provide additional gas into the ROMPCO pipeline.

The proposed development entails the following:

Power Plant: The power plant technology will be Internal Combustion Engines (ICE)). The generation activities will entail the development of the following primary activities:

- Development of the gas-to-power facility
- Operation at a maximum capacity of 1000 MW.

Connection to the ROMPCO: An approximately 500 m gas pipeline extension will be required to connect the power plant to the ROMPCO pipeline.

Connection to the Eskom Grid. This scope of work entails the construction of infrastructure to connect to the Eskom grid in line with Eskom's minimum requirements. KFP will be responsible for the construction, and Eskom will be responsible for the operation and maintenance of the proposed infrastructure. From the power plant, electricity will be evacuated through a double 275kV transmission line and/or a double 132kV transmission line, connecting to an expanded Eskom Khanyazwe Substation located within 500 m of the power plant. Subsequently, the project will include the following:

- Extension of a Busbar at the Eskom Khanyazwe substation; and
- Approximately 0.5km 2x 275kV powerline and/or 2x 132kV powerline will connect to the existing Eskom Khanyazwe 275/132kV substation to be expanded to accommodate the 500MVA transformer bay.

Road Access: An access road (temporary and permanent) will be constructed to link the proposed power station to the nearby existing road network. The current primary road to the proposed development site is a gravel road that connects to the N4. A new access point from the N4 has been proposed. This proposed access will tie in with the gravel road to access the power plant near the Eskom Khanyazwe substation.

- Developing an approximately 10m wide access road.

Associated Infrastructure: This will include

- Water and lube oil tanks for water and oil required for the engine's generation process and cooling;
- Water treatment plant to produce the required quality of water for the generation process;
- Building infrastructure, which will include, but not be limited to, plant operational and maintenance building, ablution facilities, offices, and
- Fencing to maximize the security of the plant.

Water allocation: Three water supply alternatives have been identified for the proposed project's construction and operational phases. The preferred technology alternative will inform the water requirements, and this will, in turn, inform which water supply source will likely be adequate. The options considered during the Scoping include municipal water supply, adjacent irrigation canal, and groundwater supply through a borehole. In order to have a minimal impact on the water supply in the area, the ICE technology has been identified as the preferred technology option primarily due to its very low water requirements. For this technology, a detailed water balance has been completed to ascertain the water requirements for the operational phase of the power station. It has also been confirmed that the source of water will primarily be a borehole. A geohydrological assessment has been commissioned to confirm the yields, with completion expected in August 2024.

Water treatment facility: Water for the power plant will be sourced from boreholes on the site. This water will require treatment to be suitable for use in the engine's cooling system and, depending on the quality of the water, for human consumption. A water treatment plant will form part of the plant equipment to produce this water. Water quality test results from several boreholes in the area considered 'bad quality' were obtained. These results were used to develop a concept water treatment plant that accounted for the worst possible scenario to understand what the most onerous water treatment plant design would entail.

- Should the borehole water quality be of poor quality, a reverse osmosis plant would be required to produce the treated water for the plant. This plant would produce brine and a softening filter cake that is 91% calcium carbonate as byproducts. Depending on the quality of the borehole water and the final water treatment, brine may be a hazardous waste.
- Should the borehole water quality be average or good, a reverse osmosis plant would not be required; only a softening plant would. In this case, no brine would be produced.
- The final design for the water treatment plant will be completed once the boreholes on the site have been drilled and the water quality has been tested.

Wastewater Management: the management of wastewater on-site will entail:

- Water treatment plant: Byproducts from the water treatment plant will be stored on-site and disposed of by a specialist contractor. Depending on borehole water quality and the water treatment plant process, up to 3200 m^3 of brine could be produced per year.
- Oily water: Any area where water used for floor washing could become oil-contaminated will be bunded. This water will be channelled to sumps, where it will be pumped to an oily-water storage tank. An oil filtration system

will then separate the oil from the water. The removed oil will be stored and removed from the site by a specialist contractor. The clean water will be discharged into the stormwater system.

- Sewage: An on-site sewage plant will be used on the plant due to the lack of a municipal system in the area. A package solution is intended that would be required to be de-sludged sand disposed accordingly. This sludge would be classified as a hazardous material and would be removed by a specialist contractor. Volumes of around 15m^3 per year are anticipated.
- Stormwater: The site will include a stormwater system that channels rainwater to a dam. The stormwater system and dam size will be determined during the detailed design of the plant.

Waste Storage Facility: The plant will generate hazardous and general waste, which will be stored at the waste storage facility. The facility will be designed and operated in accordance with the norms and standards for waste storage (GN R926 OF 2013).

The following is the list of the proposed activities, including the dimensions of their footprint, capacity, and exact coordinates presented in Table 8.

Table 8: Primary infrastructure

Project component	Area/Length/Size	Servitude	Purpose
Power Plant	20 hectare	n/a	Generation of electricity using Internal Gas Combustion Engines (ICE)
Embedded gas pipeline	500 m	36 m	Transportation of gas from the ROMPCO pipeline to the power plant.
2x 275Kv and/or 132kV Overhead transmission line	500	2x 47 m	Transmission of electricity to the existing Eskom Khanyazwe substation.
Access/Service road	1.2 km	10 m	Access to site.
Construction access road	3 km	10m	Access to the site for construction
Extension of the existing Eskom Khanyazwe substation	1000m^2	n/a	Extension of the substation to accommodate the incoming 2x275kV and/or 2x132kV and 500MVA transformer.
Water treatment Plant	400m^2	n/a	Treatment of borehole water for use in the cooling system
Sewage Treatment Plant	n/a	n/a	Treatment of sewage.
Waste Storage Facility		n/a	Storage of hazardous and general waste.

The power plant will provide a mid-merit power profile to the national grid. It will be designed to operate for 25 years, after which, subject to prevailing circumstances, it will either be decommissioned or refurbished and extended. If decommissioned, the land where the power plant is located will undergo an extensive rehabilitation project, which will see the removal of all power plant equipment and reinstatement of the land back to its original purpose, sugar cane farming

8 MAP AT AN APPROPRIATE SCALE WHICH SUPERIMPOSES THE PROPOSED ACTIVITY, ITS ASSOCIATED STRUCTURES, AND INFRASTRUCTURE ON THE ENVIRONMENTAL SENSITIVITIES OF THE PREFERRED SITE, INDICATING ANY AREAS THAT SHOULD BE AVOIDED, INCLUDING BUFFERS

This section outlines parts of the socio-economic and biophysical environment likely to be affected during the proposed development's construction, operational, or decommissioning phase. Based on the description of the project and the knowledge of the existing environment, the potential interactions between the project and the environment are presented. Moreover, the project's potential impacts on the human environment, socio-economic conditions, and physical and cultural resources are also presented. The sensitivity maps below provide an overview of the sensitivity of the proposed study area in relation to the proposed activities.

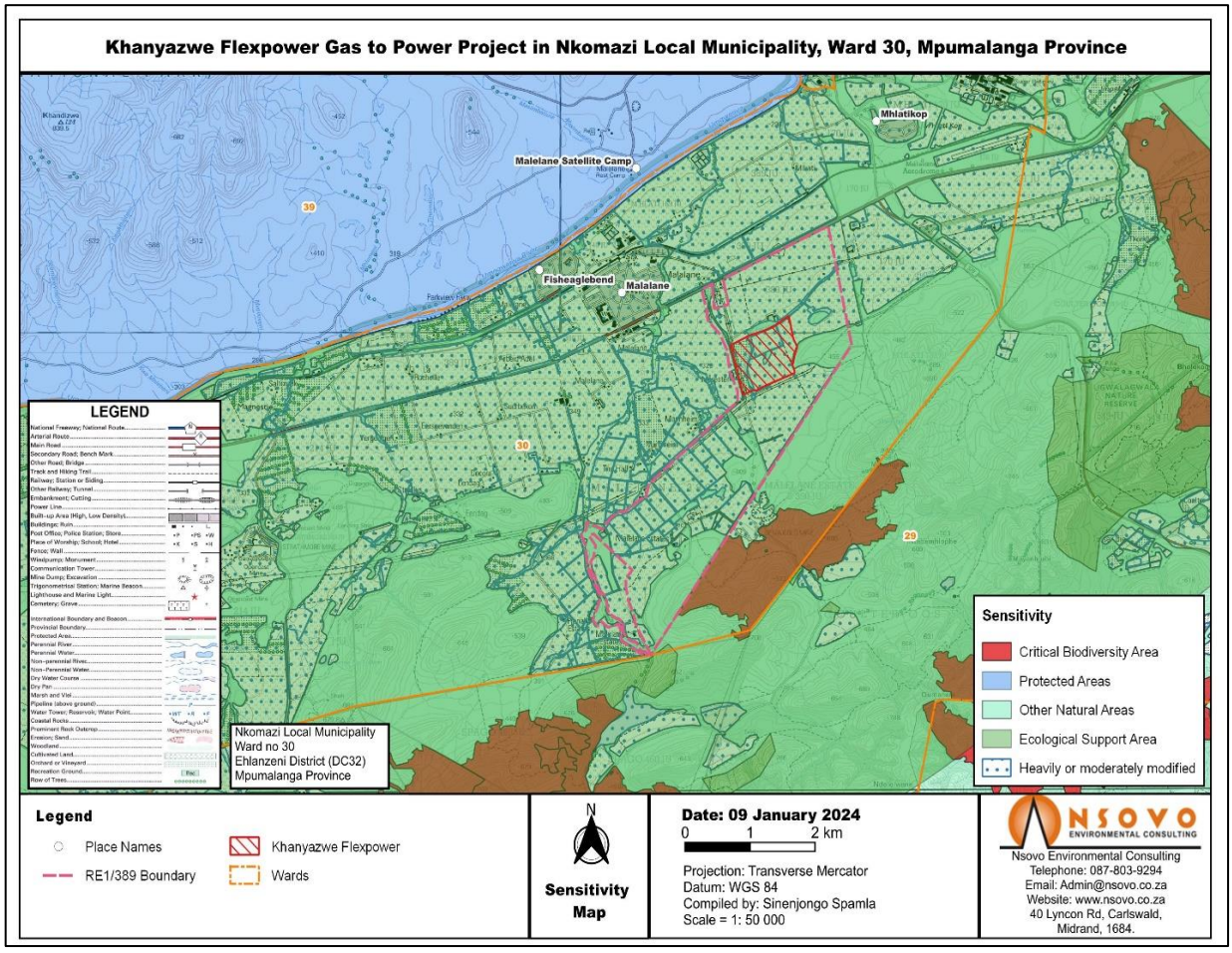

Figure 2: Sensitivity Map (A) of the area earmarked for the proposed development.

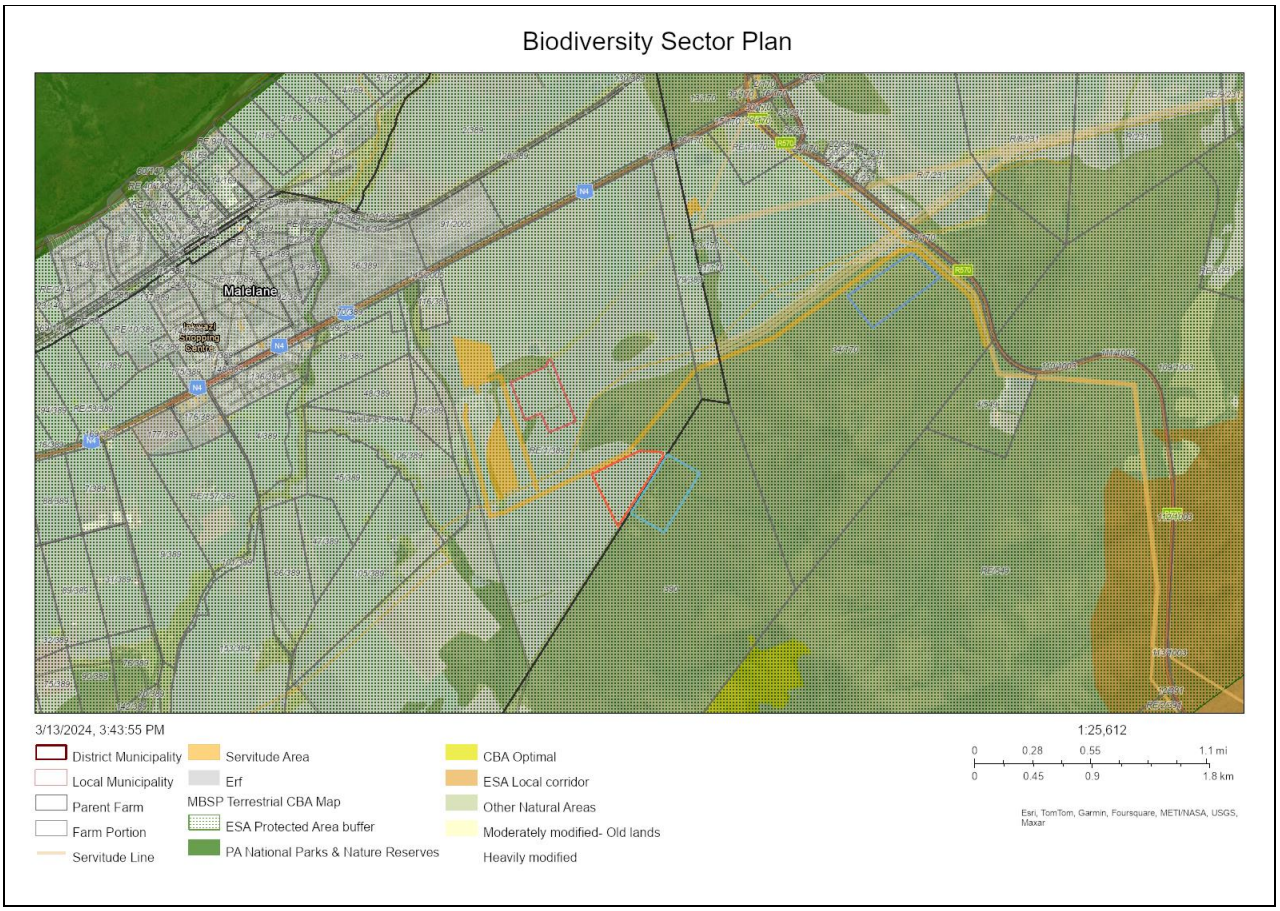

Figure 3: Sensitivity Map (B) of the area earmarked for the proposed development.

9 A DESCRIPTION OF THE IMPACT MANAGEMENT OUTCOMES, INCLUDING MANAGEMENT STATEMENTS, IDENTIFYING THE IMPACTS AND RISKS THAT NEED TO BE AVOIDED, MANAGED AND MITIGATED AS IDENTIFIED THROUGH THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR ALL PHASES IMPACT MANAGEMENT OUTCOMES

Table 9: Summary of potential Environmental impacts.

Aspect	Impact	Impact Description	Mitigation Measures
Employment	Positive Impact -Not mitigative require. Measure to enhance are proposed.	Providing employment opportunities during the construction and operational phases. **Direct Employment:** The construction phase will create thousands of jobs, offering immediate employment for skilled and unskilled workers. Once operational, the power plant will require a permanent workforce, including technical, administrative, and maintenance roles. **Indirect Employment:** The project will also generate indirect employment opportunities through the demand for goods and services related to the construction and maintenance of the power plant, benefiting local businesses and service providers. **Skills Development:** Training and capacity-building programs associated with the project will enhance the local workforce's skills, improve employability, and support long-term economic resilience. This focus on skills development aligns with broader regional goals of enhancing human capital and reducing poverty.	• The proposed Khanyazwe Flexpower Project site is an active sugarcane farm employing about 80 farm workers. The project's development will necessitate repurposing this agricultural land, leading to the loss of these jobs. A strategy should be developed to mitigate the impact, including re-employment opportunities within the project, training programs for new roles, and compensation packages. • Engaging with the affected workers is essential to address their concerns and explore alternative employment opportunities, ensuring their continued economic stability and contribution to the local community. • The project also manages local communities' expectations regarding job opportunities, ensuring transparency and inclusivity throughout employment. Recognising the importance of community engagement and the high demand

Aspect	Impact	Impact Description	Mitigation Measures
			for local jobs, the project actively communicates the nature, scope, and timeline of employment opportunities to the residents. This involves setting realistic expectations about the types of jobs available, the skills required, and the duration of employment, whether during the construction or operational phases. • KFP must promote the creation of employment opportunities for women and youth. The positions reserved for the youth and women may only be filled with persons outside of these categories if it can be demonstrated that no suitable persons can be employed.
Socio-economic Benefit	Positive	The Khanyazwe Flexpower Project offers numerous economic benefits and opportunities that are poised to drive substantial growth and development in the local and regional economies of Malelane, the Nkomazi Local Municipality, and the broader Mpumalanga Province. By creating jobs, bolstering local enterprises, enhancing infrastructure, and encouraging economic diversification, the project is set to foster a more prosperous and resilient community. The project aligns with broader regional and national development goals by stimulating	• Implement local procurement policies to support local businesses and create a resilient supply chain. • Invest in economic diversification initiatives, such as supporting the development of agri-business, tourism, and renewable energy projects.

Aspect	Impact	Impact Description	Mitigation Measures
		economic growth, improving infrastructure, and promoting environmental sustainability. Its comprehensive approach to economic and social development ensures that the benefits are widely shared, paving the way for a more prosperous, resilient, and inclusive future for the local community and the broader region.	
Biodiversity	Negative	The PAOI was found to be post harvesting and in the process of burning. Based on the criteria provided in section 1.4.3 of this report, the habitat within the Project Area was assigned a sensitivity category, i.e., a SEI category. The Project Area was categorised as possessing a single habitat 'Very Low' SEI. This is owing to the disturbed nature of the immediate footprint.	• Areas to be developed/disturbed, including transmission lines, should be specifically demarcated so that only the demarcated areas will be impacted during the construction/activity phase. • Areas of indigenous vegetation outside the direct project footprint should not be fragmented or disturbed further. • The construction area must be fenced off and no ingress into other areas allowed. • Roads and Transmission lines construction must only be considered in transformed habitat. • Adhering to existing roads and servitudes. • An Invasive Alien Plant Management Plan must be compiled and implemented. This should regularly be updated to reflect the annual changed in IAP composition.

Aspect	Impact	Impact Description	Mitigation Measures
			• Areas that have been disturbed during construction but will not undergo development must be revegetated with indigenous vegetation dominant in the area. • Use existing access routes as much as possible before considering new routes. Any selected "new" route must be authorized, minimizing disturbances to undisturbed areas.
Avifauna	Negative	**Pre-construction / Construction Phases** Activities associated with the pre-construction and construction phases include the following: • Vegetation clearance of the site. **Potential impacts to avifauna during the pre-/and construction phases** include the following: • Destruction of indigenous flora and habitats (watercourses) during site establishment; • Potential loss of a riparian vegetation/watercourses; • Loss/displacement of avifauna species potentially present on site; • Disturbance of local avifauna populations due to construction activities; and • Loss of avifauna habitat due to vegetation clearance. **Operational Phase**	• Power line marking will be required to mitigate the collision impact since the project site contains dams and water bodies. • Construction activity should be restricted to the immediate footprint of the infrastructure. • Access to the remainder of the site should be strictly controlled to prevent unnecessary disturbance of avifaunal species. • Furthermore, environmentally good practices should be applied, such as ensuring strict control of staff, vehicles, and machinery on site and limiting the creation of new roads as far as possible. • To minimize the impacts of collisions of avifaunal perspective, it is therefore recommended from an avifaunal perspective that a "bird-friendly"

Aspect	Impact	Impact Description	Mitigation Measures
		Activities associated with the operational phase include the following: • Vegetation management activities; and • Avifauna management activities. Potential impacts associated with the operational phase, include the following: • Collision of birds with overhead cables; • Electrocution of birds; • Disturbance of local faunal communities; and • Loss of habitat due to operational activities.	pylon design be used, which poses little electrocution risk. • Regarding habitat destruction, the recommendations of the ecological and botanical specialist studies must be strictly implemented, especially regarding limiting the construction footprint and rehabilitation of disturbed areas. • Should any nests or breeding sites be found during construction, suitable recommendations should be provided, and the EMPr must be amended. Mitigation measures must be enforced and implemented to reduce any potential direct and acute impact on avifaunal species.
Ecotourism	Negative	Outline Landscape (2024) concluded that the Khanyazwe Flexpower Plant's impact on eco-tourism has been evaluated and is regarded as moderate. The KFP is not directly in sight of any eco-tourism establishment. Eco-tourism developments rely on wild, unspoilt landscapes, and visitors do not want their views to be obstructed by industrial, large-scale powerline structures. The guesthouses close to the site are in suburban settings. Important views of the lodges and estates	Natural screening should be created at ecotourism establishments, which may have their views impacted on by the construction or operational phases of the project. Endemic plants should be salvaged, if possible, where areas are going to be disturbed through the destruction of vegetation, for example, the establishment of the construction camp. They should be kept in a controlled environment, such as a

Aspect	Impact	Impact Description	Mitigation Measures
		to the north on the banks of the Crocodile River are focused to the north into the Kruger National Park. Tourists may intermittently be exposed to the KFP, especially when travelling to their destinations. The views from the Malelane Satellite Camp, within the Kruger National Park, are towards the south of Malelane town. Malelane has industries, including sugar mills, which will mitigate the presence of the new KFP plant. The severity of the landscape impact on the development of the infrastructure is expected to be moderate. All surface activities will be visible from a certain distance from the site; however, due to the existing industrial developments and Khanyazwe Substation, the visual impact on tourists is expected to be less significant. The *severity of the landscape impact* on the development of the infrastructure is expected to be moderate. All surface activities will be visible from a certain distance from the site; however, due to the existing industrial developments and Khanyazwe Substation, the visual impact on tourists is expected to be less significant. Tourists travelling to the Kruger National Park and Mozambique will be affected by the visual intrusion	nursery, for future re-planting in the disturbed areas as a measure of rehabilitation. Establish an ecotourism/conservation forum for the project by engaging with all tourism associations (local and provincial) to ensure that ongoing communication is provided to all role-players and to ensure that all ecotourism products are aware of the construction timeframes. This will enable ecotourism destinations to plan accordingly in terms of occupancies and potential down times. Provide a dedicated contact point to provide an opportunity for product owners to obtain information on the project and provide information on impacts or problems on an ongoing basis. A response structure should also be set up to support this contact point. This will enable localized impacts to be mitigated more effectively and efficiently. All impacts on fauna or flora within high conservation/ecotourism value land should be rehabilitated immediately to a completely natural state. This should be done by managing removed vegetation in a manner that can be re-planted.

Aspect	Impact	Impact Description	Mitigation Measures
		when passing through the study area. Although it is difficult to pinpoint particular locations in the study area that are of specific value, the areas next to the roads will be most important. The industrial and agricultural landscape of that stretch of the N4, with large existing developments, will lessen the visual impact, as the association of the area is industrial in nature.	Compile booklets that interpret the project, where the power is going, and what value the project is adding to the local and provincial economy. Very often, ecotourists see the value in a development project and are willing to accept the associated impact on the environment.
Soil and Land Capability	Agriculture and Soils	The loss of topsoil in South Africa is a national concern, and thus, erosion control should be taken seriously. Soil erosion may occur during the construction phase due to: • Excavations, particularly on steep slopes • Ineffective stormwater management • Excessive use of gravel roads • Use of heavy machinery or vehicles Construction activities may lead to the compaction of disturbed soils; further, the exposure of the soil to environmental factors increases the likelihood of erosion. Removing surface vegetation will cause exposed soil conditions where rainfall and high winds can cause mechanical erosion. Rainfall and inadequate drainage systems would lead to	• If adequate soil erosion measures are implemented during the construction phase of the proposed activity, this impact can be deemed low significance. Where soils are highly erodible, adequate measures must be implemented to prevent undue soil erosion.

Aspect	Impact	Impact Description	Mitigation Measures
		sediments washing down into wetlands and rivers, causing sedimentation. In addition, hardened surfaces and bare areas are likely to increase surface runoff velocities and peak flows received by riparian habitats and wetlands.	
Agriculture	Negative	90% of the proposed sites are currently sugar cane farming; as such, the proposed activity will reduce the area used for agricultural purposes, resulting in a potential loss of income for the farmers. The Khanyazwe Flexpower Project in Malelane within the Nkomazi Local Municipality of Mpumalanga Province will significantly impact local agriculture. The project site is currently used for sugarcane farming, and its development will bring about changes that can affect both the local agricultural economy and the livelihoods of those involved in farming activities. Displacement of Agricultural Activities- The project site's current use as an active sugarcane farm means that its development into a power plant will displace existing agricultural activities. This displacement will directly affect the cultivation of crops and the associated economic activities that support the local farming community. This will contribute to, amongst others	• Engage with local communities and stakeholders throughout the project's development to gather input, address concerns, and ensure the project aligns with community needs and priorities. • Implement policies prioritising hiring local residents for construction and operational roles. • Establish training programs to equip local workers with the skills needed for the project. • Develop procurement policies that prioritise sourcing goods and services from local suppliers. • Work with local suppliers to build their capacity to meet the project's needs. • Create programs that offer alternative livelihoods for individuals affected by the displacement of agricultural activities, such as training in new skills and support for starting new businesses.

Aspect	Impact	Impact Description	Mitigation Measures
		Job Loss: The cessation of farming activities will result in the loss of agricultural jobs, impacting approximately 80 farmworkers who rely on these positions for their livelihoods. Identified impacts include **Economic Disruption**: The local economy, which benefits from the sale and processing of sugarcane, will experience a disruption, potentially leading to decreased economic activity in the agricultural sector. **Loss of Agricultural Land:** The conversion of agricultural land for industrial use will reduce the available farmland, which could impact local food production and the region's agricultural output. Although sugarcane is not a staple food, reducing agricultural land could have broader implications for food security if it leads to a shift in land use priorities away from food crops. **Economic Diversification and Support for Agri-Business**- The project provides an opportunity to diversify the local economy by introducing industrial activities alongside traditional agriculture. This can reduce the region's economic dependence on agriculture and create new economic opportunities.	

Aspect	Impact	Impact Description	Mitigation Measures
		Socio-Economic Impact on Farming Communities— The project may have a socio-economic impact on farming communities, including shifts in employment patterns and changes in land use.	
Development	Positive	The Project has the potential to contribute to community infrastructure, including enhancements to roads, schools, and healthcare facilities through socio-economic development contributions. This contribution is envisioned to result in improved living conditions and increased access to essential services for the local population. This will include **Energy Infrastructure**: Constructing a modern natural gas-fired power plant will enhance the reliability and stability of the local electricity supply, supporting residential, commercial, and industrial energy needs. **Energy Access and Affordability** The Khanyazwe Flexpower Project is poised to significantly improve energy access and affordability in Malelane, the Nkomazi Local Municipality, and the broader Mpumalanga Province. The project addresses critical energy challenges by developing a reliable and cost-effective natural gas-fired power	• Establish a continuous dialogue with local communities and stakeholders to gather input, address concerns, and build trust. • Ensure community members are involved in decision-making, particularly land use changes and resettlement planning.

Aspect	Impact	Impact Description	Mitigation Measures
		plant, ensuring that more residents and businesses benefit from stable and affordable electricity. **Regional Integration and Development** The proposed project will contribute to regional integration and development by enhancing energy security in the Nkomazi Local Municipality and establishing it as a key energy hub. It will also boost regional trade and investment by improving infrastructure along strategic routes like the Maputo Development Corridor, promoting economic growth and cooperation. Its impact extends beyond local benefits, fostering interconnected economies and supporting broader socio-economic development goals across Mpumalanga Province and beyond.	
Community Health and safety	Negative	The construction and operation of Flexpower can pose potential risks to community health and safety, especially concerning the transport, storage, use, and disposal of hazardous materials. Understanding and assessing these concerns, our approach incorporates stringent safety standards and health protocols to mitigate risks, ensuring that the community's well-being remains a priority. Construction-Related Risks	The following safety measures should be in place. • Install advanced gas leak detection systems that continuously monitor for the presence of gas and automatically shut down equipment if a leak is detected. • Equip the plant with fire suppression systems, such as water sprinklers, foam systems, and fire extinguishers, strategically placed throughout the facility.

Aspect	Impact	Impact Description	Mitigation Measures
		•The **construction phase** of the Khanyazwe Flexpower Project is likely to pose several health risks to the local community. These risks include exposure to dust, noise pollution, and potential contaminants from construction materials and activities. This will include o Increased dust and particulate matter can lead to respiratory problems, particularly in vulnerable populations such as children and older people. o Elevated noise levels from machinery and construction activities can cause stress, hearing loss, and sleep disturbances. o Potential exposure to hazardous chemicals used in construction The influx of construction vehicles and increased traffic around the project site can lead to higher risks of road accidents and pose safety concerns for residents and other motorists, especially on the N4. Natural gas is highly flammable, and leaks or uncontrolled releases can lead to fires or explosions. This poses significant risks to plant personnel and surrounding communities.	• Develop and regularly update an emergency response plan that includes evacuation procedures, emergency contact information, and drills to ensure readiness in case of an incident. Gas power plants often require storing and handling hazardous materials, such as natural gas, chemicals for water treatment, and lubricants. • Store hazardous materials in designated, well-ventilated areas with secondary containment to prevent leaks and spills • Maintain updated MSDS for all hazardous materials on-site and ensure that all personnel know the safe handling procedures. • Equip the plant with spill response kits and train staff to use them effectively to contain and clean up hazardous material spills. Gas power plants operate under high pressures, particularly in boilers and turbines. A failure in these systems can result in dangerous explosions or equipment damage. • Pressure relief valves should be installed to prevent over-pressurization and safely vent excess pressure.

Aspect	Impact	Impact Description	Mitigation Measures
			• Conduct routine inspections and maintenance of high-pressure systems to identify and address potential issues before they become critical. • Use real-time monitoring systems to track pressure levels and other critical parameters, enabling prompt response to any abnormalities. The generation and transmission involve high voltages, which pose risks of electrical shock, arc flashes, and fires. • Implement a Lockout/Tagout (LOTO) program to ensure equipment is de-energized and cannot be accidentally restarted during maintenance. • Equip workers with arc flash protective gear and ensure that electrical systems are designed and maintained to minimise the risk of arc flashes. Ensure all electrical equipment is properly grounded and bonded to prevent electrical shocks and fires.
Traffic	Negative	During the construction phase, increased heavy vehicle traffic will be expected. Without management, such increased traffic loads may negatively impact existing traffic flow. Further, unmanaged construction vehicles may decrease road safety for other road users, and uncontrolled movement of construction vehicles may result in	• The delivery of construction material and equipment should be limited to hours outside peak traffic times (including weekends) prevailing on the surrounding roads where possible; • Existing access roads must be used; • Delivery vehicles must comply with all traffic laws and bylaws;

Aspect	Impact	Impact Description	Mitigation Measures
		unnecessary environmental impacts through vegetation and habitat destruction. The proposed site is adjacent to the N4, a major road leading to the Mozambican border. A new access road to the site will be constructed from the N4. Without mitigation, this impact may be high; however, implementation of mitigation measures may result in medium/low significance.	• Inform communities of planned construction activities affecting vehicle/ pedestrian traffic.
Heritage	Negative	According to the heritage report dated 2024, the entire site earmarked for the proposed development is degraded from current land uses such as access road, Eskom distribution power line, Eskom substation, and sugarcane cultivation. No evidence suggests any potential for recovering archaeological remains during earth-moving activities. There is an established associated infrastructure development, roads, and other associated infrastructures across the entire project receiving area. The field survey identified no cultural heritage or archaeological resources within an area earmarked for the proposed development. Negative impacts range from partial to total destruction of surface and under-surface movable/immovable relics during	• The proposed development should be approved to proceed as planned under the observation that the proposed dimensions of the gas plant do not extend beyond the study area. • The footprint impact of the proposed development and associated infrastructure should be kept to minimal to limit the possibility of encountering chance finds. • There were no burial sites (graves) identified during the field investigation. However, should unidentified graves and burial sites be discovered during the cause of construction activities, all construction activities should cease. The site must be barricaded, and SAHRA/MPHRA or the professional archaeologist must be informed.

Aspect	Impact	Impact Description	Mitigation Measures
		grubbing and preparation of foundations for buildings and other structures.	• Should any unmarked burials be exposed during construction, affected families must be trekked and consulted, and relevant rescue/relocation permits must be obtained from SAHRA and the Mpumalanga Department of Health before any grave relocation can take place. Furthermore, a professional archaeologist must be retained to oversee the relocation process by following the National Heritage Resources Act 25 of 1999. • Should chance archaeological materials or human burial remains be exposed subsurface, construction work on any section of the development laydown sites, work should cease on the affected area, and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in construction scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the PHRA and NHRA reg. • If archaeological or other heritage relics deemed of high significance are found when physical

Aspect	Impact	Impact Description	Mitigation Measures
			works commence, heritage authorities will be advised immediately, and a heritage specialist will be called to attend.
Visual Impact	Negative	The visibility analyses will consider worst-case scenarios, using line-of-sight based on topography. Within the receiving environment, specific viewers (visual receptors) experience different views of the visual resource, such as the proposed plant, and value it differently. Viewers will be affected because of the alterations of the views due to the proposed development (power plant facility and 275 kV and/or 132kV transmission line). The visual receptors will include tourists who visit the Kruger National Park, the residents of Malelane, as well as motorists who travel between South Africa and Mozambique via the N4.	• Keep the construction sites and camps neat, clean, and organised to portray a tidy appearance. • Screen the construction camp and lay-down areas; Rehabilitate disturbed areas around pylons as soon as possible after construction. This should be done to restrict extended periods of exposed soil. • Plant fast-growing endemic trees along the facility's boundary, especially along the N4. The trees will, with time, create a screen and increase the biodiversity of the area. • Locate access routes to limit modification to the topography and to avoid the removal of established vegetation. • Utilise existing screening features such as dense vegetation stands or topographical features to place the construction camps and lay-down yards out of the view of sensitivity visual receptors.
Noise	Negative	Noise-generating activities on site include the following: • Earthworks; • Delivery of building material;	• The following mitigation measures must be considered: • The following aspects are addressed in the acoustical design of power plant:

Aspect	Impact	Impact Description	Mitigation Measures
		• Civil construction activities; • Earth drilling; • TLB activities; • Foundations and pouring of concrete. This noise is expected to impact several receptors. In addition, the facility is near the CBD and a residential area, which may have an impact if not well managed. • During construction, an increase in noise is expected as these activities will generate noise of medium significance without mitigation. If the mitigations are adhered to, the noise impact will be manageable and of low significance.	○ Optimising the plant layout, selection, and location of noise-critical components. ○ Attenuation of the charge air intake and exhaust outlet. ○ Engine cooling system: type and location of the radiator or other cooling equipment. ○ Plant ventilation system: ventilation air intake, fan-generated noise, outlet noise emission. ○ Power plant building design: optimal wall structures. • Manage speed limits of vehicles and ensure all vehicles are maintained to reduce noise. • Given that the impact is anticipated to be low during the operational phase, monitoring is proposed if there are noise complaints or if people in the future settle closer than 2,000 m from the power plant. • Ensure that all construction equipment is well serviced as per the manufacturer's manual throughout the construction phase. • The Noise Control Regulations (2013) requirements must be adhered to.
Air quality	Negligible	Decreased ambient air quality. The scale of the impact is related to whether the predicted ambient	• Current industry-standard techniques should be maintained and supplemented with

Aspect	Impact	Impact Description	Mitigation Measures
		concentrations of the pollutants exceed the limit values of the NAAQS in sensitive areas, i.e., residential or non-industrial areas. The incremental impact of NO2 during normal operation of ICE technology is expected to be negligible at a cluster height of 30 - and 50 meters. The incremental impact of PM10, SO2 and VOC during normal operation of either CCGT or ICE technology is expected to be negligible.	administrative control measures to maintain the residual impact at the nearest sensitive receivers at current background levels. • Controlled emissions can be effectively mitigated by applying the best available industrial control measures and sound environmental management principles. A reduction in emissions of up to 98% can be achieved. • Continuous monitoring of ambient PM10, SO2, NO2, and VOC concentrations for a minimum period of one (1) year before commissioning of the plant and in accordance with the AEL requirements, thereafter, should be performed. For background monitoring, one monitoring station placed in the main impact area of the future plant should suffice. Background monitoring data will be critical to determine the proportional impact of the plant in the cumulative setting. • Ambient monitoring should be used in combination with modelling and emission inventory to assess the effectiveness of control measures at source and receiver throughout the

Aspect	Impact	Impact Description	Mitigation Measures
			project's life. It will also contribute to open communication with all stakeholders. **Technical** • The engines must be optimized to achieve the best economic and environmental performance. • Develop and implement servicing programs for all operational components of the facility. • Stocking critical components to ensure the availability of spares in the event of mechanical faults.
Climate change impact	Negative	• Construction operations will probably include mobile and stationary diesel combustion emissions for construction operations. • KFP Power Plant's GHG emissions include Scope 1, Scope 2, and Scope 3 emissions. Scope 1 emissions include emissions from stationary combustion of natural gas and diesel. Scope 2 emissions consist of emissions from purchased electricity. Scope 3 includes emissions from mobile diesel combustion contracted to third-party suppliers. • The magnitude of the impact of GHG emissions from the construction operations was estimated to be negligible.	• Although mitigation will not alter the impacts of GHG emissions in terms of the extent, duration or probability of the impact, the intensity of the impact can be reduced, notably by reducing the quantity of GHG emissions. • It is important that the plant's thermal efficiency is maximized throughout the life of the plant to reduce the gas consumption and, therefore, GHG emissions per unit of electricity (i.e., kWh or MWh) generated. The plant should seek to identify specific measures that can be implemented to maximise thermal efficiency and therefore minimise GHG intensity over time.

Aspect	Impact	Impact Description	Mitigation Measures
		• The magnitude of GHG emissions from the KFP Power Plant's operations (2 524 378.66 tCO2e) is considered **Very High,** as GHG emissions are greater than 1 000 000 tCO2e annually. • The impact of GHG emissions from the KFP Power Plant was **rated High** with or without mitigation measures. • The project's GHG emissions will contribute to the local Energy Sector and to the global energy related GHG emissions. The project's GHG emissions will likely contribute to anthropogenic climate change, which is likely to be accelerated and extended as GHG emissions accumulate in the atmosphere. Based on the climate threat outline, potential climate risks include increased temperature, reduced rainfall, extreme events, and wind impacts. Increased temperature and heat waves can pose a health risk to employees, influence productivity, and reduce plant efficiencies and available generation capacity.	• While noting that any reduction in the operating time or load factor (i.e., annual power generation in MWh) is likely to result in decreased total annual emissions from the plant, such changes to cycling philosophies could have an adverse impact on thermal efficiency and GHG intensity per MWh generated because of increased start-ups and wear and tear on the plant. As such, the potential impact of future changes in operating philosophy should be investigated and managed through upgrades to plant hardware and modifications to operating practices, as applicable. • Measuring GHG emissions on an annual basis (2), which will require data on the total amount of gas consumed, its chemical properties, GHG emissions factor; and the consumption of any other fuels such as LPG for the black starts; and plant heat rate / thermal efficiency should be closely monitored over time as this is closely correlated to the GHG intensity of the plant. • Setting short-, medium--, and long-term targets for maximizing and maintaining heat rate / thermal efficiency and GHG intensity (CO2e per

Aspect	Impact	Impact Description	Mitigation Measures
			MWh generated) over time, against which performance can be assessed. • Allocating responsibility to key individuals for managing and reporting on the GHG performance of the plant. • Communicating the Plan, including its key objective and any actions being taken, to staff working at the plant to ensure buy-in. • Encourage employee participation in the GHG management plan, including contributing ideas relating to improvement opportunities. • Reporting progress over time with respect to annual gas consumption and GHG emissions, GHG reductions/heat rate improvements achieved, and progress against targets set.
Water consumption and site efficiency	Negative	With radiator cooling, which is the most common cooling method, the cooling water is circulated in a closed circuit. There are no waste water results from the process. Any contaminated water, for instance, water used for cleaning the equipment, is collected in a tank.	• Zero discharge approach must be adopted. • Ensure that the site develops a water conservation strategy from the on-set. • Implement recycling initiatives.

Aspect	Impact	Impact Description	Mitigation Measures
		The process water consumption when using radiator cooling is negligible (less than 4 liters per produced MWhe), and no de-mineralized water is needed.	

9.1 IMPACT MANAGEMENT OUTCOMES

Table 10 below outlines the range of approaches to be undertaken to manage the potential environmental impacts / risk of the project activities throughout the project cycle.

Table 10: Approach to Impact Management

Impact Management	Description
Avoidance	Avoiding activities that could result in adverse impacts and/or resources or areas considered sensitive.
Prevention	Preventing the occurrence of negative environmental impacts and/or preventing such an occurrence having negative impacts.
Preservation	Preventing any future actions that might adversely affect an environmental resource.
Minimisation	Limiting or reducing the degree, extent, magnitude or duration of adverse impacts
Mitigation	Measures taken to minimise adverse impacts on the environment.
Enhancement	Magnifying and/or improving the positive effects or benefits of a project.
Rehabilitation	Repairing affected resources, such as natural habitats or water resources.
Restoration	Restoring affected resources to an earlier (possibly more stable and productive) state, typically 'background' or 'pristine' condition. These resources may include soils and biodiversity.

Following a detailed description of the impact management approaches, this section provides a description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated throughout all phases.

9.2 PRE-CONSTRUCTION PHASE

Table 11: Pre-construction Objectives

Aspect	Objective
Social	• To increase local employment. • To reduce the impacts on local cultural sense of place. • To minimise social pathogens and unhealthy behavior. • Protection of archaeological, historical and any other site or land considered being of cultural value.

Soil	• To prevent erosion, sedimentation, surface water contamination and reduction in water quality. • To minimise land use alternation and soil erosion.
Biodiversity	• To ensure adequate planning to prevent habitat destruction. • To prevent a significant increase in alien invasive species abundance and spread and to prevent habitat fragmentation with specific reference to the proposed activities. • To conserve species of conservational concern and reduce impacts arising from insufficient rehabilitation. • To minimise the impact on plants of conservation concern through implementation of search and rescue according to the plan.
Sensitive Environments	• To prevent the destruction of the habitats and conserve the biological structure

9.3 CONSTRUCTION PHASE

Table 12: Construction Objectives

Aspect	Objective
Social	• To protect the socio-economic environment of local land users. • To improve the local economy through utilisation of local resources. • To prevent destruction of graves. • To conserve heritage artefacts and buildings. • To minimise impacts on infrastructure and land occupiers during blasting activities.
Water	• To prevent groundwater contamination. • To protect surface water flow, water quality and associated pollution. • To conserve water usage during construction. • To ensure adequate clean and dirty water separation. • To prevent sedimentation of local streams as a result of erosion. • To minimise loss of water to the catchment.
Air Quality	• To minimise emissions to the atmosphere affecting employees, local land users, and climate change. • To reduce greenhouse gas emissions.
Soil	• To prevent soil contamination. • To ensure rehabilitation is successful. • To minimise loss of land capability and enhance rehabilitation.

Aspect	Objective
Biodiversity	• To prevent a significant increase in alien invasive species abundance and spread. • To minimise the loss of floral habitat. • To minimise loss of floral biodiversity. • To protect floral habitats and diversity. • To reduce the impacts on faunal ecological integrity through curbing erosion and poaching. • To minimise cumulative loss of natural vegetation in the region.
Heritage	• To protect heritage resources, they should be uncovered during construction.
Sensitive Environments	• To protect hydrological functioning of the river systems.

9.4 Operational Phase

Table 13: Operation Objectives

Aspect	Objective
Social	• Improve the local financial capital for local communities and landowners. • Protect the social – economic environment of local land users. • Prevent negative social impacts on the health and safety of land users and employees. • Prevent destruction of graves.
Water	• Prevent groundwater contamination. • Protect surface water flow, water quality and associated pollution. • Ensure effective and reliable clean and dirty water separation. • Prevent water wastage and impact on water resources. • Prevent siltation of watercourses.
Air Quality	• To minimize atmospheric pollution. • Reduce Greenhouse gas emissions.
Soil	• Prevent soil contamination and ensure rehabilitation of contamination. • Minimise loss of soil resources. • Prevent soil sterilization and contamination. • To reduce soil pollution and degradation. • To reduce sediment movement offsite. • To prevent compaction of soils within the processing plant.
Biodiversity	• To prevent a significant increase in alien invasive species abundance and spread.

Aspect	Objective
	• To protect floral habitats and diversity.
Hydrogeology	• To prevent reduction in groundwater quantity.
Sensitive Environment	• To protect riparian habitat and riparian

10 APPLICABLE LEGISLATION

A description of applicable legislation is provided herein in accordance with the requirement of Appendix 2 Section 1(e) of the EIA Regulations. Table 14 below lists and describes the Acts and legislations applicable to the proposed project, which are pertinent to the proposed development. Municipal policies, plans, and by-laws, as well as Khanyazwe Flexpower policies and best practices, were considered during the compilation of the CEMPr. The list of legislation applicable to the project is not an exhaustive analysis; however, it provides a guideline to the relevant aspects of each Act.

Table 14: Legislation pertaining to the proposed project

Legislation	Administering Authority:	Summary	Applicability
The Constitution of the Republic of South Africa (Act 108 of 1996)	All Spheres of Government	The Constitution is the supreme law of the Republic of South Africa, so statutes must be in line with it. Section 24 indicates that everyone has the right to an environment that is not harmful to one's health or well-being. That Right includes an obligation imposed on the State to protect the environment for the benefit of present and future generations.	The proposed development has to consider the best environmental management practices during the project's life cycle.
National Environmental Management Act (Act 107 of 1998)	National and Provincial	The Act requires that an environmental authorisation must be issued before a listed activity may commence. Section 24(4) of NEMA prescribes that the procedures for the investigation, assessment, and communication of the potential consequences or impacts of activities on the environment must, among other things, with respect to every application for environmental authorisation, ensure that the general objectives of Integrated Environmental Management (IEM) are considered. Section 24(2) indicates that the Minister can publish a list of activities that may not commence without environmental authorization. Three listing notices, Listing Notice 1, 2, and 3, were published in 2014 and amended on the 7th of April 2017 to determine whether a Basic Assessment or Scoping and Environmental Impact Assessment should be undertaken.	The proposed development triggers "listed activities," as defined by NEMA, therefore requiring an EA from the relevant Competent Authority (CA), in this case, the DFFE according to Section 24C. Further, the DFFE screening tool has been consulted from the project's onset, and a copy of the report has been uploaded together with the application form. The DFFE screening tool was also used to guide the required specialist studies; thus, the list corresponds with the specialist studies identified in the screening tool report submitted to the DFFE.

Legislation	Administering Authority:	Summary	Applicability
		NEMA also provides for the duty of care and remediation of environmental damage. This duty is set out in section 28 and is imposed on every person "who causes, has caused or may cause significant pollution or degradation of the environment. Section 30 further indicates the procedures for reporting incidents and the need to implement remedial measures that deal with incidents.	
National Environmental Biodiversity Act (Act 10 of 2004)	National and Provincial	The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. The following regulations, strategies, and frameworks emanate from this Act: • Alien and Invasive Species Regulations, 2014 • South Africa's • National Biodiversity Strategy and Action Plan (NBSAP) • National Spatial Biodiversity Assessment (NSBA) • National Biodiversity Framework (NBF, 2009)	Aquatic And Terrestrial biodiversity themes are high. Subsequently, the sensitivity has been mapped, and sensitive areas flagged to allow for the creation of buffers and protection of them. The requisite application will be submitted to the provincial department, where protected species have been identified and mapped within the construction footprint.
National Environmental Management: Protected Areas Act	National and Provincial	The purpose of the Act includes providing for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity. Section 17 provides the purpose of declaring areas as protected areas. Any development envisaged in a protected area would require approval from the responsible management authority.	The site's sensitivity has been mapped, and sensitive areas have been flagged to allow for the creation of buffers and protection of protected areas. The site is 4km from the Kruger National Park; however, it is not within a protected area.

Legislation	Administering Authority:	Summary	Applicability
National Environmental Management: Air Quality Act (Act No. 39 of 2004)	Municipalities	The Act's purpose includes reforming the law relating to air quality and providing national norms and standards regulating air quality monitoring, management, and control in the country. It also gives effect to S24 of the Constitution. Apart from imposing an obligation on metropolitan and district municipalities to implement the licensing system, a list of activities has been published, which indicates activities that require an Air Emission Licence (AEL).	The proposed project proposes using Internal Gas Combustion Engines technology. The proposed project activities trigger Section 21 of this Act, and the requisite applications will be applied.
National Environmental Management: Waste Act (Act No. 59 of 2008)	National and Provincial	The purpose of the Act includes reforming the law regulating waste management to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation, securing ecologically sustainable development, and remediating contaminated land. A list of activities has been published indicating activities requiring a Waste Management Licence (WML).	None of the activities trigger the requirement of a Waste Management Licence. However, the handling and storage of general and hazardous waste must be provided for in the EMPr prepared. The plant will store more than 80m3 of waste on-site, so the provisions of GNR 926 of 2013 must be complied with.
National Water Act (Act No. 36 of 1998)	National and Provincial	The Act seeks to ensure that the country's water resources are protected, used, developed, conserved, managed, and controlled in a manner that considers relevant factors such as meeting the basic human needs of present and future generations. It lists the 11 water uses specified in Section 21 that require a licence/ General Authorisation.	The proposed development is close to a watercourse (river). The scope of work triggers Section 21 listed activities (a), (c) and (i), and a WUL application has been lodged with the DWS under reference number WU34725.

Legislation	Administering Authority:	Summary	Applicability
National Heritage Resources Act (Act No. 25 of 1999)	National and Provincial	NHRA aims to introduce an integrated and interactive system for managing national heritage resources. Any development that falls within the ambit of the developments described in the Act and/or involves an impact on heritage resources must comply with the requirements of the NHRA. Permits for this specific project would be administered by the Provincial Heritage Agency or South African Heritage Resources Agency (SAHRA).	No heritage or palaeontological significance sites have been identified within the proposed site. However, chance finds remains a possibility.
Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)	National, Provincial, and Local	The Act aims to control the use of natural agricultural resources to promote the conservation of soil, water resources, and vegetation and combat weeds and invader plants. Section 6 of the Act makes provision for control measures to be applied to achieve the objectives of the Act. In addition, there is also draft legislation, namely, Sustainable Utilisation of Agricultural Resources.	The proposed project is on agricultural land. Measures relating to soil, water, and vegetation conservation and the management of alien invasive species must be considered and form part of the EMPr.
Noise Control Regulations in terms of the Environmental Conservation, 1989 (Act 73 of 1989)	Municipality	The assessment of impacts relating to noise pollution management and control, where appropriate, must form part of the EMPr.	Noise generated during the project's construction and operational phases must comply with the provincial Noise Control Regulations. A noise impact assessment has been commissioned to assess the noise levels and propose mitigation measures in consultation with other specialists.
Electricity Regulation, 2006 (Act 4 of 2006)	National	This act provides the national regulatory framework for the electricity supply industry to make the National Energy Regulator the custodian and enforcer of the national electricity regulatory	The proposed project is an electricity generation project. An application for a generation certificate must be lodged with the

Legislation	Administering Authority:	Summary	Applicability
		framework; to provide for licenses and registration as how generation, transmission, distribution, reticulation, trading, and the import and export of electricity are regulated; to regulate the reticulation of electricity by municipalities, and to provide for matters connected to it.	National Energy Regulator of South Africa (NERSA) in terms of Section 11.
National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)	National	The purpose of this Act Is to provide for the protection, conservation, and management of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes	The site is not within the South African Protected Areas, so this Act may not necessarily apply. It is, however, important to highlight the site's proximity to the Kruger for completeness.
National Road Traffic Act (Act No. 93 of 1996)	National, Provincial, and Local	An abnormal load vehicle permit will be required to transport the various infrastructures and transmission line components to the site for construction. These include: • Route clearance and permits for vehicles carrying abnormally heavy or abnormally dimensional loads will be required. • Transport vehicles exceeding the dimensional limitation (length) of 22m.	The constriction phase will entail the delivery of components that may, in some instances, be abnormal loads. At all times, the project will need to comply with the requirements of the Act and apply for permits as required
Occupational Health and Safety Act (OHS Act	National	The Major Hazard Installation (MHI) regulations (July 2001) published under Section 43 of the Occupational Health and Safety Act (OHS Act) requires employers, self-employed persons, and users who have on their premises, either permanently or	The project must comply with the requirements of the Act throughout the project phases. Installation of approximately

Legislation	Administering Authority:	Summary	Applicability
		temporarily, a major hazard installation or a quantity of a substance which may pose a risk (our emphasis) that could affect the health and safety of workers and the public to conduct a risk assessment in accordance with the legislation. Following legislation, the risk assessment must be done by an approved inspection authority (AIA) registered with the Department of Labour and accredited by the South African Accreditation Systems (SANAS) before construction of the facility.	500m gas pipeline will require clearance from a reputable specialist.
Hazardous Substance Act, 1973 (56 of 1973)	National, Provincial, and Local	The Hazardous Substances Act controls hazardous substances' production, import, use, handling, and disposal. Under the Act, hazardous substances are defined as substances that are toxic, corrosive, irritant, strongly sensitizing, flammable, and pressure-generating under certain circumstances and may injure, cause ill health, or even death in humans.	The power-generating process produces negligible amounts of waste, predominantly solid, brine, and general domestic waste, predominantly from the water treatment process. The project will also generate hazardous waste in the form of used oils generated from maintenance and cleaning activities. The waste generated will need to be classified and managed in accordance with the provisions of the Waste Act and associated norms and standards for storage (GN R923 OF 2013)
Gas Act, 2001 (48 of 2001)	National, Provincial, and Local	The Gas Act 48 of 2001 intends: • to promote the orderly development of the piped gas industry;	The proposed project entails the development of a gas-to-power facility with a maximum output of 1000 MW and associated

Legislation	Administering Authority:	Summary	Applicability
		• to establish a national regulatory framework; • to establish a National Gas Regulator as the custodian and enforcer of the national regulatory framework; and • to provide for matters connected therewith. The objects of this Act are to: (a) promote the efficient, effective, sustainable, and orderly development and operation of gas transmission, storage, distribution, liquefaction, and regasification facilities and the provision of efficient, effective, and sustainable gas transmission, storage, distribution, liquefaction, re-gasification, and trading services; (b) facilitate investment in the gas industry. (c) ensure safety and efficiency—economical and environmentally responsible transmission, distribution, storage, liquefaction, and re-gasification of gas. (d) promote companies in the gas industry owned or controlled by historically disadvantaged South Africans using license conditions to enable them to become competitive. (e) ensure that gas transmission, storage, distribution, trading, liquefaction, and re-gasification services are provided equitably and that all parties concerned consider the interests and needs of all parties concerned. (f) promote skills among employees in the gas industry;	infrastructure. The associated infrastructure will include a gas pipeline that connects to the ROMPCO.

Legislation	Administering Authority:	Summary	Applicability
		(g) promote employment equity in the gas industry. (h) promote the development of competitive markets for gas and gas services. (i) facilitate gas trade between the Republic and others. (j) promote access to gas affordably and safely.	
Mpumalanga Nature Conservation Act, 1998 (Act No. 10 of 1998)	Provincial	This Act makes provisions regarding nature conservation in the Mpumalanga province. It provides for, among other things, wildlife protection, hunting, fisheries, endangered fauna and flora as listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the control of harmful animals, freshwater pollution, and enforcement.	The project is within 10 km of Kruger National Park Malelane Gate
Climate Change Bill (2018)	National, Provincial, and Local	The objects of the Act are to: a) provide for the coordinated and integrated response to climate change and its impacts by all spheres of government by the principles of cooperative governance; b) Effectively manage inevitable climate change impacts by enhancing adaptive capacity, strengthening resilience, and reducing vulnerability to climate change, building social, economic, and environmental resilience and an adequate national adaptation response in the global climate change response. c) make a fair contribution to the global effort to stabilise greenhouse gas concentrations in the atmosphere at a level	Climate change considerations must be incorporated into the design, and the objects of the Act must be adhered to. An air quality and climate change specialist study has been commissioned to assess the impacts of gas power stations on climate change.

Legislation	Administering Authority:	Summary	Applicability
		that avoids dangerous anthropogenic interference with the climate system within a timeframe and in a manner that enables economic, employment, social and environmental development to proceed sustainably. The National Greenhouse Gas Emission Reporting Regulations have been promulgated in terms of NEM: AQA to introduce a single national reporting system for the transparent reporting of greenhouse gas emissions. The regulations apply to the categories of emission sources listed in Annexure 1 to the regulations and include electricity production exceeding 10 MW. Tier 1 reporting is required as a minimum, with a five-year grace period applicable before reporting of the lower tiers.	
Subdivision of Agricultural Land Act (Act 70 of 1970)	National	A change of land use (re-zoning) for the development of agricultural land needs to be approved in terms of the Subdivision of Agricultural Land Act (Act 70 of 1970) (SALA). This is required for long-term leases, even if no subdivision is required.	The site is currently agricultural and will need to be rezoned to industrial The. rezoning applications have been initiated.
Development Facilitation Act (Act 67 of 1995)	National	The Development Facilitation Act (Act 67 of 1995) (DFA) sets out several key planning principles which have a bearing on assessing proposed developments considering the national planning requirements. The planning principles most applicable to the study area include: • Promoting the integration of the social, economic, institutional, and physical aspects of land development;	Applies to all developments.

Legislation	Administering Authority:	Summary	Applicability
		• Promoting integrated land development in rural and urban areas in support of each other; • Promoting the availability of residential and employment opportunities near or integrated; • Optimising the use of existing resources, including such resources relating to agriculture, land, minerals, bulk infrastructure, roads, transportation, and social facilities; • Contributing to the correction of the historically distorted spatial patterns of settlement in the Republic and the optimum use of existing infrastructure more than current needs; • Promoting the establishment of viable communities; and • Promoting sustained protection of the environment.	
Civil Aviation	Civil Aviation Act 13 of 2009	As outlined in Part 139.01.30 of the Civil Aviation Regulations (GN R425, GG 35398 of 1 June 2012), Buildings or other objects which will constitute an obstruction or potential hazard to aircraft moving in the navigable air space in the vicinity of an aerodrome, or navigation aid, or which will adversely affect the performance of the radio navigation or instrument landing systems, must not be erected or allowed to come into existence without the prior approval of the Director	Civil aviation was rated high on the screening report. However, a detailed assessment of mapping confirmed that the proposed power plant location is within the low sensitivity of civil aviation aerodromes.

Legislation	Administering Authority:	Summary	Applicability
Defence	Defence Act 42 of 2002	The Defence Act 42 of 2002 is a comprehensive piece of legislation in South Africa that governs various aspects related to national defence, military organization, and security matters.	The screening tool assessed the proposed site as having low sensitivity to Defence concerns. Therefore, according to protocols for Specialist (GN.320) of March 2020, there are no anticipated negative impacts on defence. Moreover, GIS mapping confirmed that the proposed project is located within a low-sensitivity area.

OTHER

National Protected Areas Expansion Strategy (NPAES)

Environmental Conservation Act (Act No. 73 of 1983)

Natural Scientific Professions Act (Act No. 27 of 2003)

National Veld and Forest Fire Act (101 of 1998)

Civil Aviation Act (Act 13 of 2009) and Civil Aviation Regulations (CAR) of 1997;

Draft White Paper on Civil Aviation Policy, 2017

ICAO Annex 14, Volume 1: Aerodrome Design and Operations (see Appendix 6.4 & 6.5)

SA Civil Aviation Regulations (CARS): Part 139 – Aerodromes and Heliports

SA Civil Aviation Technical Standards (CATS): SACATS 139.01.30 (26th Amendment) – Obstacle Limitations and Markings Outside Aerodromes or Heliports (Appendix 6.2)

Associated provisions of SACATS 139.02.2 – Aerodrome Design Requirements

ATNS Database of civil aviation airspace in South Africa, February 2024.

White Paper on Renewable Energy (2003);

Integrated Resource Plan for South Africa (2010);

Legislation	Administering Authority:	Summary	Applicability
Fencing Act (Act 31 of 1963). PROVINCIAL Mpumalanga Nature Conservation Ordinance (Ordinance 8 of 1969) MUNICIPAL Municipal Systems Act (Act No. 32 of 2000) Municipal By-laws as applicable to the project area Laws identified in the respective specialist reports INTERNATIONAL International Finance Corporation Performance Standards Equator Principles International Convention on Biological Diversity (CBD, 1993) The Convention on Wetlands (RAMSAR Convention, 1971) The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES 1973) The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention, 1979) The United Nations Framework Convention on Climate Change (UNFCC,1994)			

10.1 METHOD STATEMENTS FOR THE ACTIVITIES TO BE CARRIED OUT

The environmental specifications are required to be underpinned by a series of Method Statements (MS), within which the Contractors and Service Providers are required to outline how any identified environmental risks will practically be mitigated and managed for the duration of the contract, and how specifications within this EMPr will be met. That is, the Contractor will be required to describe how specified requirements will be achieved through the submission of written Method Statements to Khanyazwe Flexpower prior to commencement of activities on site:

The Method Statements must cover applicable details with regard to:

- Site layout.
- Emergency/disaster incident and reaction procedures.
- Construction procedures;
- Delivery and storage of materials and equipment to be used;
- How the equipment/material will be moved while on-site;
- The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- Compliance/non-compliance with the Specifications; and
- Any other information deemed necessary by Khanyazwe Flexpower and ECO.

Specific method statements required may include but not limited to:

- Vegetation clearing;
- Site establishment and site layout plan;
- Fauna and Flora management;
- Excavations;
- Chemical/hazardous substance storage and management;
- Workshop and Material Equipment Storage;
- Plant- Refuelling;
- Cement/concrete use;
- Environmental awareness training;
- Fire management;
- Emergency response;
- Storm water and soil erosion management;
- Waste management;
- Servitude and Access road(s);
- Contaminated water management;
- Temporary site closure;
- Site rehabilitation;

- Alien plants management and use of herbicides and pesticides;
- Dust management; and
- Noise control.

The above is not an exhaustive list of the required MS; other activities/aspects may require the same prior to the commencement of the work. Additional MS may be required as the project progresses.

11 DESCRIPTION OF MITIGATION MEASURES

This section serves to prescribe mitigation measures to prevent, reduce, eliminate, or compensate for impacts to acceptable/insignificant levels.

11.1 PRE-CONSTRUCTION MANAGEMENT PROGRAMME

The pre-construction management programme is to be used as a guideline during the planning, design and detailing of the development components. This part of the programme is to be referenced by all personnel involved in decision making during the planning and design phases. The responsible agents are abbreviated as follows:

Title	Abbreviation
Contractor Environmental Officer	CEO
Environmental Control Officer	ECO
EO	Environmental Officer (Khanyazwe Flexpower)
Environmental Manager	EM
Project Manager	PM

11.1.1 Pre-Construction Activities

Objective	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Ensure that proper environmental conditions and commitments are established prior to the commencement of construction activities by informing all parties of appropriate environmental protection measures.	• The successful tendering Contractors/third parties are made aware of the contents of this EMPr and any penalties arising from non-compliance prior to the commencement of the work. • Appoint a suitably qualified operational manager who will be responsible for monitoring compliance with the EMPr.	• Signed Declaration by contractor. • Appointment Letter. • Proof of submission of ECO appointment to DFFE.	• Contractor. • EO.	• Pre-construction
• Record and mapping of sensitive species and	• After the final layouts have been approved and prior to any new groundworks, conduct a thorough footprint	• Records by a qualified biodiversity specialist.	• EO	• Pre-construction

environments before construction commencement	investigation (during summer) to record all Protected or Threatened plant species (population location and size). • Map (by GPS) all Protected or Threatened species populations that must be avoided or relocated. • Compile a photographic and relocation guide for the affected species. • Follow up by implementing the necessary Search and Rescue actions before any groundwork occurs, in line with future farming plans to ensure no destruction of indigenous species of conservation concern.	• Maps of any protected areas. • Photographic evidence of pre-construction. • Search and Rescue Plan and implementation reports.		

11.2 CONSTRUCTION ENVIRONMENTAL MANAGEMENT PROGRAMME

This section relates to the construction activities at Khanyazwe Flexpower and may also be implemented during any other construction activities within the site that do not trigger the listed activities.

11.2.1 Site establishment

Possible Impact	Objective	Applicable Legislation	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Disturbance in the natural environment. • Disturbance to soil and vegetation.	• To ensure minimal disturbance of the environment during the construction site phase.	• NEMA • Construction Regulations	• Before establishing the construction camp site and associated infrastructure, Khanyazwe Flexpower and the ECO must identify suitable areas for establishing the site office and lay-down area in the least sensitive locations, preferably within an already disturbed areas.	• Observation. • Site Plan.	• ECO • CEO • EO	• During site establishment

Possible Impact	Objective	Applicable Legislation	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Once these items have been addressed, site establishment shall take place in an orderly manner, and all amenities shall be installed before the main workforce moves onto the site. Construction camps on the site must be de-established after construction. Rehabilitation must be done in accordance with the rehabilitation plan and/or approved Method Statement. **Site Plan** • The contractor must prepare documentation for the proposed campsite prior to the commencement of construction activities and submit it for approval. This documentation must include those listed in Section 7 above. **Site Camps** • The following restrictions must be placed at the site camp for the construction workforce in general: o The use of watercourses for domestic purposes such as washing clothes, drinking, and bathing;			

Possible Impact	Objective	Applicable Legislation	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			○ The use of welding equipment, oxy-acetylene torches, and other bare flames where veld fires can be a hazard; ○ Poaching of any form; and ○ Use of surrounding veld as toilets. **Vegetation clearing:** • The natural vegetation encountered on site is to be conserved and left intact as much as possible. • Only vegetation within the approved construction footprint must be cleared, and clearance must be as per the approved Method Statement in line with other requirements of this EMPr. • The Self-succession of vegetation will be encouraged after construction. • If the area is exposed for longer than 18 months and no self-succession has taken place, other options must be investigated. **Water for human consumption:** • Clean potable water must always be made available.			

Possible Impact	Objective	Applicable Legislation	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			Sewage Treatment: • Chemical toilets must be supplied (one per 15 persons) and regularly cleaned and maintained by the Contractor. • The Contractor must arrange for regular emptying of toilets by a registered service provider and be entirely responsible for enforcing their use and maintenance. • The ablution facilities must be at least 100 m from the watercourses and associated buffers. • All ablution facilities must be anchored to prevent them from being toppled by the wind. • Ensure site where toilets are disposed have necessary legislative approvals.			

11.2.2 Sensitive Ecology

Possible Impact	Objective/s	Applicable Legislation	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Impact on sensitive ecology	• To ensure that sensitive areas are not disturbed. • To ensure minimal or no disturbance to vegetation on and around the site. • To prevent negative impact on both flora and fauna.	• NEMBA (10 of 2004)	• The following plan and Method Statements must be prepared: • Implement an alien invasive plant monitoring and management plan whereby the spread of alien and invasive plant species is regularly removed, and re-infestation monitored on site. • Applicable Method Statement as indicated in Section 7 must be prepared and approved by the ECO. • All sensitive areas must be clearly demarcated and pointed out to the Contractor by the ECO and EO. • The following conditions must be adhered to: o All construction staff must undergo environmental induction before construction commences to raise awareness and reduce potential floral and faunal impacts. o Demarcate the authorized construction footprint to avoid unnecessary vegetation clearing, and clearing must be in accordance with the approved Method Statement.	• Observation. • Site plan.	• EO • ECO • CEO	During construction

Possible Impact	Objective/s	Applicable Legislation	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			○ Ensure that 'No-Go' areas are clearly demarcated and/or fenced before construction activities commence. ○ No open fires are permitted. ○ The use of existing roads and tracks is promoted while creating new unauthorised routes through vegetated areas is prohibited. ○ Avoid sensitive faunal habitats such as drainage lines and wetlands. ○ Where possible, clearance of Species of Conservation Concern (plant SCC) listed in the Mpumalanga Biodiversity Management Act, no.4 of 2016 should be avoided. If this is not possible, partial conservation of these plant SCC be considered. ○ A phased planned approach must be taken when construction is initiated. Areas must only be stripped directly prior to construction and only expose soils to erosion for the minimum period necessary. Where possible, re-vegetation of areas must be implemented as soon as possible.			

11.2.3 Materials handling, use and storage

Possible Impact	Objective	Applicable Legislation	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Impact on human health. • Impact on soils and water resources.	• To ensure the safe handling, storage, use and disposal of hazardous substances. • To ensure full compliance with the requirements of the applicable legislation.	• OHSA • Construction Regulation (2013) • NWA (36 of 1998) • NEMA (107 of 1998)	**Safety:** • All the necessary handling and safety equipment required for the safe use of hydrocarbons shall be provided by the Contractor to be used and/or worn by the staff. • The Contractor must comply with the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and Construction Regulations (2003). Hazardous Material Storage: • Hydrocarbons and other hazardous substances will only be stored in a secured, designated area with restricted entry. • Storage of hazardous products will only be in suitable containers. Safety Data Sheets (SDS) of the hazardous material stored must be available on site and in the safety file at all times • All hydrocarbons, irrespective of the volumes, shall be stored on a smooth, impermeable surface (concrete) with a permanent bund. The impermeable lining shall extend to the crest of the bund, and the volume inside the bund shall be 110% of the total capacity of all the storage tanks.	• Observation • Incident Report	• ECO • CEO • EO	• Continuous

Possible Impact	Objective	Applicable Legislation	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Gas welding and cylinders must be stored in a secure, well-ventilated area. The Contractor must supply sufficient fire-fighting equipment in the event of an incident. • Strictly, no smoking will be allowed where fuel is stored and used. Spillage: • No activities associated with hydrocarbons and or chemicals (i.e., wash bays, etc.) may be undertaken outside of an effectively designed contained area. • All spills must be reported to the ECO within 24 hours of occurrence. • Major spillage incidents will be reported to the DFFE and DWS. In consultation with these regulatory authorities, appropriate remedial measures will be implemented			

11.2.4 Water supply

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Portable Water for Consumption	• To ensure availability of water for human consumption.	• NWA (36 of 1998)	• Khanyazwe Flexpower must ensure that a Water Use Licence is in place prior to construction. Proof must be provided to the ECO.	• Water consumption records	• ECO • CEO • EO	• On-going during the construction phase

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	• To ensure that water usage is minimized. • To conserve water resources at all times.		• The Contractor must ensure water is conserved throughout construction. • If possible, grey water must be used for dust suppression. • Contractor must supply potable water for human consumption at all times.			

11.2.5 Vehicular access and movement of construction vehicles

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance indicator	Monitoring Criteria/	Responsible Agent	Monitoring Frequency
• Damage to vegetation. • Erosion and loss of topsoil.	• To prevent ecological damage. • Minimise damage to the nearby watercourses. • Minimise erosion.	• CARA (43 of 1998) • NEMBA (10 of 2004) • NWA (36 of 1998)	• Access to the site shall be designed/mapped by the Contractor and approved by the ECO. • The Contractor must maintain the access roads. • Before commencing, the contractor must erect and maintain marker pegs along the boundaries of the working areas, and access roads. • Ensure that access roads to the site are of a suitable	• Access plan approved by the ECO. • No access roads through watercourses. • No visible erosion scars within the construction site. • No evidence of erosion on slopes. • No vehicle accidents occurring within the site.	• Photographic record of private roads prior to the Contractor using the roads. • Site plan • Regular monitoring of access roads condition. • Monitoring of impacts into the surrounding areas.	• ECO • CEO • EO	• Continuous during the construction phase.

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance indicator	Monitoring Criteria/	Responsible Agent	Monitoring Frequency
			quality to eliminate soil erosion and channel stormwater. • No illegal use of private roads is permissible. • No roads shall cut through watercourses as this may lead to erosion, causing siltation of streams unless otherwise authorised. • Where new routes are required, the disturbed area must be kept minimal (a two-track dirt road will be the preferred option). • Upon completion of the project, all roads shall be repaired/rehabilitated to their original state. • All vehicles must adhere to demarcated tracks or roads, and the speed limit must not exceed 30km/h. • The construction signs indicating the speed limit of				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance indicator	Monitoring Criteria/	Responsible Agent	Monitoring Frequency
			30km/h within the construction access road must be placed at all times. • Where necessary, dust suppression must be implemented to reduce dust impacts on surrounding areas. • As far as possible, existing roads and farm tracks must be used to provide access during construction, as this will reduce the extent of the disturbed area. • Environmental Awareness of the need to prevent spillages by the implementation of good housekeeping practices must be conducted during induction. • All authorisations and permits must be obtained for the transportation of abnormal loads and				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance indicator	Monitoring Criteria/	Responsible Agent	Monitoring Frequency
			hazardous materials on public roads. • Flagmen and temporary warning signs must be placed at all access points where heavy vehicles will access public roads during construction. • Controls should be in place to ensure that vehicles exiting the site are not overloaded.				

11.2.6 Movement of construction personnel and equipment

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Trespassing • Safety and security.	• To ensure controlled and managed movement of personnel and equipment.	• NEMA (36 of 1998) • OHS	• The Contractor must ensure that all construction personnel, labourers, and equipment remain within the demarcated construction sites at all times.	• No trespassing of Contractor's workforce. • No complaints from landowners.	• Inspection Report • Security registers. • Complaints register.	• ECO • Contractor	• Continuous throughout the construction phase.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• No trespassing to the surrounding landowners premises is allowed. • Where construction personnel move outside the site's boundaries, the Contractor/laborers must obtain permission from the EO and ECO. • All equipment moved on-site or off-site must be approved the EO. • The Contractor shall meet these safety requirements under all circumstances. • All equipment transported shall be clearly labelled as to their potential hazards according to specifications. • All the required safety labelling on the containers and trucks shall be adhered to. • The Contractor shall ensure that all the necessary pre-				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			cautions against damage to the environment and injury to persons are taken in the event of an accident and shall provide a Method statement to that effect. • The Contractor shall ensure that no machinery, personnel, material, or equipment enters any marked 'No-Go' areas.				

11.2.7 Protection of flora and fauna

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria/	Responsible Agent	Monitoring Frequency
• Protection of the vegetation and habitat • Direct faunal impacts	• To conserve vegetation. • To ensure the control of alien invasive species and to ensure that	• NEM: BA (10 of 2004)	• Ensure that lay-down and other temporary infrastructure is within low-sensitivity areas, preferably previously transformed areas.	• No disturbance of protected flora and fauna. • Minimal disturbance of vegetation.	• Inspection Report • Complaints register.	• ECO • CEO	• Continuous during the construction phase.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria/	Responsible Agent	Monitoring Frequency
	rehabilitation is as close as possible to the original state.		• The footprint area of the construction should be kept to a minimum. The footprint area must be clearly demarcated to avoid unnecessary disturbances to adjacent areas thereby causing further encroachment of invasive species. • Avoidance of any natural areas surrounding the proposed development area, specifically to the south and north, with a corresponding recommendation for the location of the proposed infrastructure to an area of ‘‘Very Low’ SEI. • Roads and Transmission powerlines construction must only be considered in transformed habitat.	• No alien species infestation. • Re-vegetation of areas disturbed and not undergoing development.			

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria/	Responsible Agent	Monitoring Frequency
			• Adhere to existing roads and servitudes. • Areas to be developed/disturbed, including transmission powerlines, be specifically demarcated so that during the construction phase, only the demarcated areas be impacted upon. • Areas of indigenous vegetation outside of the direct project footprint, should under no circumstances be further disturbed. • The construction area must be fenced off and no ingress into other areas be allowed. • Areas that have been disturbed during construction, but will not undergo development,				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria/	Responsible Agent	Monitoring Frequency
			must be revegetated with indigenous vegetation dominant in the area. • Make use of existing access routes as much as possible, before new routes are considered. • Any selected "new" route must be authorized, minimizing disturbances to undisturbed areas. • Minimize unnecessary clearing of vegetation beyond the development footprints. • The use of herbicides is not recommended. • Appropriately contain any generator diesel storage tanks, machinery spills (e.g. accidental spills of hydrocarbons oils, diesel etc.) or construction materials on site (e.g.				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria/	Responsible Agent	Monitoring Frequency
			concrete) in such a way as to prevent them leaking. • An Invasive Alien Plant Management Plan must be compiled and implemented. • Areas that have been disturbed during construction, but will not undergo development, must be revegetated with indigenous vegetation dominant in the area.				

11.2.8 Heritage / Archaeological sites

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Destruction of sites of archaeological and	• Preservation and appropriate management of any new archaeological	• NHRA (25 of 1999)	**No burial grounds were recorded, sites or relics dating to the Iron Age or Stone Age were found within the project footprint.**	• Detailed record of chance finds. • No destruction of or damage to archaeological sites.	• Inspection Report	• ECO • CEO	• On-going • during all excavations.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
heritage significance.	sites should this be discovered during construction.		Should any heritage resources be uncovered during construction, the following mitigation measures should be implemented: • To protect graves/heritage resources an on-site induction to construction workers is essential to avoid accidental damage. • There are no burial sites or graves identified on site, however, should graves, burial sites and any archaeological materials (e.g. fossils, bones, artefacts etc.) be discovered during construction activities, all activities should cease, and the site must be barricaded. Furthermore, SAHRA, Mpumalanga Heritage Agency or a	• No litigation due to destruction of heritage sites.			

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			professional archaeologist must be informed. • Should any unmarked burials exposed during construction, affected families must be consulted, relevant rescue / relocation permits must be obtained from SAHRA, Mpumalanga Heritage Agency before any grave relocation can take place. Furthermore, a professional archaeologist must be retained to oversee the relocation process in accordance with the National Heritage Resources Act, 1999 (25) of 1999. • The Contractor shall not recommence working in that area until written permission has been received from the SAHRA.				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Where burial sites are accidentally disturbed during construction, the affected area should be demarcated as no go areas.				

11.2.9 Servicing and re-fuelling of construction equipment

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria/ Performance Indicator	Responsible Agent	Monitoring Frequency
• Impact on soil and the surrounding water resources due to accidental spillages.	• To prevent spillages of hazardous substances. • To preserve soils, surface, and groundwater.	• NEMWA 59 of 2008 • NWA (36 of 1998) • OHSA (85 of 1993)	During the construction phase, construction materials and equipment maintenance may lead to environmental degradation and pollution. Therefore, the following mitigation measure must be adhered to: • All maintenance and repair work must be carried out within an area designated for this purpose and equipped with necessary pollution containment measures.	• No evidence of hazardous substances polluting the site.	• On-going monitoring with regular inspections; and Service Records.	• ECO • CEO	• On-going during the constructio n phase.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria/ Performance Indicator	Responsible Agent	Monitoring Frequency
			• Vehicle and construction machinery must be refuelled, greased, or oiled on a drip tray or bunded surface. • Effective drip trays must always be placed under stationary construction vehicles and machinery. • Construction vehicles are to be maintained in an acceptable state of repair. No vehicles or equipment with leaks or causing spills will be permitted on site. • Fuel required during construction must be stored at a central depot located on a slab and contained within a bund capable of containing at least 110% of the total volume in the containers. • Temporary fuel storage tanks and transfer areas also need to be located on an adequately				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria/ Performance Indicator	Responsible Agent	Monitoring Frequency
			bunded surface to contain accidental spillages. • The Contractor must be in possession of an emergency spill kit that must always be complete and available on site.				

11.2.10 Waste management

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Visual Impact • Surrounding water resources contamination • Land pollution	• To ensure the efficient management of waste on-site. • To ensure minimal waste impacts on the surrounding environment. • Minimise waste material being	• NEMWA (59 of 2008) • NWA (36 of 1998)	• The contractor must prepare a Waste Management Method Statement for approval by the ECO before construction. • Waste management will form part of the induction process to ensure that all workers on site fully understand all practices involved with proper waste management. **Solid Waste Management:**	• Presence of proper storage facilities that are properly labelled and covered. • Post-construction work areas are clear of all waste materials such as litter.	• Inspection Report • Waste Disposal Records	• ECO • CEO	• Daily throughout construction

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	strewn in the environment.		• Waste must be separated at source (e.g., general, scrap metals, and hazardous waste). • An adequate number of scavenger-proof refuse bins must be provided at the construction site and must be clearly labelled (general/ hazardous, etc.) according to waste streams. • All waste must be transported in an appropriate manner and disposed of at a licensed waste disposal facility. Proof of safe disposal must be kept on site. • The Contactor may not dispose of any waste and/or construction debris by burning or burying it. • Waste bins must be emptied on call based on inspection such that they do not overfill. • The Contractor shall maintain 'good housekeeping' practices and ensure that all work sites				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			and the construction camp are tidy and litter-free. **Liquid Waste Management:** • An adequate number of suitable waste containers with lids must be provided at the construction site. • The Contractor will ensure that wastewater is discharged in the drums provided. • All waste must be transported in an appropriate manner and disposed of at a licensed waste disposal site. • All requirements of the NEMWA, supporting policies, and guidelines must be adhered to.				

11.2.11 Surface and groundwater management

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Possible contamination of the surrounding water resources.	• To protect and conserve water resources. • To avoid illegal diversion and destruction of water resources. • To ensure proper storm water run-off management that prevent erosion and .siltation/sedimentation. • To ensure that the rivers and streams are protected and incur minimal negative impact from the development.	• NWA	• The Contractor must take reasonable precautions to prevent the pollution of ground and surface water resources as a result of construction activities. • No spills may be hosed / disposed into the surrounding natural environment. • All soil contaminated must be excavated to the depth of contaminant penetration, placed in suitable drums/containers and disposed of to a hazardous waste facility. • No extraction of water from any natural resources without the relevant authorisation should be permitted. • Erosion control measure must be put in place to control storm water runoff.	• Unpolluted watercourses • No erosion scars • No water ponding on site	• Inspection Report • Design Plans	• CEO • ECO	• Continuous through the construction phase.

	• To ensure compliance with the requirements of the Act.		• Stormwater management measures must be as per the approved Storm Water Management Plan. • Erosion control measures on all access roads must be implemented. • Proper compaction of the demarcated site must be conducted, and implementation of stormwater management plan and infrastructure is necessary.				

11.2.12 Hazardous materials

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Impact on soils and the surrounding water resources.	• To ensure safe and proper handling of hazardous material.	• HSA • OHSA (85 of 1993)	• The Contractor must comply with all National, Regional, and Local legislations with regard to the storage, transport, use, and disposal of petroleum, chemical, harmful, and hazardous substances and materials.	• No spillages and leakages	• Hazardous material data sheet • Incident reports	• ECO • CEO	• Continuous throughout the construction phase.

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Equipped spill kits must be made available on-site at all times. • The CEO must provide training and educate all personnel on site who will be handling any hazardous material about its proper use, handling, and disposal. • Storage of all hazardous material must be safe, tamper-proof, and under strict access control. • Exercise extreme care with handling diesel and other toxic solvents to ensure that spillage is avoided. • Any accidental chemical / fuel spills must be remediated immediately. • The management of chemicals and hydrocarbons should form part of the emergency preparedness and response programme. No activities associated with hydrocarbons				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			and or chemicals (i.e. wash bays etc.) may be undertaken outside of an effectively designed contained area. • Regular safety checks and maintenance of the storage tanks should be undertaken by suitably qualified safety officers. • In addition, the storage tanks and any other areas where spillages and leakages could occur should be contained within a bunded area. • Any rainfall and stormwater collected within the bunded area should remain separate from other stormwater and must be treated to an acceptable level before release. • The Environmental Best Practice Specifications published by the DWAF (Integrated Environmental Management Series, Environmental Best Practice				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			Specifications: Operations, Edition 3, DWAF 2005) be adopted for this development. • Emergency plans and infrastructure to deal with spillages (especially hydro-carbon spillages) must be in place; this should include mobile response units to deal with spillages in the field; • A walled concrete platform, dedicated store with adequate flooring or bermed area must be used to accommodate chemicals such as fuel, oil, paint, herbicide, and insecticides, as appropriate, in well-ventilated areas; • The storage of potentially hazardous materials, such as fuel, oil, cement, and bitumen, should be above any 100-year flood line or as agreed with the Environmental Control Officer. • Surface water draining off contaminated areas containing				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			oil and petrol must be channelled towards a sump, which will separate these chemicals and oils; • All construction materials liable to spillage are to be stored in appropriate structures with impermeable flooring. • Portable septic toilets are to be provided and maintained for construction crews. Maintenance must include their removal without sewage spillage. • No uncontrolled discharges from the construction crew camps to any surface water resources shall be permitted. Any discharge points need to be approved by the relevant authority. • In the case of pollution of any surface or groundwater, the Regional Representative of the Department of Water and				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			Sanitation must be informed immediately; • The construction site should be cleaned daily, and litter removed.				

11.2.13 Oil Spill Management

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Soil structure contamination due to waste contamination and spillages being created during the construction activities • Spillages of hydrocarbons or any other chemical could lead to surface water pollution.	• To avoid ground and surface water contamination • To ensure proper and safe handling of oil spillages.	• HSA.	• Waste management must be a detailed component of the induction process provided by Khanyazwe Flexpower. An incident management system will include procedures and training for dealing with incidents. • No activities associated with hydrocarbons and or chemicals (i.e., wash bays, etc.) may be undertaken outside of an effectively designed contained area.	• No incident reported • Proper use of drip trays • Presence of oil spill kit.	• Inspection Report • Incident report	• ECO • CEO	• On-going during the construction phase.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• All spills must be reported to the ECO within 24 hours of occurrence. • Major spillage incidents will be reported to the DFFE and DWS. In consultation with these regulatory authorities, appropriate remedial measures will be implemented. • The Contractor must be in possession of a mobile oil spill kit at all times. • The oil spill procedure and emergency preparedness plan must be implemented. • If spills occur and soils become contaminated, the appropriate remedial measures will be identified in consultation with an appropriate qualified specialist. • Appropriate waste bins to be in place for disposal of spilled material. • During induction and ongoing training all employees must be				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			trained in how to rehabilitate contaminated spill areas.				

11.2.14 Storm Water Management

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Negative impact on the surrounding water resources	• To reduce the potential impact from runoff on sensitive areas.	• NWA (36 of 1998)	• Design all structures to ensure clean and dirt water separation as stipulated in Regulation 704 of the National Water Act. • Implement a management and maintenance program for clean and dirty water systems to stay fully operational. • The Contractor must ensure that polluted rainwater does not run-off into natural areas. • Storm water shall be diverted from the construction works. • Implement an ecologically sensitive stormwater	• No evidence of erosion • No evidence of increased siltation • No evidence of contaminated water courses.	• Site Plan • Inspection Report	• ECO • CEO	• Continuous during the construction .

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			management plan that includes not allowing stormwater to be discharged directly into the identified nearby water resources. • Ensure that stormwater leaving the construction site is not contaminated by any solid, liquid, or gas substance. • If possible, the commencement of construction activities can be scheduled to coincide with low rainfall conditions when the erosive runoffs and wind are anticipated to be low.				

11.2.15 Fire

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Destruction of property • Loss of life. • Destruction of crops	• To prevent open fires. • To ensure that the workforce is aware of	• NEMA • OHSA	• The contractor must implement a fire management Method Statement, which must be accepted by the ECO and Khanyazwe Flexpower.	• No reported fire incident • No traces of cigarettes buts outside	• Fire Management Plan. • Daily Checks.	• ECO • CEO	• On-going during the construction phase.

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	emergency procedures in the event of an incident.		• Fuels or chemicals must be stored at the designated storage area. • Gas and liquid fuels must not be stored in the same storage area. • Serviced fire-fighting equipment shall be made available and accessible at all times and routinely inspected. • No open fires for heating or cooking will be permitted on site, unless approved by the ECO and Khanyazwe Flexpower and only at designated areas. • Designated smoking areas must be provided, with special bins for discarding of cigarette stumps. • Fire incidence must be reported to the ECO immediately. • Firebreaks to be put in place.	the designated smoking area.			

11.2.16 Air Pollution

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Dust nuisance from excavations, Site clearing, removal of topsoil and vegetation; • Exhaust fumes from construction vehicles.	• To ensure proper mitigation of air pollution. • To avoid dust nuisance from excavation activities and vehicles on dirt roads.	• NEM:AQA; • NEM:AQA: National Dust Control Regulations • Ambient Air Quality Guidelines and Standards.	The following activities during the construction phase were identified as possible fugitive emission sources and may impact the ambient air quality at the relevant environmental sensitive receivers: • Site clearing, removal of topsoil and vegetation; • Construction of surface infrastructure e.g. access roads, water pipes, storm water diversion berms, boiler room, management houses, admin building, drilling blasting etc. • General transportation and vehicle movement on site). Therefore, the following mitigation measures and recommendations must be put in place:	• No complaints from surrounding land-owners recorded. • No evidence of dust pollution plumes on site.	• Inspection Report • Complaints register	• ECO • CEO	• On-going throughout the construction phase.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			Site clearing and removal of topsoil and vegetation. • Topsoil must not be removed during high wind conditions due to associated wind erosion heightening dust levels in the atmosphere. • Topsoil and subsoil must be stockpiled separately in low heaps. • Area of disturbance must be kept to a minimum, and no unnecessary clearing of vegetation must occur. • Topsoil must be re-vegetated to reduce exposure areas. • Stockpile any topsoil or overburden material at least 40m outside the water courses' outer boundary. • During the loading of topsoil onto trucks or stockpiles, the dropping heights should be minimised.				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Water or binding agents such as (petroleum emulsions, polymers, and adhesives) can be used for dust suppression on earth roads. • When using bulldozers and graders, minimise travel speed and distance and volume of traffic on the roads. • Stockpiles must not be left for prolonged periods as wind energy generates erosion and causes more dust. • Emissions generated by wind are dependent on the frequency of disturbance of erodible surfaces. As such, covering the stockpiles with vegetation would reduce the negative erosion effect. • Any crusting of the surface binds the erodible material. • All stockpiles to be damped down, especially during dry weather or re-vegetated (hydro				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			seeding is a good option for slope revegetation). **Construction of surface infrastructure (e.g. access roads, change houses, etc.).** • Dust emitted during bulldozing activity can be reduced by increasing soil dampness by watering the material being removed, thus increasing the moisture content. • Material must be removed to dedicated stockpiles to be used during rehabilitation. • This hauling of materials should take place on roads that are being watered and/or sprayed with dust suppressants. • To reduce the amount of dust blown from the load bin in the haul roads, the material being transported can be watered, or the backs of the vehicles can be				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			covered with plastic tarpaulin covers. • Constricting the areas and time of exposure of pre-strip clearing in advance of construction to limit exposed soil surfaces. **General transportation, hauling and vehicle movement on site**. • Hauling of materials and transportation of people must take place on roads which are being watered and/or sprayed with dust suppressant. • In order to mitigate the impacts of the activity, the speed limit must be kept low as more dust will be generated at higher wind speeds. • Speed limits need to be observed and adhered to.				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Management should fit roads with speed humps to ensure adherence. • Application of wetting agents or application of dust suppressant to bind soil surfaces to avoid soil erosion. • The drop heights must be minimised when depositing materials to the ground. • Encourage car-pool and bulk delivery of materials to reduce the number of daily trips. • An operational water truck should effectively suppress dust on unpaved access roads. Control techniques for fugitive dust sources generally involve watering, chemical stabilization, and reducing surface wind speed through the use of windbreaks and source enclosures. • Further, the access roads on-site were identified as the second most significant source of dust				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			emissions. Therefore, three types of measures must be taken to reduce emissions from unpaved roads as follows: o Measures aimed at reducing the extent of unpaved roads, e.g., paving, o Traffic control measures aimed at reducing the entrainment of material by restricting traffic volumes and reducing vehicle speeds and o Measures aimed at binding the surface material or enhancing moisture retention, such as wet suppression and chemical stabilization.				

11.2.17 Noise impact

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Grading and building of new roads and trenches • Preparation of the footprint, digging of trenches, earthworks, and construction of the base of the plant. Earthmoving activities • Construction traffic • Construction of the plant footprint on site	• To ensure minimal noise disturbance • To ensure proper mitigation measures of noise. • To avoid noise nuisance from operating construction equipment.	• Noise Control Regulations (ECA); • SANS 10103 of 2008	• Plant structure preparation to be done during daytime only and if the prevailing ambient noise level will not be exceeded during night-time. • Construction activities to be done during daytime only and if the prevailing ambient noise level will not be exceeded during night-time. • Construction activities must take place during the daytime period only. • Where noise becomes a nuisance, management measures must be investigated and implemented to address these. • Use equipment with lower sound power levels. Install silencers for fans. Insulated	• No complaints from surrounding landowners were recorded.	• Noise monitoring • Complaints Register	• CEO • ECO • Environmental noise and vibration specialist • Engineer	• On-going during the construction phase

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			exhaust gas ducting. Acoustical treatment of the engines. • Any complaints pertaining to noise must be recorded and reported to the ECO and addressed accordingly. • Labourers must be provided with hearing protection as and when required. • Selecting equipment with lower sound power levels; • Installing silencers for fans; • Installing suitable mufflers on engine exhausts and compressor components; • Installing acoustic enclosures for equipment causing radiating noise; • Installing vibration isolation for mechanical equipment; • Re-locate noise sources to areas which are less noise sensitive, to take advantage				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			of distance and natural shielding; • Taking advantage during the design stage of natural topography as a noise buffer; • Develop a mechanism to record and respond to complaints.				

11.2.18 Visual impact

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Altering the landscape character. • Viewer sensitivity residents, motorists and tourists	• To ensure proper mitigation measures of potential visual impacts. • To maintain the site's aesthetics.	• NEMA (36 of 1998)	• All servitude areas that will be disturbed through the destruction of vegetation, for example, the establishment of the construction camp, must be replanted with endemic, indigenous species. • A hydroseeding application (mix of organic material and endemic veld grass) is recommended to be applied	• Clean and tidy site. • No complaints from the landowners and affected parties.	• Inspection Report • Complaints register	• ECO • Contractor • EO	• On-going during the construction phase.

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			over the disturbed areas as a measure of rehabilitation. • Rehabilitate disturbed areas around buildings as soon as practically possible after construction. This should be done to restrict extended periods of exposed soil. • Make use of existing access roads where possible. • Where new access roads are required, the disturbance area should be kept to a • minimum. A two-track dirt road will be the most preferred option. • Locate access routes so as to limit modification to the topography and to avoid the removal of established vegetation. • Avoid crossing over or through ridges, rivers, pans or any natural features that have visual value. This also includes centres of floral				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			endemism and areas where vegetation is not resilient and takes extended periods to recover. • Road verges that need to be cleared should be kept to a minimum. • Access routes should be located on the perimeter of disturbed areas such as cultivated/fallow lands so as not to fragment intact vegetated areas. • If it is necessary to clear vegetation for a road, avoid doing so in a continuous straight line. Alternatively, curve the road in order to reduce the visible extent of the cleared corridor. • Locate the alignment and the associated cleared servitude so as to avoid the removal of established vegetation. • Avoid a continuous linear path of cleared vegetation				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			that would strongly contrast with the surrounding landscape character. Feather the edges of the cleared corridor to avoid a clearly defined line through the landscape. • If practically possible, locate construction camps in areas that are already disturbed or • where it isn't necessary to remove established vegetation like for example naturally bare areas. • Utilise existing screening features such as dense vegetation stands or topographical features to place the construction camps and lay-down yards out of the view of sensitive visual receptors. • Keep the construction sites and camps neat, clean and organised in order to portray a tidy appearance.				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Screen the construction camp and lay-down yards by enclosing the entire area with a dark green or black shade cloth of no less than 2m height. • Shielding the sources of light by physical barriers (walls, vegetation, or the structure itself).				

11.2.19 Traffic impact

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Possible traffic increase • Car accidents. • Irregular traffic impact during construction. • Impact on road safety, congestion, wear and tear of the road surface.	• To maximise road safety and minimise congestion. • To ensure that traffic impacts as a result of the construction related activities are minimized.	• NLTA (05 of 2009)	• Effective traffic control must take place throughout the construction phase. • Access roads will be maintained by the Contractor and will ensure that access roads to the site are of a suitable quality to eliminate soil erosion and channel storm water.	• No increase in number of accidents • No complaints from the landowners and affected parties.	• Inspection Report • Complaints report	• CEO • ECO	• On-going during the construction phase.

			• Monitor adherence to traffic regulations. • Monitor drivers for use of alcohol and other substances that could impair judgment and driving. • Ensure that loads on trucks are properly secured during transport. • Schedule arrival and departure of heavy vehicles to avoid morning and afternoon peak hours.				

11.2.20 Excavation and Groundworks

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Possible erosion • Injury to humans and animals	• To prevent erosion. • To ensure safety for both human and animals.	• OHSA (85 of 1993) • NEMA (107 of 1998)	• Excavations must not be left open for longer than 14 days without soil protection measures. • Excavations must be barricaded/ fenced off at all times.	• No evidence of erosion • No incidence of animals trapped in trenches reported.	• Inspection Report • Incident report	• CEO • ECO	• On-going excavations

11.2.21 Erosion and Control

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Erosion and siltation in drainage areas. • Increase the vulnerability of the disturbed areas to erosion • Impact on soils and habitats. • Compaction of soil, leading to increased runoff rate.	• To prevent erosion and sedimentation.	• NWA (36 of 1998)	• Any erosion problems observed on site should be rectified as soon as possible using the appropriate re-vegetation and erosion control works. • The Contractor shall protect areas susceptible to erosion by installing necessary temporary and / or permanent drainage and by taking suitable measures to prevent surface water concentration into nearby roadways. • Soil must be stripped in a phased manner to retain vegetation cover for as long as possible. • Stripped topsoil shall be stockpiled separately from sub-soil and rocky material.	• No visible signs of erosion.	• Observation • Complaints register	• CEO • ECO	• On-going particularly during excavations

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Stockpiled topsoil must not be compacted and must be reused as the final soil layer. • Stockpiled soil must be protected by erosion-control berms if exposed for a period of greater than 14 days during the wet/windy season. • Topsoil stockpiles must not be contaminated with oil, diesel, petrol, waste, which may inhibit the later growth of vegetation and micro-organisms in the soil. • Soil must not be stockpiled on drainage lines or near watercourses. • The timing of clearing and grubbing must be co-ordinated as much as possible to avoid prolonged exposure of soils to wind and water erosion.				

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• To limit the introduction of alien species into the area, no soil may be imported onto site. • Where required, cut-off trenches can be installed to divert substantial run-off and prevent erosion as and when necessary. • Where new roads are constructed, water diversion berms must be constructed to prevent erosion. • Erosion Control Measures must be implemented on stockpiles where higher than 1.5m. • Regular inspections of these stockpiles should be undertaken, and any erosion damage should be repaired immediately. • The topsoil and overburden that is collected will be stockpiled in such a way that				

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			dust and water erosion is limited. • All areas not directly within the footprint of the proposed infrastructure where the soil has been compacted will need to be ripped to break up the compacted soil surface. • All re-vegetated areas should be monitored to ensure successful re-establishment of natural vegetation and to prevent invasion by alien species. • Erosion must not be allowed to develop on a large scale before effecting repairs. • All areas susceptible to erosion must be protected (e.g. silt screens, sandbags, swales, haybales etc.) and ensure that there is no undue soil erosion resultant from activities within and adjacent				

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			to the construction camp and or work areas • Storm water must not be allowed to concentrate, or flow down cut or fill slopes without erosion protection measures being put in place.				

11.2.22 Use of cement and concrete

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Soil, surface and ground water pollution.	• To conserve soils, surface and groundwater. • To minimise waste concrete from polluting the environment.	• NEMA (107 of 1998) • NEMWA (10 of • HSA	Cement and concrete are regarded as highly hazardous to the natural environment due to their high pH and the chemicals contained therein. To avoid pollution the following must be implemented: • Pre-mix concrete shall be the preferred option where possible. • If concrete mixing is undertaken on site, the	• Areas of construction are clear of all concrete residue/waste following construction	• Observation • Site Plan	• ECO • CEO	• Throughout the construction phase.

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			batching / mixing area must be properly designated, indicated on the site plan and kept neat and tidy at all times. • Batching / mixing activities must be strictly done on a permeable surface or bare ground. • Unused cement bags must be stored as hazardous waste and disposed of appropriately. • The visible remains of the concrete, either solid, or from washings shall be physically removed and disposed of appropriately at a licensed landfill site if not reused.				

11.2.23 Impact on Eco-tourism

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Impact on Existing Eco-Tourism Establishments. • Dust/noise pollution on tourism products. • Poaching of animals from hunting properties could increase. • Establishment of construction camps and the construction of the infrastructure that alter the landscape	• To ensure the minimal impacts on eco-tourism	• NEMA (107 of 1998)	• Natural screening should be created at ecotourism establishments, which may have their views impacted on by the construction or operational phases of the project. • Endemic plants should be salvaged, if possible, where areas are going to be disturbed through the destruction of vegetation, for example, the establishment of the construction camp, and kept in a controlled environment such as a nursery, for future re-planting in the disturbed areas as a measure of rehabilitation. • Rehabilitate disturbed areas around pylons as soon as practically possible after construction. This should be	• No complaints.	• Complaint register	• ECO • CEO	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			done to restrict extended periods of exposed soil. • Locate the alignment and the associated cleared servitude so as to avoid the removal of established vegetation. • Avoid, as much as possible, a continuous linear path of cleared vegetation that would strongly contrast with the surrounding landscape character. Feather the edges of the cleared corridor to avoid a clearly defined line through the landscape. • If practically possible, locate construction camps in areas that are already disturbed or where it isn't necessary to remove established vegetation like for example naturally bare areas. • Utilise existing screening features such as dense vegetation stands or topographical features to				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			place the construction camps and lay-down yards out of the view of sensitivity visual receptors. • Keep the construction sites and camps neat, clean and organised in order to portray a tidy appearance. • Keep the construction camps away from existing residents and especially lodges and tourist venues. • Make use of existing access roads where possible. • Where new access roads are required, the disturbance area should be kept to a minimum. A two-track dirt road will be the most preferred option. • Locate access routes so as to limit modification to the topography and to avoid the removal of established vegetation.				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Avoid, as much as possible, crossing over or through ridges, rivers, pans or any natural features that have visual value. This also includes centres of floral endemism and areas where vegetation is not resilient and takes extended periods to recover. • Maintain no or minimum cleared road verges. • Access routes should be located on the perimeter of disturbed areas such as cultivated/fallow lands as not to fragment intact vegetated areas. • If it is necessary to clear vegetation for a road, avoid doing so in a continuous straight line. Alternatively, curve the road in order to reduce the visible extent of the cleared corridor.				

11.2.24 Impact on Avifauna

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Loss of avifaunal habitat, species and avifaunal SCC • Displacement of priority species due to disturbance associated with construction activities.	• To ensure the preservation of Avifauna species. • Protection of fauna habitat.	• NEMA (107 of 1998)	• Development planning must ensure that loss of vegetation and disturbance are restricted within the recommended site layout footprint. • Clearly demarcate the construction footprint prior to clearing of vegetation. • Pre-construction environmental induction must be conducted to all construction staff on site to ensure that basic environmental principles are adhered. • includes awareness as to conservation and importance of SCC which have High probability of occurring on site. • Prior to the commencement of any excavations, the required disturbance	• No poaching of avifauna species	• Incident register	• ECO • CEO	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			footprint will be demarcated, and all activities will be located within the demarcated area. No vegetation disturbance to take place outside the demarcated area. • The mitigation measures proposed by the vegetation specialist must be strictly enforced. • If avian SCC nests are located, a qualified avifaunal specialist should be consulted to determine the best management options. If nests are known to have nestlings or eggs within, these should be allowed to fledge prior to the nest removal. • Design of infrastructure should be environmentally sound and all construction equipment to be utilised must be a				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• good working condition, and all possible precautions taken to prevent potential avifaunal collisions or electrocutions, and mechanical spills and/or leaks. • No hunting/trapping or collecting of avifaunal species is allowed. • The development footprint should be demarcated, and it should be ensured that no development related activities take place outside of the demarcated footprint. This final footprint area should be reviewed by an avifaunal specialist to ensure no detrimental impacts to avifaunal assemblages occur. • Any structures which may act as perching sites for birds should be installed with anti-perching spikes.				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Anti-collision devices should be installed along the powerline. These must be approved anti-collision devices that are durable as the area is prone to strong winds. • Construction activity should be restricted to the immediate footprint of the infrastructure. • Access to the remainder of the site should be strictly controlled to prevent unnecessary disturbance of priority species. • Maximum use should be made of existing access roads and the construction of new roads should be kept to a minimum.				

11.2.25 Impact on Agriculture

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Encroaching cultivated areas	• Promote local employment.	• Basic Conditions of Employment Act • Khanyazwe Flexpower External Communication Policy.	• To minimise edge effects, the project operations must be kept within the demarcated footprint areas as far as practically possible. • Avoid permanently impacting topsoil and subsoil but salvage the maximum depth of these when clearing areas for infrastructure. • Use geotextiles and contours to control soil erosion and revegetate exposed soil surfaces where possible. • Construction vehicle movement should be limited to within the project perimeter fence to avoid unnecessary compaction and erosion of adjacent soils. • Always strip a suitable time before commencing construction activities to	• No community riots	• HR Record	• PM	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			avoid soil loss and contamination. • The proposed development within the study area should aim to minimise the impact on soils used for cultivation as far as practically possible. • Unnecessary trafficking and movement over the areas targeted for construction must be avoided, especially heavy machinery • No site-clearing activities should take place during periods of heavy rainfall. • Loosening of the soil through ripping and discing before the stripping process is recommended to break up crusting. • Compacted soils should be ripped at least 20cm to alleviate. • Access roads should be aligned to the existing road				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			as far as practically possible to avoid further agricultural impact and unnecessary soil disturbance. • Disturbed areas adjacent to the footprint area should be revegetated with indigenous grass mix to limit potential soil compaction.				

11.2.26 Air quality

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria/	Responsible Agent	Monitoring Frequency
• Impact of controlled total suspended particulate, fine particulates and gaseous emissions during • construction	• To protect human health • Protection of the environment.	• OHSA (85 of 1993) • NEM:AQA (39 of 2004).	• Mitigation through administrative control and best industry practise.	• No complaints	• Inspection Report • Complaints register	• ECO • CEO	• Continuous during the operational phase.

11.2.27 Climate Change

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• GHG emissions • Increased temperature and heatwaves can pose a health risk to employees. • Wildfires may cause physical risks to employees.	• To protect human health • Protection of the environment.	• OHSA (85 of 1993) • NEM:AQA	• Optimising of construction activities and logistics – performing as efficient and effective as possible. • Implementing a fuel management strategy, which encourages more efficient use of vehicles, planning, logistics, driver education and maintenance. • Optimising energy utilisation efficiency. • Utilising the cleanest fuel economically available. • Selecting the best power generation and pollution control technology for the chosen fuel. • Utilising high-performance monitoring and process control techniques, good design and maintenance of the combustion system.	• No wild fires • No complaints relating to emissions and human health	• Complaints register • Emission records	• ECO • PM	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Developing and implementing of a GHG management plan. • Developing and implementing a leak detection and repair program. • Integrating the risk and management of heat related illnesses in the Occupational Health and Safety Plans. • Educating staff to recognise early symptoms of heat stress. • Monitoring of temperature and humidity levels. • Providing adequate cooling and ventilation. • Introducing systems to limit exposure to heat. • Assessing the risk of wildfires in relation to infrastructure and facilities.				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Implementing adequate monitoring, fire detection and suppression systems.				

11.2.28 Social Impact

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Influx of jobseekers to the area where they see construction activities starting • Inflow of Temporary workers. • Repurposing this agricultural land, leading to the loss of these jobs. • Loss of Agricultural Land	• Promote local employment.	• Basic Conditions of Employment Act • Khanyazwe Flexpower External Communication Policy.	• Engage with local communities and stakeholders throughout the project's development to gather input, address concerns, and ensure the project aligns with community needs and priorities. • Implement policies prioritising hiring local residents for construction and operational roles. • Establish training programs to equip local workers with	• No community riots	• HR Record	• PM	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			the skills needed for the project. • Develop procurement policies that prioritise sourcing goods and services from local suppliers. • Work with local suppliers to build their capacity to meet the project's needs. • Create programs that offer alternative livelihoods for individuals affected by the displacement of agricultural activities, such as training in new skills and support for starting new businesses. • Providing adequate training and safety equipment for all construction workers. • Establishing clear communication channels with local communities to inform them of potential risks and disruptions.				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Implementing traffic management plans to minimise the impact of construction vehicles. • Implement measures to control dust, noise, and emissions from construction activities, such as using dust suppressants and noise barriers. • Monitor air and noise pollution levels and take steps to reduce them. • Ensuring construction sites are secure and safe for workers and nearby residents. • Establish a grievance mechanism for property owners to raise concerns or complaints about access and compensation. • Develop a health and safety management system for the				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			construction and operational phases. • Implement a robust monitoring and evaluation framework to assess the project's social, economic, and environmental impacts and ensure effective mitigation measures. • Regularly review and update the project's plans and strategies to adapt to changing circumstances and community needs.				

11.2.29 Construction Site clean-up and rehabilitation

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Erosion • Spread of alien invasive plant species. • Visual impact	• Minimise damage to topsoil and environment at tower positions.	• NEMBA (10 of 2004) • NEMA (107 of 1998)	• The Contractor must ensure that all temporary structures, materials, waste, and facilities used for construction activities are	• No loss of topsoil due to construction activities	• Rehabilitation Plan • Observation	• ECO • CEO	On completion of construction

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	• Successful rehabilitation of all damaged areas. • Prevention of erosion. • To ensure that the site is fully rehabilitated to its original state. • To ensure that the site is clean and neat. • Minimize claims and litigation from landowners.		removed upon completion of the project. • Fully rehabilitate all disturbed areas according to an approved rehabilitation plan. • All replaced equipment and excess gravel, stone, concrete, bricks, temporary fencing, and the like shall be removed from the site upon completion of the work. • No waste materials of any nature shall be buried on the site or on any other land within the site. • Re-seeding shall be done on disturbed areas per the Rehabilitation Plan and as directed by the CEO and ECO. • The Contractor shall dispose of all excess material from the site at a registered disposal facility.	• All disturbed areas successfully rehabilitated within three months of completion of the contract • No visible erosion scars three months after completion of the contract. • No evidence of rubble or litter left on site.			

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Reusable material will be taken off site and reused elsewhere.				

11.2.30 Monitoring of EMPr and compliance

Objective	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
To implement an ongoing monitoring and performance audit program.	• A proper monitoring program needs to ensure the correct and successful implementation of impact mitigation measures to reduce adverse environmental impacts. • Monitoring of the general implementation of/adherence to the EMPr shall be the responsibility of the ECO. • Reporting on adherence/compliance to stipulations, as communicated to Contractors, shall take place during scheduled site meetings. • Put in place non-conformance, prevention and corrective procedures.	• Observation • Checklist • Daily Register • Attendance Registers • Photographic evidence • Audit and Monitoring Reports	• ECO • CEO	On-going during construction.

11.3 OPERATIONAL ENVIRONMENTAL MANAGEMENT PROGRAMME

11.3.1 Noise Impact

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Noise from the plant • Fan cooling radiators – acoustic louvres. • Noise from Ventilation intake, Step up transformers, Emergency generator	• To reduce noise impact	• Environmental, Health and Safety (EHS) Guidelines, World Health Organisation (WHO, 2002); • Noise Regulations 1992. • SANS 10357 of 2004 – The calculation of sound propagation by the concave method (SANS, 2004); • SANS 10210 of 2004 – Calculating and predicting road traffic noise (SANS, 2004); • SANS 10328 of 2008 – Methods for	• Noise monitoring on an annual basis to identify noise intrusion levels on a pro-active basis. • Acoustic screening measures in place and fully operational according to acoustic screening methods. • Selecting equipment with lower sound power levels; • Installing silencers for fans; • Installing suitable mufflers on engine exhausts and compressor components; • Installing acoustic enclosures for	• No noise Complaints	• Complaints register	• EM • EO	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
		environmental noise impact assessments (SANS, 2008); and • SANS 10103 of 2008 – The measurement and rating of environmental noise with respect to annoyance and to speech communication (SANS, 2008).	equipment causing radiating noise; • Installing vibration isolation for mechanical equipment; • Re-locate noise sources to areas which are less noise sensitive, to take advantage of distance and natural shielding; • Taking advantage during the design stage of natural topography as a noise buffer; • Develop a mechanism to record and respond to complaints				

11.3.2 Ground and Surface Water

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Deterioration in water quality	• To reduce impact on water quality	• NWA (36 of 1998)	• Stormwater Management Plan must be effectively implemented during operation. • Clean and dirty water should at all times be kept separate. No dirty water may be discharge into any water resources. • Regular water infrastructure maintenance and inspection will need to be undertaken. • Should water be treated, the water should meet the applicable DWS standards. Surface water quality monitoring must be conducted regularly.	• No deterioration of water quality	• Inspection Report • Water monitoring reports	• EM • EO	• Ongoing

11.3.3 Impacts on Avifauna

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Collision of birds with infrastructures.	• To reduce impact on avifauna.	• NEMA (107 of 1998)	• Mitigation for collisions involves routing the line correctly as well as installing anti-collision marking	• No deterioration	• Inspection Report	• EM • EO	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Electrocution of birds. • Loss of avifaunal habitat, species and SCC.			devices to the line where necessary. • Only a bird friendly pylon structure is permissible for the construction of the new proposed power line. This will ensure that large birds can perch and roost safely on the hardware. • Fitment of devices on the earth wires to make the lines more visible. • All construction and maintenance activities should be carried out according to generally accepted environmental best practices. • The bird flight diverters should be installed on the line, for the span length on the earth wire. Light and dark colour devices must be alternated to provide contrast against both dark and light backgrounds respectively. • These devices must be installed as soon as the conductors are strung.	of water quality	• Water monitoring reports		

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• During operational phase, any nest found on the lines should be managed in accordance with Eskom Distribution Nest Management Guidelines and relevant provincial and national legislation. • In order to prevent the electrocution of any birds, on the poles, all poles should be fitted with a standard type, Eskom approved “bird perch” at the top of the pole. This will provide ample safe perching space for any bird well clear of the dangerous hardware. • All vehicles should be restricted to travelling only on designated roadways to limit the ecological footprint of the development activities. • Continuous monitoring (monthly) should be undertaken, and a record of potential bird electrocutions or collisions should				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			be kept and reported to the ECO. Mitigation measures should be updated annually depending on monitoring results.				

11.3.4 Impacts on Agriculture

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Increased runoff, erosion, and consequent loss of land capability • Constant traffic and frequent disturbances of soils resulting in soil compaction	• To improve land capability of the area.	• NEMA (107 of 1998)	• Loosening of the soil through ripping and discing prior to the stripping process is recommended to break up crusting. • Unnecessary trafficking and movement over the areas targeted for maintenance must be minimised as far as practically possible, especially heavy machinery. • Disturbed areas adjacent to the footprint area should be revegetated with indigenous grass mix to limit potential soil compaction.	• No deterioration of water quality	• Inspection Report • Water monitoring reports	• EM • EO	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Access roads should be inspected and maintained as necessary.				

11.3.5 Eco-Tourism

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Impact on Existing Eco-Tourism Establishments. • Dust/noise pollution on tourism products.	• To ensure the minimal impacts on eco-tourism	• NEMA (107 of 1998)	• Avoid, as much as possible, changing the alignment's direction too often in order to minimise the use of the self-supporting strain tower. This tower type is the most visually intrusive as the steel lattice structure is denser than the other two tower types, hence creating more visual obstruction. • Rehabilitate disturbed areas around pylons as soon as practically possible after construction. This should be done to restrict extended periods of exposed soil.	• No complaints.	• Complaint register	• ECO • CEO	• Throughout operational phase

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Establish an ecotourism/conservation forum for the project by engaging with all tourism associations (local and provincial) to ensure that ongoing communication is provided to all role-players and to ensure that all ecotourism products are aware of the construction timeframes. This will enable ecotourism destinations to plan accordingly in terms of occupancies and potential down times. • Provide a dedicated contact point for the purpose of providing an opportunity for product owners to obtain information on the project and to provide information on impacts or problems on an ongoing basis. A response structure should also be setup to support this contact				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			point. This will enable localized impacts to be mitigated more effectively and efficiently. • All impacts on fauna or flora within high conservation/ecotourism value land should be rehabilitated immediately to a completely natural state. This should be done by managing removed vegetation in a manner which can be re-planted. • Compile booklets which interpret the project and where the power is going and what value the project is adding to the local and provincial economy. Very often, when eco-tourists see the value in a development project, they are willing to accept the associated impact on the environment.				

11.3.6 Impacts on visual

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Impacts on residents and tourists.	• To improve visual capability of the area.	• NEMA (107 of 1998)	• Plant fast-growing endemic trees along the building yard and service roads. The trees will with time create a screen and increase the biodiversity of the area. • It is also recommended that trees be planted in areas where there is a direct view of the power station to reduce the visual impact of viewers. • Make use of existing access roads where possible. • Shielding the sources of light by physical barriers (walls, vegetation, or the structure itself). • Directing light sources away from residential units and roads. • Limiting mounting heights of lighting fixtures. • Making use of minimum lumen or wattage in fixtures.	• No complaints.	• Inspection Report	• EM • EO	• Ongoing throughout operation

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Making use of down-lighters or shielded fixtures. • Making use of low impact lighting. • Making use of motion detectors on security lighting. This will allow the site to remain in relative darkness, until lighting is required for security or maintenance purposes.				

11.3.7 Climate change

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Water scarcity and draught can constrain operations. • Floods, cyclones and storms may cause physical risks to employees. • Lightning may cause damage a short circuit in transmission lines.	• To protect human health • Protection of the environment.	• OHSA (85 of 1993) • NEM:AQA (39 of 2004).	• Conducting regular monitoring of operational water requirements and available resources. • Developing a contingency response plan in the event of short, medium, or long-term water shortages. • Developing a water policy as to manage and minimise	• No wild fires • No damage to infrastructures as a result of flood events	• Complaints register	• ECO • PM	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• High wind speeds and gusts may damage infrastructure.			water usage. Setting clear objectives and targets to improve efficiency. • Considering community participation with regards to water infrastructure and management. • Conducting a site-specific risk assessment to identify areas vulnerable to flooding and infrastructure vulnerable to cyclones and storms. • Developing a contingency response plan should operations become inaccessible due to floods. • Increasing lightning protection of the site. • Conducting a site-specific risk assessment to identify areas vulnerable to high wind speeds and gusts. • Integrating the possible effects of floods and storms on water quality and the				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			possible spread of disease in the Occupational Health and Safety Plans.				

11.3.8 Air Quality

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria/	Responsible Agent	Monitoring Frequency
• Impact of PM10, SO2 and VOC emissions during normal operations • NO2 emissions during normal operations	• To protect human health • Protection of the environment.	• OHSA (85 of 1993) • NEM:AQA (39 of 2004).	• Mitigation through administrative control and best industry practise.	• No complaints	• Inspection Report • Complaints register	• ECO • CEO	• Continuous during the operational phase.

11.3.9 Flora and Fauna

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria/	Responsible Agent	Monitoring Frequency
• Protection of the vegetation and habitat • Direct faunal impacts	• To conserve vegetation and listed or protected species. • To ensure the control of alien invasive species and to ensure that rehabilitation is as close as possible to the original state.	• NEM: BA (10 of 2004)	• Make use of existing access routes as much as possible, before new routes are considered. Any selected "new" route must be authorized, minimizing disturbances to undisturbed areas. • The use of herbicides is not recommended (opt for mechanical removal). • An Invasive Alien Plant Management Plan must be compiled and implemented. This should regularly be updated to reflect the annual changed in IAP composition.	• No disturbance of protected flora and fauna. • Minimal disturbance of vegetation. • No alien species infestation. • Re-vegetation of areas disturbed and not undergoing development.	• Inspection Report • Complaints register.	• ECO • CEO	• Continuous during the operation phase.

11.3.10 Traffic

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Index	Monitoring Criteria	Responsible Agent	Monitoring Frequency

• Possible traffic increase during operations • Car accidents.	• To ensure that traffic impacts as a result of the operation related activities are minimized.	• NLTA (05 of 2009)	• Effective traffic control must take place throughout the operational phase. • Monitor adherence to traffic regulations. • Monitor drivers for use of alcohol and other substances that could impair judgment and driving. • Ensure that loads on trucks are properly secured during transport. • Schedule arrival and departure of heavy vehicles to avoid morning and afternoon peak hours.	• No complaints from the landowners and affected parties.	• Inspection Report • Complaints report	• CEO • ECO	• On-going during the operational phase.

11.3.11 Waste Generation and Handling

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• The use of diesel, oil and other hazardous chemical substances may lead to the	• To prevent contaminati on of soil	• CARA (43 of 1983) • NEMA (107 of 1998) • NEMWA (59 of 2008)	• All hydrocarbons should be stored in designated, bunded areas with a capacity of at least 110% of the volume stored. • Spill kits should be readily available, and all employees must	• No spillages of hazardous chemicals	• Incident report • Inspection Report	• EM • EO	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
contamination of soils		• HSA	be trained in the utilisation thereof. • Should a spill take place the area should be cleaned immediately, and the contaminated area will be rehabilitated as appropriate. In the event of a major spill that could result in major soil and water contamination the DWS should be informed immediately, and a remediation strategy should be enforced. • Employees will be educated by means of training and the Environmental Awareness Plan to make them aware of the necessity to prevent spillages by the implementation of good housekeeping practices. The management of chemicals and hydrocarbons should form part of the emergency preparedness and response programme. • The management of chemicals and hydrocarbons should form part of the emergency				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			preparedness and response programme. • No activities associated with hydrocarbons and or chemicals (i.e. wash bays etc.) may be undertaken outside of an effectively designed contained area.				
• The generation of waste may lead to soil contamination Waste accumulation may have a negative visual impact.	• To prevent contamination of soil • Prevent visual intrusion	• HSA • NEMWA (59 of 2008) • Norms and standards for Storage of Waste	• A detailed waste management strategy will be established and implemented, which will clearly demarcate the containments for different waste types. These containments will be colour-coded. • Waste management must form a detailed component as part of the induction process provided by Khanyazwe Flexpower . • Khanyazwe Flexpower must adopt a cradle-to-grave approach to ensure that the waste is removed and disposed of in a prescribed and correct manner.	• No spillages of hazardous chemicals • No visual intrusion from waste	• Incident report • Inspection Report • Observation	• EM • EO	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Littering and contamination of water sources during farming activities must be mitigated by effective camp management. • Regular safety checks and maintenance of the storage tanks should be undertaken by suitably qualified safety officers. • In addition, the storage tanks and any other areas where spillages and leakages could occur, should be contained within a bunded area. • Any rainfall and stormwater collected within the bunded area should remain separate from other stormwater and will need to be treated to an acceptable level prior to release. • It is also recommended that the Environmental Best Practice Specifications published by the DWAF (Integrated Environmental Management Series, Environmental Best Practice Specifications: Operations, Edition				

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			3, DWAF 2005) be adopted for this development.				
• The improper storage procedures of diesel, oil and other hazardous chemical substances may lead to the contamination and of destruction of surface water, flora and fauna	• To prevent destruction of flora and fauna by hazardous chemicals	• HSA • NEMBA (10 of 2004) • NEMA (107 of 1998) • NEMWA (59 of 2008)	• Areas used for storage and handling of waste must be properly fenced and kept safe to limit the accessibility of the area for any fauna. • All hydrocarbons should be stored in designated, bunded areas with a capacity of at least 110% of the volume stored. • Spill kits should be readily available, and all employees must be trained in the utilisation thereof. Should a spill take place the area should be cleaned immediately, and the contaminated area will be rehabilitated as appropriate. • Employees will be educated by means of training and the Environmental Awareness Plan to make them aware of the necessity to prevent spillages by the implementation of good	• No damage to flora and fauna due to chemicals	• Incident report • Inspection Report • Toolbox talk	• EM • EO	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			housekeeping practices. The management of chemicals and hydrocarbons should form part of the emergency preparedness and response programme. • The management of chemicals and hydrocarbons should form part of the emergency preparedness and response programme. • In the event of a major spill that could result in major soil and water contamination the DWS should be informed immediately, and a remediation strategy should be enforced. • No activities associated with hydrocarbons and or chemicals (i.e. wash bays etc.) may be undertaken outside of an effectively designed contained area.				
• The handling and storage of fuel creates a fire risk.	• To prevent uncontrolled fires	• NEMWA (59 of 2008) • HSA	• There shall be an emergency preparedness plan is in place in order to fight accidental fires	• No fires	• Incident report	• EM • EO	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
This could negatively impact the local fauna.		• NEMBA (10 of 2004)	should they occur. The induction and awareness programmes will address fire-related issues. • The adjacent landowners/ users/ managers should also be informed and/or involved. • There must be sufficient fire-fighting equipment. This equipment must fulfil the South African Occupation Health and Safety requirements. All vegetation adjacent to the fuel storage tanks will be continually removed. • All provisions relating to fire safety will be related during the induction and awareness training programme.		• Inspection Report		
• Hazardous chemical spills as well as seepage from the workshop and wash bay may reach groundwater,	• To prevent groundwater contamination from hazardous chemicals	• HSA • NWA (36 of 1998) • NEMA (107 of 1998)	• Maintenance features should be designed properly. Good housekeeping practices will be in place in order to prevent accidental spillage.	• No contamination of groundwater	• Water monitoring report • Inspection Report	• EM • EO	• Ongoing

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
thereby impacting its quality.							
• Effluent will contaminate soil and ground water.	• To prevent effluent contaminati on	• NEMWA (10 of 2004)	• Chemical toilets must be supplied (1 per 15 persons) and must be regularly cleaned and maintained. • The ablution facilities must be at least 100m away from the watercourses and associated buffers. • All ablution facilities must be anchored to prevent them from being toppled by the wind. • Ensure site where toilets are disposed have necessary legislative approvals	• No contamination of soil and ground water.	• Water monitoring report • Inspection Report	• EM • EO	• Ongoing

11.4 DECOMMISSIONING PHASE

The decommissioning phase is not anticipated at this stage; it is likely that the development will be in operation for more than 20 years. However, should the project need to be decommissioned for any reason, the decommissioning activities would need to comply with the legislation relevant at the time.

11.4.1 Removal of Infrastructure

The table below indicates the Management Measures and Action Plans related to activities associated with the removal of Infrastructure.

Following the termination of the proposed power plant activities, it is planned that all infrastructures will be decommissioned and removed from the site in a systematic and regulated manner. The following activities will be conducted during the decommissioning phase of the project:

11.4.2 Linear infrastructure

- Linear infrastructure (e.g., roads, and powerlines) will be removed if they inhibit land use at decommissioning. Where possible, infrastructure will remain for future projects as determined by Khanyazwe Flexpower or for social investment opportunities. This will be decided in conjunction with the area's Integrated Development Plan (IDP) and the local authorities (e.g., municipality).
- All fences erected around the project area will be dismantled and either disposed of at a permitted disposal site or sold as scrap (provided the Khanyazwe Flexpower no longer requires these structures). Fences erected to cordon off dangerous excavations will remain in place and will be maintained as and when required.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
Waste Management							
• The removal of all infrastructures (Diesel storage) will produce waste, which may lead to soil contamination.	• To prevent soil contamination	• NEMWA (107 of 1998)	• The detailed waste management strategy implemented during construction and operation must be continuously implemented. • Khanyazwe Flexpower must adopt a cradle-to-grave approach to ensure that the waste is removed and disposed of in a prescribed and correct manner.	• No soil contamination from waste	• Inspection Report •	• EM	• During decommissioning
Dust							
• Demolition and Removal of all infrastructure (incl. transportation off-site).	• To reduce the impact on ambient air quality.	• NEM: AQ; • National Dust Control Regulations; • Ambient Air Quality Guidelines and Standards	• The contractor must prepare a dust control method statement to be approved by the ECO before commencement. • Dust suppression must be conducted regularly;	• No excessive dust	• Dust monitoring • Complaints register • Inspection Report	• EO • EM	• During demolition

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• The Contractor must avoid unnecessary dust generation during demolition. • Use demolition methods with the least dust				
Noise							
• Removal of structures, equipment and machinery • Earthworks and planting of vegetation	• To reduce noise impact	• Environmental, Health and Safety (EHS) Guidelines, World Health Organisation (WHO, 2002); • Noise Regulations 1992. • SANS 10357 of 2004 – The calculation of sound propagation by the concave method (SANS, 2004);	• Demolition activities to be done during daytime periods only. • Earthworks and planting of vegetation to be done during daytime periods only. • Selecting equipment with lower sound power levels; • Installing silencers for fans; • Installing suitable mufflers on engine exhausts and compressor components; • Installing acoustic enclosures for equipment causing radiating noise; • Installing vibration isolation for mechanical equipment;	• No noise Complaints	• Complaints register • Inspection report	• EM • EO	• Ongoing

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
		• SANS 10210 of 2004 – Calculating and predicting road traffic noise (SANS, 2004); • SANS 10328 of 2008 – Methods for environmental noise impact assessments (SANS, 2008); and • SANS 10103 of 2008 – The measurement and rating of environmental noise with respect to annoyance and to speech	• Re-locate noise sources to areas which are less noise sensitive, to take advantage of distance and natural shielding; • Taking advantage during the design stage of natural topography as a noise buffer; • Develop a mechanism to record and respond to complaints				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
		communication (SANS, 2008).					
Hydrocarbons							
• The utilisation of hydrocarbons and other chemicals may lead to the contamination of soils.	• To prevent soil contamination	• NEMWA (107 of 1998) • HSA	• The detailed waste management strategy implemented during construction and operation must be continuously implemented. All hydrocarbons should be stored in designated, bunded areas with a capacity of at least 110% of the volume stored. • Spill kits should be readily available, and all employees must be trained in the utilisation thereof. Should a spill take place the area should be cleaned immediately, and the contaminated area will be rehabilitated as appropriate. • Employees will be trained on the Environmental Awareness Plan to make them aware of	• No soil contamination from hydrocarbons	• Inspection Report	• EM	• During decommissioning

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			the necessity to prevent spillages by the implementation of good housekeeping practices. The management of chemicals and hydrocarbons should form part of the emergency preparedness and response programme. • The management of chemicals and hydrocarbons must forms part of the emergency preparedness and response programme. • In the event of a major spill that could result in major soil and water contamination the DWS should be informed immediately, and a remediation strategy should be enforced. • No activities associated with hydrocarbons and or chemicals (i.e. wash bays etc.)				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			may be undertaken outside of an effectively designed contained area.				
Alien Invasive species							
• Increase in alien invasive species due to the removal of infrastructure activities, the potential for the spreading of invasive alien plant species increase.	• To prevent distribution of alien invasive species.	• NEMBA (10 of 2004)	• Khanyazwe Flexpower must maintain the regular weed-control programme to eradicate existing invader plants and to prevent new invasions during operation and decommissioning phases.	• No increase in alien invasive species	• Alien Invasive Management Plan • Observation	• EO • EM	• During decommissioning
Agriculture							
• Dismantling and removal of the power plant and other on-site buildings, equipment, and facilities.	• To protect soil.	• NEMA (107 of 1998)	• The area should be revegetated with indigenous vegetation to help with erosion and dust control as required or returned to agricultural use. • Establish natural drainage patterns as pre-construction through recontouring and revegetation.	• Plant growth • No un-compacted soil • No excavations left unattended.	• Auditing	• ECO • EO	• Decommissioning phase

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Disturbances of soils resulting in soil compaction			• Dismantled equipment should be recycled, and an approved service provider should appropriately landfill non-recyclable material. • Any portions of the site with compacted soil should be recompacted and any excavations backfilled with soil to restore the site for future use.				
Surface water							
• Possible contamination of surface water due to removal of infrastructure.	• To avoid contamination of the surrounding surface resources.	• NEMWA (107 of 1998) • NWA (36 of 1998)	• The detailed waste management strategy implemented during construction and operation must be continuously implemented. All hydrocarbons should be stored in designated, bunded areas with a capacity of at least 110% of the volume stored. • Spill kits should be readily available, and all employees	• No contamination of water resources	• Water monitoring report • Inspection Report • Incident report	• EO • EM	• During decommissioning

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			must be trained in the utilisation thereof. Should a spill take place the area should be cleaned immediately, and the contaminated area will be rehabilitated as appropriate. • Employees will be trained on the Environmental Awareness Plan to make them aware of the necessity to prevent spillages by the implementation of good housekeeping practices. The management of chemicals and hydrocarbons should form part of the emergency preparedness and response programme. • No activities associated with hydrocarbons and or chemicals (i.e. wash bays etc.) may be undertaken outside of an effectively designed contained area.				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• The management of chemicals and hydrocarbons forms part of the emergency preparedness and response programme. • In the event of a major spill that could result in major soil and water contamination the DWS should be informed immediately, and a remediation strategy should be enforced				
Visual							
• The removal of will improve the visual quality of the site by removing the visual incongruity. (Positive)	• To improve visual aesthetics	• NEMA (107 of 1998)	• Rehabilitate disturbed areas around buildings as soon as practically possible after construction. This should be done to restrict extended periods of exposed soil. • Plant fast-growing endemic trees along the building yard and service roads. The trees will with time create a screen	• Improved visual impact • No visible waste	• Inspection Report	• EO • EM	• During decommissioning

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			and increase the biodiversity of the area. • It is also recommended that trees be planted in areas where there is a direct view of the power station to reduce the visual impact of viewers				
Air Quality							
• Air quality impact as the results of the following activities. • Demolition and Removal of all infrastructure (incl. transportation off site). • Rehabilitation (spreading of soil, revegetation and profiling/contouring)	• To reduce the impact on ambient air quality	• NEM: AQ; • NEM:AQA: National Dust Control Regulations; • Ambient Air Quality Guidelines and Standards	• Demolition must not be performed during windy periods as dust levels and the area affected by dust fallout will increase. • Revegetation of exposed areas for long-term dust and water erosion control is commonly used and is the most cost-effective option. • Dust suppression of roads being used during rehabilitation must be enforced. • The rehabilitation by vegetating must begin during	• No complaints from landowners	• Dust monitoring • Complaints register; and • Inspection Report	• EM	• During decommissioning

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			the operational phase already as the objective is to minimise the erosion. • These measures must be aimed to reduce the potential for fugitive dust generation and render the impacts on ambient air quality negligible.				

11.4.3 Landscaping and Rehabilitation

The following Management Measures and Action Plans relates to activities associated with:

- Recovery of all saleable infrastructure;
- Demolition and removal of all buildings and structures;
- Ripping of all compacted areas, which will be followed with amelioration and vegetation;
- Amelioration and vegetation of all disturbed areas;
- Maintenance of all re-vegetated areas up until such areas initiate succession and create a sustainable cover;
- Monitoring of key environmental variables (i.e. soils, vegetation, groundwater and surface water) in order to demonstrate stability during decommissioning of rehabilitated areas.

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Ripping and topsoil replacement will restore the soil physical characteristics prior to re-vegetation. This is a positive impact to the environment. With the completion of the rehabilitation, wetland function will slowly improve as the disturbances will be reduced.	• To promote revegetation on site	• NEMBA (107 of 1998)	• Compacted soils will be ripped, and topsoil will be replaced. After the topsoil has been replaced the area should be ameliorated and seeded, should self-succession of vegetation not take place. Only species indigenous to the area will be included. • The recovered soils should be re-used to rehabilitate the processing plant footprint. • A short-term fertilizer programs should be based on the soil chemical status after levelling and should consists of a pre-seeding lime and fertilizer application, an application with the seeding process as well as a maintenance application for 2 to 3 years after rehabilitation or until	• Ripped topsoil • Improved revegetation	• Observation	• EM	• During rehabilitation

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			the area can be declared as self-sustaining by an appropriately qualified soil scientist.				
• Soil compaction	• To prevent compaction of soils on site	• CARA (43 of 1983)	• All areas not directly within the footprint of the proposed infrastructure where the soil has been compacted will need to be ripped to break up the compacted soil surface. This will aid infiltration and decrease run-off. All ripped areas need to be revegetated with a suitable mix of plant species as determined by a qualified botanist. All re-vegetated areas should be monitored to ensure successful re-establishment of natural vegetation and to prevent invasion by alien species.	• No compaction	• Inspection Report	• EM • EO	• During rehabilitation

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Re-vegetation will be undertaken on the decommissioned and rehabilitated areas. This will be a positive impact to the flora and fauna of the area.	• Improve revegetation during decommissioning	• NEMBA (10 of 2004)	• Compacted soils will be ripped, and topsoil will be replaced. After the topsoil has been replaced the area should be ameliorated and seeded, should self-succession of vegetation not take place. Only species indigenous to the area will be included. Remove alien vegetation post decommissioning, with long term follow-up afterwards.	• Re-vegetation on site	• Inspection Report	• EM	• During rehabilitation
• Improvement in the visual impact of the area	• To improve visual capability of the area.	• NEMA (107 of 1998)	• Rehabilitate disturbed areas around buildings as soon as practically possible after construction. This should be done to restrict extended periods of exposed soil. • Plant fast-growing endemic trees along the building yard and service roads. The trees will with time create a	• No complaints.	• Inspection Report	• EM • EO	• Ongoing throughout rehabilitation

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			screen and increase the biodiversity of the area. • It is also recommended that trees be planted in areas where there is a direct view of the power station to reduce the visual impact of viewers				
• Fugitive dust emissions from the rehabilitation activities will negatively affect the air quality.	• To prevent dust generation	• Dust Regulations • NEMA (107 of 1998)	• A dust management program must be continuously implemented. Dust suppression techniques will be implemented.	• No visible dust from site activities • Complaints from surrounding landowners	• Complaints Register • Inspection Report	• EM	• During rehabilitation

12 ENVIRONMENTAL AWARENESS PLAN

2.1.1. Communication Sectors

The environmental risks for each phase of the project will be communicated to the Khanyazwe Flexpower Environmental Manager, Environmental Officer and the appointed Contractors.

2.1.2. Management Sector

A workshop will be conducted to inform all management of the risks associated with the proposed development activities. The risks for all aspects will be explained, and the appropriate management options will be discussed. The workshop will also elaborate on the monitoring programs that will be implemented to identify and monitor the project area's level of impact on the environment and discuss various remediation actions should there be a deterioration. The evaluation process is integral in the assurance that the activities reduce any possible environmental risks associated with the operation.

The workshop will be conducted prior to the construction phase to ensure that all risks are discussed before there is any chance of the impacts occurring. The workshop may be repeated at certain stages during the life of the project in the case of new employees.

2.1.3. Administrative Sector

The communication of the environmental risks to the administrative sector will occur through a workshop / inductions This workshop will seek to explain the following necessary actions:

- Risks associated with each aspect will be discussed to ensure that the project's actions may impact the environment.
- The mitigation of environmental risk will be elaborated on. It is important that each person understands the management strategies, as this ensures that the impact on the environment is kept to a minimum.
- This workshop will take place before the construction phase begins, ensuring a full understanding of the project and its associated environmental risks before any construction activity. The course will be repeated at the beginning of the operational phase, and the material will be integrated into the induction for new personnel.
- The following communication channels and media will/can be used to communicate environmental issues within Khanyazwe Flexpower :
    - Project Team Meetings: The Project Manager communicates information to senior management on environmental issues and the information is minutes/recorded.
    - SHE Meetings: 'Environmental issues' should be an agenda item on the plant and section monthly safety, health & environmental meeting agendas.

- **Publications**: Leaflets, posters, etc., are produced by the relevant department or other designated persons for use on notice boards and distribution.
- **EMS Database** (if established): Feedback from line management on objectives, targets, and actions.
- Daily/ Weekly Safety Meeting: All meetings are scheduled to commence with a discussion on safety, health, and environmental topics.

2.1.4. Construction personel

Personnel associated with the construction activities will attend an induction meeting to be facilitated by the ECO to ensure that each person is aware of the environmental risks/impacts associated with the project. This induction will form part of the health and safety induction. This induction will explain and describe the relevant phases of the project as well as the environmental risks that may occur during these phases. The environmental risks of each aspect, as well as the mitigation, will be elaborated on.

2.1.5. Contractors

The Contractor's health and safety induction program will add an environmental awareness section. The environmental induction will focus on activities that carry an environmental impacts, actions to be taken to reduce these impacts, and procedures to be followed in the event of an incident.

12.1 METHODS OF COMMUNICATION

12.1.1 Induction

All full-time personnel and Contractors are required to attend an induction session. Employees are inducted when they start work and when they return from leave. Any contractor who works for 24 hours or more is required to undergo the respective induction training. These workshops will be conducted in English and one of the local languages applicable to the Contractors employees. This induction will form part of the health and safety induction.

The induction sessions will address environmental issues and aspects related to the operation and other relevant phases. All environmental impacts and aspects and their mitigatory measures will be discussed, explained, and communicated to employees. The induction sessions will be modified according to the level of employees attending so that all employees gain a suitable understanding of environmental issues and pollution.

12.1.2 Environmental Symposiums

Environmental symposiums can be held with management and selected groups of supervisors/foremen and/or Khanyazwe Flexpower representatives. These will take the form of an open discussion between the relevant department and these individuals. The symposiums will aid in generating environmental awareness at all levels and assist the relevant department in defining and identifying new environmental issues, concerns, and pollution sources.

2.1.6. In-house Training

In-house training sessions will be held with relevant employees. The training sessions will be determined by the relevant department and will allow employees to participate in determining what the environmental issues and concerns are with regard to their specific occupation. Education with regard to environmental incident reporting will be detailed at these sessions.

2.1.7. On the Job Training

On-the-job training is an essential tool in environmental awareness. Employees will be given details of the expected environmental issues and concerns specifically related to their occupation. Employees will be trained on how to respond if an environmental problem or source of environmental pollution arises. The training will be ongoing, and all new employees will be provided with the same standard of training as existing employees.

2.1.8. General Training and Skills Development

Human Resources Development Programmes will include appropriate training and skills development programs as required by the workforce in support of operation-specific business plans. Training will be offered in portable skills, being competencies that will enable employees to find jobs elsewhere within the industry, or to become self-employed. Basic environmental and pollution control skills will be included in this training.

2.1.9. Environmental Open Days

Khanyazwe Flexpower 's Environmental Management and liaison departments will arrange environmental open days at least once a year during construction. Open days will be utilized to discuss environmental issues less formally, allowing employees to participate in environmental management by educating them about environmental pollution and waste.

2.1.10. Environmental Talk Topics

The Contactor Environmental Officer must ensure daily toolbox talks. The Khanyazwe Flexpower EO must undertake monthly Environmental Toolbox Talks with the different working teams to raise awareness on environmental, health, and safety issues. A register of attendees at these sessions must be kept in the environmental file.

2.1.11. Other

Other ways of engagements which can help in increasing the awareness of the community regarding environmental constraints and opportunities shall be implemented where necessary.

Table 15: Environmental Awareness Plan for the Construction Phase

Environmental Parameter	Risk	Communication Strategy				Mitigation Activity
		Management	Administration	Mine Workers	Contractors	
Soil	Increase in soil erosion	Workshop	Induction	Induction	Induction	Rehabilitate area as soon as possible.
	Contamination of Soil	Workshop	Induction	Induction	Induction	• All hydrocarbons should be stored in designated, bunded areas with a capacity of at least 110% of the volume stored; • Spill kits should be readily available, and all employees must be trained in the utilisation thereof. • Should a spill take place the area should be cleaned immediately, and the contaminated area will be rehabilitated as appropriate; • Prevent spillages by the implementation of good housekeeping practices; • The management of chemicals and hydrocarbons should form part of the emergency preparedness and response programme; • In the event of a major spill that could result in major soil and water contamination the DWS should be informed immediately, and a remediation strategy should be enforced;

						• The management of chemicals and hydrocarbons should form part of the emergency preparedness and response programme; • No activities associated with hydrocarbons and or chemicals (i.e. wash bays etc.) may be undertaken outside of an effectively designed contained area
Fauna	Disturbance of fauna	Workshop	Induction	Induction	Induction	• Workers must be educated on the protection of animal species • Hunting and trapping of fauna will be strictly prohibited
Flora	Damage to flora	Workshop	Induction	Induction	Induction	Limit the area of disturbance to the footprint area of the affected sites only.
Surface Water	Surface Water Consumption	Workshop	Induction	Induction	Induction	Limit water use and recycle where possible; and refer above for the correct handling and storage of hydrocarbons.
Air quality	Generation of Dust	Workshop	Induction	Induction	Induction	Dust Suppression methods will be implemented
	Generation of Smoke	Workshop	Induction	Induction	Induction	Open fires will be prohibited on the property
Heritage	Destruction of Graves and archaeological sites	Workshop	Induction	Induction	Induction	• No graves, iron and stone age artefacts were found within the project area. • Should graves be found during the construction phase, the EO, CEO and ECO must ease

						construction work and inform the Mpumalanga Heritage Resource Agency and SAHRA.

Table 16: Environmental Awareness Plan for Operational Phase

Environmental Parameter	Risk	Communication Strategy				Mitigation Activity
		Management	Administration	Mine Workers	Contractors	
Soil	Increase in Soil erosion	Workshop	Induction	Induction & Monthly Meeting	Induction & Monthly Meeting	Rehabilitate area as soon as possible.
	Contamination of Soil	Workshop	Induction	Induction & Monthly Meeting	Induction & Monthly Meeting	• All hydrocarbons should be stored in the designated, bunded areas with a capacity of at least 110% of the volume stored. • Spill kits should be readily available, and all employees must be trained in the utilisation thereof; Should a spill take place the area should be cleaned immediately, and the contaminated area will be rehabilitated as appropriate. • Prevent spillages by the implementation of good housekeeping practices. • The management of chemicals and hydrocarbons should form part of the

						emergency preparedness and response programme. • In the event of a major spill that could result in major soil and water contamination the DWS should be informed immediately, and a remediation strategy should be enforced. • The management of chemicals and hydrocarbons should form part of the emergency preparedness and response programme. • No activities associated with hydrocarbons and or chemicals (i.e. wash bays etc.) may be undertaken outside of an effectively designed contained area.
Surface water	Surface Water Contamination	Workshop	Induction	Induction & Monthly Meeting	Induction & Monthly Meeting	No discharge should be implemented without prior approval by DWS.
Air Quality	Generation of Dust	Workshop	Induction	Induction & Monthly Meeting	Induction & Monthly Meeting	Dust suppression methods will be implemented

Table 17: Environmental Awareness Plan for the Decommissioning Phase

Environmental Parameter	Risk	Communication Strategy				Mitigation Activity
		Management	Administration	Mine Workers	Contractors	
Soil	Incorrect rehabilitation	Workshop	Workshop	Induction	Induction	The correct placement of soil layers will be implemented.
Flora	Alien invader species	Workshop	Workshop	Induction	Induction	Indigenous vegetation establishment will be encouraged. An alien invasive management plan control programme must be implemented.
Ground water	Water quality deterioration	Workshop	Workshop	Induction	Induction	Detailed water monitoring programme to be implemented.
Air Quality	Generation of dust	Workshop	Workshop	Induction	Induction	Dust suppression methods will be implemented

13 GENERIC CONDITIONS

In order to ensure compliance with Khanyazwe Flexpower 's environmental policy as well as environmental legislation requirements, the following generic conditions are applicable:

13.1 DOCUMENTS PROVISION

The following documents should be provided to the Contractors Manager and CEO upon appointment:

- EA
- EMPr

Consequently, the Contractor must provide the EO and ECO with all method statements are required by the EA and EMPr before commencement with construction or planning activities.

13.2 SITE DOCUMENTATION / MONITORING

The standard Khanyazwe Flexpower site documentation must be used to keep records on-site. A site environmental file must be developed, and all documents must be kept on site and available for monitoring and auditing. All parties must sign the documentation to ensure that such documents are legitimate. Regular monitoring of all site works by the ECO is imperative to ensure that all problems encountered are solved punctually and amicably. When the ECO is not available, the CEO and EO, construction manager or supervisor shall keep abreast of all works to ensure no problems arise.

Monthly reports shall be forwarded to Khanyazwe Flexpower with all information relating to environmental matters. The following Key Performance Indicators must be reported on a bi-weekly (every two weeks) basis:

- Complaints received from surrounding Landowners and actions taken.
- Environmental incidents, such as oil spills, concrete spills, etc., and actions taken.
- Incidents possibly leading to litigation and legal contraventions.
- Environmental damage that needs rehabilitation measures to be taken.

The following documentation shall be kept on-site:

- Access negotiations and physical access plan.
- Signed Landowner agreements were applicable.
- Complaints Register.
- Site daily dairy.
- Records of all remediation/rehabilitation activities.
- Copies of monthly ECO reports.
- Copy of the EMPr.
- Copy of the EA.
- Copies of all licenses and permits.

2.2. AUDITS

During the construction period, at least monthly environmental audits must be conducted by an independent ECO to determine compliance with the recommendations of the EMPr and conditions of the EA and WUL. Audits shall be undertaken in accordance with the requirement of Appendix 7 of the EIA Regulations of December 2014 as amended.

The appointed ECO and the Contractor on site are responsible for ensuring compliance with this EMPr. It is recommended that the ECO compile monthly EMPr compliance reports (audits) and submits them to the CEO for correction of non-compliance issues. The ECO's responsible for reporting any non-compliance that is not correctly rectified to DFFE.

2.3. SOCIO-CULTURAL ISSUES

- A plan of action must be drawn up in the case of an emergency (veld fire, damaged power line, vegetation problems, etc.);
- Adjacent property owners or occupiers must be treated with respect and courtesy at all times;
- The culture and lifestyles of the communities living in close proximity to the project must be respected;
- Vehicles must be driven carefully in hazardous road conditions (sharp bends, narrow roads, bad weather, domestic animals on or near the road, etc.);
- Vehicle movement must be kept to a minimum during rain to avoid damage to the access road;
- Environmental clauses (as referred to in this Construction and Operation EMPr) must be included in contract documents for all contractors; and
- A register must be maintained of all complaints or queries received as well as action taken.

13.3 FAILURE TO COMPLY WITH THE ENVIRONMENTAL CONSIDERATIONS

The ECO and Khanyazwe Flexpower EO will, acting reasonably, have the authority to instruct the Contractor to suspend part or all of the construction activity if such activity causes or may cause unacceptable damage to the environment by not adhering to the specifications. The suspension will be enforced until such time as the offending parties' actions, procedures and/or equipment are corrected, and adequate mitigation measures implemented.