



Sasol South Africa Limited

THE PROPOSED SECUNDA GAS TO POWER FACILITY ,LOCATED IN SECUNDA ,MPUMALANGA PROVINCE

Draft Environmental Scoping Report





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Draft Environmental Scoping Report

DRAFT FOR REVIEW - CONFIDENTIAL

PROJECT NO. ZA0068671.2768

OUR REF. NO. 01

DATE: OCTOBER 2026



Sasol South Africa Limited

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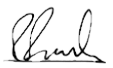
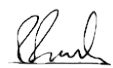
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GENERAL SITE INFORMATION

Technical details of the proposed Secunda Gas to Power Facility		
Farm Portions	<ul style="list-style-type: none"> • ERF 8488 • ERF 8342P • Fabriek 601 IS (ERF 8341) 	
Central coordinates of the site and activity location	Gas to Power Facility	Central point on the site: -26.563088, 29.161332
	MRG Pipeline	East factory: - Start point: -26.553602, 29.173919 - Central point): -26.558468, 29.171505 West factory: - Start point: -26.551528, 29.155120 - Central point): -26.558140, 29.157479
	LNG Pipeline	Route 1(through primary area): - Start point: -26.548064, 29.189061 - Central point): -26.555818, 29.171938 Route 2 (around the factory): - Start point: -26.548064, 29.189061 - Central point): -26.568217, 29.178204
Total Site Extent	Approximately 50 000m ²	
Design Specifications		
Capacity of power plant (including all equipment and auxiliaries to enable operation)	778.6 – 800.6 MW	
Length of pipeline (LNG)	Route 1, through primary area: 5.38 km Route 2, around the south-eastern side of the factory: 5.87 km	
Pipeline specifications (LNG)	16" pipeline, C3 line class (carbon steel)	
Length of pipeline (MRG)	Total length of piping is 5.54 km (including piping from east and west factories).	
Pipeline specifications (LNG)	14" pipeline, C line class (carbon steel)	
Raw water treatment	The raw water infrastructure requirements are as follows:	

	<ul style="list-style-type: none">Two stormwater attenuation facilities (evaporation ponds/dams) with surface areas of approx. 0.5 ha and 0.3 ha, each to a depth of 1.0 m, providing a combined storage capacity of 9,000 m³;Main raw water storage tanks with a total storage capacity of up to 10,000 m³;Raw water storage tanks for the water treatment system used for demi-water production, with a total storage capacity of 6,000 m³, supplied from the main raw water tanks;Demineralised water storage tanks with a total storage capacity of up to 3,000 m³, supplied from the raw water tanks of the water treatment system;Water storage tanks for the fire-fighting system, with a total storage capacity of up to 1,250 m³, supplied from the raw water tanks.												
Emissions	<p>Number of Stacks:</p> <ul style="list-style-type: none">1 stack per HRSG1 stack for HRSG Bypass2 stacks for each GTStack Dimensions: 7 to 9 m stack diameter and 60 to 65 m stack height.Exit Velocity: 15 to 20 m/s flue gas velocity at stack exit and will be verified with project specific details												
Construction schedule	<table><tr><th>Phase</th><th>Duration</th><th>Key Outcome</th></tr><tr><td>Development & Financial Close</td><td>12-24 Months</td><td>Permits +funding secured</td></tr><tr><td>Construction</td><td>24-36 Months</td><td>Plant built & commissioned</td></tr><tr><td>Operation</td><td>25-30 years</td><td>Power generation lifecycle</td></tr></table>	Phase	Duration	Key Outcome	Development & Financial Close	12-24 Months	Permits +funding secured	Construction	24-36 Months	Plant built & commissioned	Operation	25-30 years	Power generation lifecycle
Phase	Duration	Key Outcome											
Development & Financial Close	12-24 Months	Permits +funding secured											
Construction	24-36 Months	Plant built & commissioned											
Operation	25-30 years	Power generation lifecycle											
Traffic	<p>Construction:</p> <ul style="list-style-type: none">Light vehicles 50 – 100p/d;Heavy trucks 50 – 100p/d <p>Operation:</p> <ul style="list-style-type: none">Staff cars 40–60p/d												
Powerlines	117m 132 kV Line												
Access Roads	<p>PDP Kruger Avenue</p> <p>Energy Road, Synfuels East Road, Road 21, Road 2D (inside Secunda Operations)</p>												
Associated Infrastructure	Utilities and effluent streams piping between SO and power plant												

EXECUTIVE SUMMARY

The proposed Secunda Gas-to-Power (GtP) Facility is being developed by Sasol South Africa Ltd within the existing Sasol Secunda Operations (SSO) in the Govan Mbeki Local Municipality (GSLM), Gert Sibande District Municipality (GSDM), Mpumalanga Province. The project forms part of Sasol's strategic response to South Africa's growing demand for reliable electricity and the national transition towards a more diversified energy mix. The proposed development comprises a Combined Cycle Gas Turbine (CCGT) power generation facility with an installed capacity of approximately 780-800 MW, utilising regasified liquefied natural gas (LNG) as its primary fuel source and methane-rich gas (MRG) as a potential backup fuel. Associated infrastructure includes LNG and MRG pipelines, electrical infrastructure, raw water treatment facilities, water storage infrastructure, internal utilities, stormwater management infrastructure and supporting access infrastructure. The facility will be located on an approximately 5 ha brownfield site within the existing industrial footprint of SSO. One of the proposed positions for the LNG pipeline is within a green fields area just outside of Sasol's Primary Area.

The project is subject to a Scoping and Environmental Impact Reporting (S&EIR) process in terms of the National Environmental Management Act (NEMA) EIA Regulations, with the Department of Forestry, Fisheries and the Environment (DFFE) acting as the Competent Authority (CA). In addition to the Environmental Authorisation (EA), the project will require a Water Use Licence (WUL) and the amendment of Sasol's existing Atmospheric Emission Licence (AEL).

Baseline Environment

The proposed facility is situated within the highly industrialised Secunda landscape, which has been extensively transformed by petrochemical operations, coal mining, power generation infrastructure and associated industrial development. The project site itself is largely disturbed and consists predominantly of existing hardstand, gravel-covered storage and handling areas, with limited remnant natural habitat occurring along drainage features and pipeline corridors.

The surrounding physical environment is characteristic of the Mpumalanga Highveld, comprising gently undulating topography, grassland vegetation, seasonal wetlands and drainage systems associated with the Upper Vaal Catchment. Although the broader region supports vulnerable grassland ecosystems and aquatic habitats of ecological importance, specialist investigations confirmed that most environmental sensitivities within the immediate power plant footprint are low to moderate due to historical disturbance. However, aquatic systems associated with the Groot-Bossiespruit, wetlands and watercourses intersected by the proposed pipeline routes remain highly sensitive and represent the most significant environmental constraint identified during the scoping phase.

The site is located within the Highveld Priority Area (HPA), where ambient air quality is already affected by industrial and mining emissions. Existing air quality challenges include elevated concentrations of particulate matter and regional cumulative emissions. From a social perspective, the project is located within a municipality where industrial development is the predominant economic driver and where unemployment remains a significant socio-economic challenge. The project area is situated near the major urban centres of Secunda and eMbalenhle, which are expected to benefit from employment creation and economic stimulation associated with the development.

Specialist site sensitivity verification confirmed:

- Low agricultural sensitivity;
- Low heritage and palaeontological sensitivity due to extensive site disturbance;
- Low visual sensitivity within the existing industrial landscape;
- Medium terrestrial biodiversity sensitivity in selected pipeline areas;
- Very high aquatic biodiversity sensitivity associated with wetlands and watercourses;
- Medium air quality sensitivity; and
- High human health sensitivity primarily associated with existing regional air quality conditions.

Anticipated Environmental and Social Impacts

The scoping assessment identified a number of environmental and socio-economic issues requiring further evaluation during the EIA phase. The most significant environmental risks are associated with potential impacts on aquatic ecosystems, particularly wetland and watercourse crossings along the LNG and MRG pipeline routes. Key potential impacts include sedimentation, erosion, water quality deterioration, disturbance of aquatic habitats and impacts to aquatic biodiversity. These impacts were preliminarily assessed as medium to high significance and require detailed specialist investigation.

Additional impacts requiring further assessment include:

- Vegetation clearing and habitat disturbance associated with pipeline construction;
- Spread of alien invasive plant species;
- Construction and operational air quality impacts;
- Human health impacts associated with atmospheric emissions;
- Climate change resilience and greenhouse gas emissions;
- Traffic and transport impacts;
- Visual impacts associated with industrial infrastructure; and
- Socio-economic impacts relating to employment, skills development and local economic benefits.

Positive impacts anticipated from the project include the creation of construction and operational employment opportunities, contribution to regional economic development, enhancement of energy security and support for South Africa's Just Energy Transition objectives through provision of lower-carbon dispatchable electricity generation.

Plan of Impact Assessment

The EIA phase will focus on detailed assessment of all key environmental and social aspects identified during scoping. The following specialist investigations have been commissioned to support the Environmental Impact Assessment Report (EIAR):

- Visual Impact Assessment;
- Terrestrial Biodiversity Impact Assessment (including plant and animal species assessments);
- Aquatic Biodiversity Impact Assessment;
- Traffic Impact Assessment;
- Climate Change Impact Assessment;

- Health Impact Assessment;
- Social Impact Assessment; and
- Air Quality Impact Assessment.

The EIA phase will evaluate the significance of impacts during construction, operation and decommissioning, assess cumulative impacts, compare alternatives, develop mitigation measures and refine the project layout to avoid or minimise impacts on sensitive environmental features. The assessment will be undertaken in accordance with the NEMA mitigation hierarchy, prioritising avoidance of impacts before minimisation, rehabilitation and offsetting are considered.

Stakeholder Engagement Plan

Stakeholder engagement forms an integral component of the S&EIR process and will continue throughout the EIA phase. The objective of the stakeholder engagement programme is to ensure that all Interested and Affected Parties (I&APs), government authorities, neighbouring communities and other stakeholders are informed of the project and provided with meaningful opportunities to participate in decision-making.

The stakeholder engagement process includes:

- Ongoing consultation with DFFE and relevant commenting authorities;
- Maintenance and expansion of the stakeholder database;
- Direct stakeholder notification through letters, e-mails and SMS notifications;
- Placement of public notices and newspaper advertisements;
- Public review of the Draft Scoping Report and Draft Environmental Impact Report for a minimum 30-day comment period;
- Compilation of Comment and Response Reports documenting all stakeholder inputs; and
- Ongoing communication regarding project progress, findings and environmental authorisation decisions.

Through the EIA phase, stakeholder inputs will inform the detailed assessment process, project design refinement, mitigation measures and final decision-making, ensuring that environmental and social considerations are appropriately integrated into project planning.

Conclusion

The scoping process concludes that the proposed Secunda GtP Facility has the potential to provide important strategic benefits in terms of national energy security, industrial resilience and support for South Africa's Just Energy Transition. While several environmental and social impacts require detailed evaluation, no fatal flaws have been identified at the scoping stage. The key environmental considerations relate to aquatic ecosystems, air quality, biodiversity and human health. These matters will be comprehensively assessed during the EIA phase to determine the acceptability of impacts and to identify appropriate mitigation measures. Accordingly, the Scoping Report recommends that the project proceed to the EIA phase.

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1 INTRODUCTION

1.1 PURPOSE OF THIS REPORT

This Draft Scoping Report (DSR) documents the process and findings of the Scoping Phase of the Scoping and Environmental Impact Reporting (S&EIR) process for the proposed Secunda Gas to Power (GtP) Facility Project (the Project). The Project is located in Secunda, in the Govan Mbeki Local Municipality and Gert Sibande District Municipality, in the Mpumalanga Province of South Africa.

The DSR aims to provide stakeholders with information on the proposed development including location, layout and alternatives that were considered in planning for this project. This report presents the relevant baseline information that is known about the proposed site and presents key impacts and a plan of study to be assessed and reported on in the environmental assessment phase, together with the planned stakeholder engagement process planned for the Environmental Scoping Impact Reporting (S&EIR) process.

1.2 BACKGROUND INFORMATION

Sasol South Africa (Pty) Ltd (Sasol) is proposing the development of a GtP Facility within the Sasol Secunda Complex in Mpumalanga Province.

The proposed project entails the generation of electricity using regasified liquefied natural gas (LNG) as the primary fuel source, with methane-rich gas being considered as a potential backup feedstock. The primary objective of the Secunda GtP Project is to generate electricity for supply to the national grid, thereby contributing towards meeting South Africa's growing energy demand and improving grid stability.

The proposed GtP project being put forward for Environmental Authorisation (EA) pertains to the infrastructure and project footprint, required to support the Secunda GtP project, including the installation of transmission lines, and routing of high-voltage cables within existing servitudes.

In addition to the electrical work, the project will involve the installation and routing of various pipelines and installing water treatment facilities. These will include pipelines for LNG, MRG and other required utilities such as cooling water, raw water, firewater, instrument air, and effluent treatment.

The Sasol owned plot under consideration for this project is a brown fields area that covers approximately 50 000m² within the primary area of the factory (**Figure 1-1**).

To be permitted/ authorised, this project will require an EA from the Competent Authority (CA) (i.e. Department of Forestry, Fisheries and the Environment (DFFE)), a Water Use License (WUL) from the Department of Water and Sanitation (DWS) and an Air Emissions License (AEL) Amendment from the Gert Sibande District Municipality,

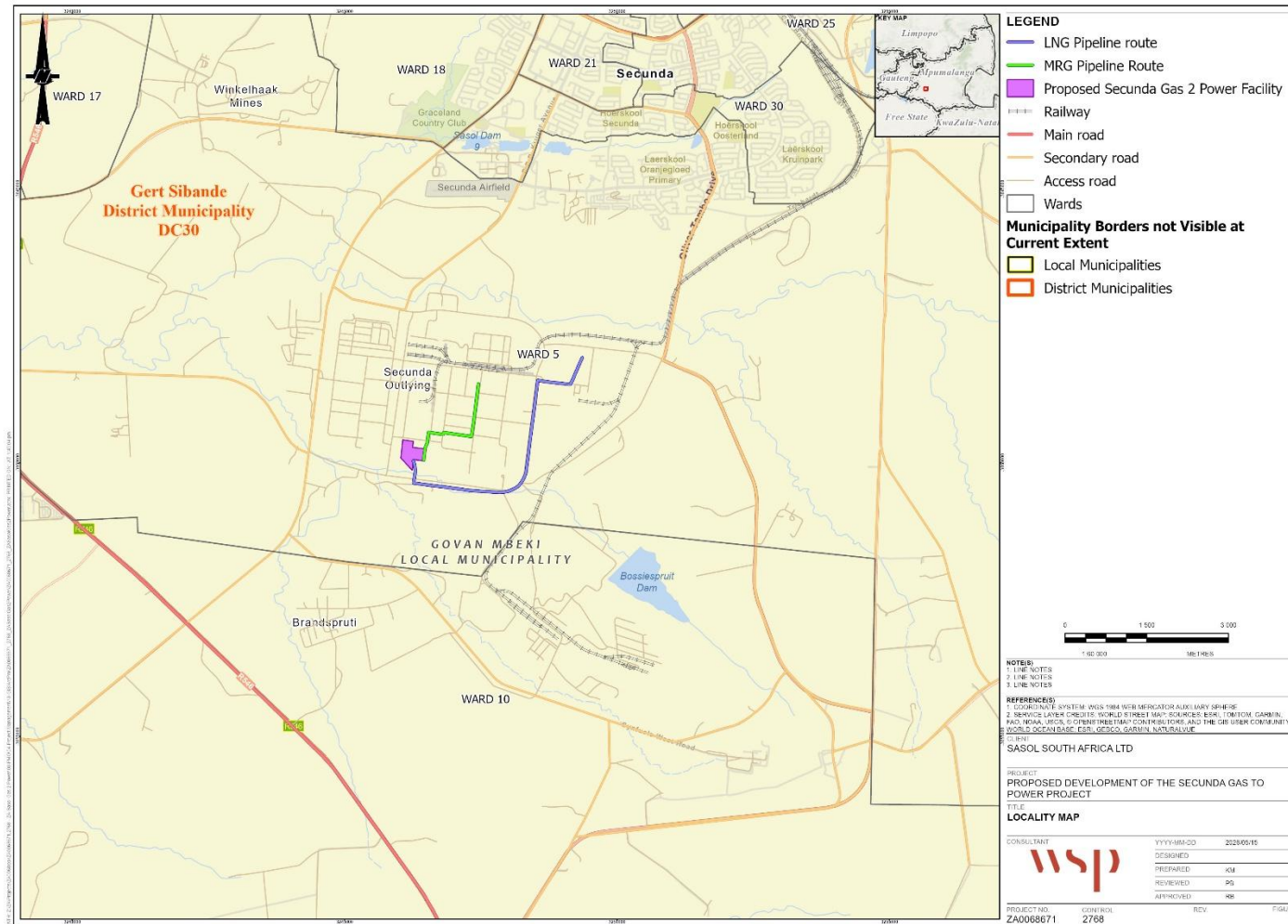


Figure 1-1 – Secunda Gas to Power Facility Locality Map

The proposed Secunda Gas to Power facility ,located IN Secunda ,Mpumalanga province
Project No.: ZA0068671.2768 | Our Ref No.: 01
Sasol South Africa Limited

1.3 KEY ROLE PLAYERS

1.3.1 PROJECT PROPONENT

Sasol South Africa Ltd is the project proponent (Applicant) with regards to this application for the construction and operation of the Secunda GtP Facility and associated infrastructure. **Table 1-1** provides the relevant details of the project proponent.

Table 1-1 - Details of Project Proponent

Proponent:	Sasol South Africa Ltd, Company Registration No: 1968/013914/06
Contact Person:	Kashmira Doelab
Postal Address	Synfuels Road, Secunda, Mpumalanga, 2302, South Africa
Telephone:	+27 17 610 7143
Email:	Kashmira.Doelab@sasol.com

1.3.2 COMPETENT AUTHORITY

The competent authority for the EA application is the DFFE. This was confirmed through engagement with the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (MDARDLEA) and consideration of the Explanatory Document for Government Notice No. 779 published in Government Gazette No. 40110 dated 1 July 2016.

Table 1-2 provides the relevant details of the competent authority on the Project.

Table 1-2 - Competent Authority

Aspect	Competent / Commenting Authority	Contact Details
Competent Authority: Environmental Impact Management	DFFE	Case Officer: Jay-Jay Mpelane Integrated Environmental Authorisations Email: Jmpelane@dffe.gov.za

1.3.3 COMMENTING AUTHORITY

The following commenting authorities have been identified, to date, for this application:

- DFFE: Biodiversity and Conservation;
- DFFE: Protected areas;
- MDARDLEA;
- DWS;
- Vaal Water Management Area (WMA) Authority;

- South African Heritage Resource Agency (SAHRA);
- Mpumalanga Heritage Resources Authority (MHRA);
- Mpumalanga Tourism and Parks Agency (MTPA);
- Civil Aviation Authority (CAA);
- Air Traffic and Navigation Services (ATNS);
- Department of Defence (SA Army) (DD);
- Astronomy Management Authority (AMA);
- South African Weather Services (SAWS);
- South African National Roads Agency Limited (SANRAL);
- Mpumalanga Department of Public Works, Roads and Transport;
- Gert Sibande District Municipality (GSDM);
- Govan Mbeki Local Municipality (GMLM).

1.3.4 ENVIRONMENTAL ASSESSMENT PRACTITIONER

WSP Group Africa (Pty) Ltd (WSP) has been appointed in the role of Independent Environmental Assessment Practitioner (EAP) to undertake the S&EIR processes for the development of the Project. The CV of the EAP is available in **Appendix A**. The EAP declaration of interest and undertaking is included in **Appendix B**. **Table 1-3** details the relevant contact details of the EAP. In order to adequately identify and assess potential environmental impacts, a number of specialists will support the EAP.

Table 1-3 - Details of the Environmental Assessment Practitioner

Environmental Assessment Practitioner (EAP)	WSP Group Africa (Pty) Ltd
Contact Person:	Rob Rowles
Postal Address:	1st Floor, Pharos House, 70 Buckingham Terrace Westville, Durban, 3629 South Africa
Telephone:	+27 31 240 8832
E-mail:	Rob.Rowles@wsp.com
Qualifications:	<ul style="list-style-type: none"> • Masters in Environmental Management • Honours Degree in Geography and Environmental Science • B Social Science Degree in Geography and Environmental Science
EAPASA Registration Number:	EAPASA (2022/5395)

Statement of Independence

Neither WSP nor any of the authors of this Report have any material present or contingent interest in the outcome of this Report, nor do they have any business, financial, personal, or other interest

that could be reasonably regarded as being capable of affecting their independence. WSP has no beneficial interest in the outcome of the assessment.

1.3.5 SPECIALISTS

Specialist input was required in support of this application for EA. The details of the specialists are provided in **Table 1-4** below. The specialist declarations are included in **Appendix C**.

Table 1-4 - Details of Specialists

Assessment	Name of Specialist	Company	Sections in Report
Agriculture	Johann Lanz	SoilZA	Section 5.1.4 Section 6.1.1 Section 7.4.3 Appendix G.8
Visual	Jill Chauke	WSP Group Africa (Pty) Ltd	Section 5.3.3 Section 6.1.3 Appendix G.6
Palaeontology	Prof. Marion Bamford	Independent	Section 5.3.2 Section 6.1.5 Appendix G.10
Archaeological and cultural heritage	Jenna Levin	Artefactual Heritage Consulting (Pty) Ltd	Section 5.3.1 Section 6.1.4 Appendix G.9
Terrestrial Biodiversity (including Animal and Plant species themes)	Mandlenkosi Nkala and Sandhya Moodley	WSP Group Africa (Pty) Ltd	Section 5.2.1 Section 6.1.2 Appendix G.3
Aquatic Biodiversity	Mandlenkosi Nkala	WSP Group Africa (Pty) Ltd	Section 5.2.2 Section 6.1.6 Appendix G.2
Traffic	Iris Wink	iWink Consulting	Section 5.3.5 Section 6.1.7
Climate Change	Sarah Feldman	WSP Group Africa (Pty) Ltd	Section 5.1.1 Section 6.1.8 Appendix G.5

Assessment	Name of Specialist	Company	Sections in Report
Health Impact	Dr Willie van Nierkerk and Dr MH Fourie	INFOTOX (Pty) Ltd	Section 5.3.6 Section 6.1.9 Appendix G.11
Socio-economic	Steve Horak	WSP Group Africa (Pty) Ltd	Section 5.3.4 Section 0 Appendix G.7
Geotechnical	Khuthadzo Bulala	WSP Group Africa (Pty) Ltd	Section 6.1.11 Appendix G.1
Air Quality	Muhammed Khan	WSP Group Africa (Pty) Ltd	Section 5.1.8 Section 6.1.12 Appendix G.4

1.4 SCOPING TERMS OF REFERENCE

The 2014 EIA Regulations (GNR 982), as amended, identifies the proposed Secunda GtP Facility development as an activity being subject to an S&EIR process due to the applicability of the EIA Listing Notices 1 and 2 (GNR 983 and 984, as amended).

As defined in Appendix 2 of GNR 982, as amended, the objective of the scoping process is to, through a consultative process:

- Identify the relevant policies and legislation relevant to the activity;
- Motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- Identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
- Identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;
- Identify the key issues to be addressed in the assessment phase;
- Agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and
- Identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

Stakeholder Engagement

Stakeholder Engagement is a requirement of scoping in an S&EIR Process. Stakeholder Engagement consists of a series of inclusive interactions aimed at providing stakeholders with opportunities to express their comments and concerns in the impact assessment process, so that these can be considered and incorporated into the decision-making process. Effective public participation requires the prior disclosure of relevant and adequate project information to enable stakeholders to understand the risks, impacts, and opportunities of the Proposed Project. The objectives of the public participation process can be summarised as follows:

- Identify relevant individuals, organisations and communities who may be interested in or affected by the Proposed Project;
- Clearly outline the scope of the proposed Project, including the scale and nature of the existing and proposed activities;
- Identify viable proposed Project alternatives that will assist the relevant authorities in making an informed decision;
- Identify shortcomings and gaps in existing information;
- Identify key concerns, raised by Stakeholders that should be addressed in the subsequent specialist studies;
- Highlight the potential for environmental impacts, whether positive or negative; and
- To inform and provide the public with information and an understanding of the Proposed Project, issues and solutions.

1.5 SCOPING REPORT STRUCTURE

Table 1-5 cross-references the sections within the DSR with the legislated requirements as per Appendix 2 of GNR 982.

Table 1-5 - Legislated Report Requirements as detailed in GNR 982

Appendix 2	Legislated requirements as per the NEMA GNR 982	Relevant Report Section
(a)	Details of	
	the EAP who compiled the report; and	Section 1.3.4 and Appendix A
	the expertise of the EAP, including a Curriculum Vitae	Appendix A
(b)	The location of the activity, including-	
	The 21-digit Surveyor code for each cadastral land parcel;	Section 3.1
	Where available, the physical address and farm name	Section 3.1

Appendix 2	Legislated requirements as per the NEMA GNR 982	Relevant Report Section
	Where the required information in terms of (i) and (ii) is not available, the coordinates of the boundary of the property.	N/A
(c)	A plan which locates the proposed activities applied for at an appropriate scale, or, if it is-	
	A linear activity, a description of the corridor in which the proposed activity or activities is to be undertaken; or	N/A
	On land where the property has not been defined, the coordinates within which the activity is to be undertaken.	N/A
(d)	A description of the proposed activity, including-	
	All listed and specified activities triggered;	Section
	A description of the activities to be undertaken, including associated structures and infrastructure;	Section 4
(e)	A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;	Section 4.2
(f)	A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section 3.6
(g)	A full description of the process followed to reach the proposed preferred activity, site and location of the development footprint within the site, including-	
	Details of all the alternatives considered;	Section 3.5
	Details of the public participation undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Section 4.6
	a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	Appendix F
	the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 5
	the impacts and risks which have informed the identification of each alternative, including the nature, significance, consequence, extent, duration and probability of such identified impacts, including the degree to which these impacts- (aa) can be reversed;	Section 6

Appendix 2	Legislated requirements as per the NEMA GNR 982	Relevant Report Section
	(bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;	
	the methodology used in identifying and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	Section 2.5
	positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 6.3
	the possible mitigation measures that could be applied and level of residual risk;	Section 6.3
	the outcome of the site selection matrix;	Section 2.5
	if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and	N/A
	a concluding statement indicating the preferred alternatives, including preferred location of the activity;	Section 3.5
(h)	A full description of the process followed to reach the proposed preferred activity, site and location within the site, including-	
	Details of all the alternatives considered;	Section 3.4
	Details of the public participation undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Section 2.6
	a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	To be included in the Final Scoping Report (FSR)
	the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 5
	the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;	Section 6

Appendix 2	Legislated requirements as per the NEMA GNR 982	Relevant Report Section
	the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	Section 2.5
	positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 6
	the possible mitigation measures that could be applied and level of residual risk;	Section 6
	the outcome of the site selection matrix;	Section 2.4
	if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and	N/A
	a concluding statement indicating the preferred alternatives, including preferred location of the activity;	Section 2.4
(i)	A plan of study for undertaking the environmental impact assessment process to be undertaken, including-	
	a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;	Section 7.3
	a description of the aspects to be assessed as part of the environmental impact assessment process;	Section 7.4
	aspects to be assessed by specialists;	Section 7.5
	a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;	Section 7.6
	a description of the proposed method of assessing duration and significance;	Section 7.7
	an indication of the stages at which the competent authority will be consulted;	Section 2.6
	particulars of the public participation process that be conducted during the environmental impact assessment process; and	Section 7
	a description of the tasks that will be undertaken as part of the environmental impact assessment process;	Section 7

Appendix 2	Legislated requirements as per the NEMA GNR 982	Relevant Report Section
	identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	Section 6
(j)	An undertaking under oath or affirmation by the EAP in relation to-	Appendix B
	the correctness of the information provided in the report;	
	the inclusion of comments and inputs from stakeholders and interested and affected parties; and	
	any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;	
(k)	An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;	Appendix B
(l)	Where applicable, any specific information required by the competent authority; and	N/A
(m)	Any other matter required in terms of section 24(4)(a) and (b) of the Act.	N/A

2 S&EIR PROCESS

2.1 S&EIR PROCESS AND PHASING

The S&EIR process consists of various phases with associated timelines as defined in GNR 982 of NEMA. The process can generally be divided into four main phases, namely; (i) a Pre-application Phase, (ii) an Application and Scoping Phase (current phase), (iii) an Impact Assessment Phase and (iv) Authorisation and Appeal Phase. The S&EIR process is shown in **Figure 2-1**

The main objectives of the phases can be described as follows:

Pre-Application Phase (Complete):

- Undertake consultation meetings with the relevant CAs to confirm the relevant listed activities, the required assessment process and protocol, and to agree on the public participation plan;
- Identify stakeholders, including neighbouring landowners/residents and relevant authorities;

Application and Scoping Phase (Current):

- Compile and submit application forms to the CA and pay the relevant application fees;
- Compile a Draft Scoping Report (DSR) (this report) describing the affected known environment and present an analysis of the potential environmental issues and benefits arising from the proposed project that may require further investigation in the Impact Assessment Phase;
- Develop draft terms of reference for the specialist studies to be undertaken in the Impact Assessment Phase;
- Inform stakeholders of the proposed project, feasible alternatives and the S&EIR process and afford them the opportunity to register and participate in the process, identifying public issues and concerns associated with the proposed project that may need to be assessed in the later impact phase;
- Incorporate comments received from stakeholders during the DSR comment period;
- Should significant amendments be required, release the updated DSR for a 30-day comment period to provide stakeholders with the opportunity to review the amendments as well as provide additional input if required; and
- Submit the Final Scoping Report (FSR), following the consultation period, to the relevant authorities, in this case the DFFE, for acceptance/rejection.

Impact Assessment Phase:

- Assess in detail the potential environmental and socio-economic impacts of the project as defined in the DSR and FSR;
- Identify environmental and social mitigation measures to avoid and/or address the identified impacts;
- Develop and/or amend environmental and social management plans based on the mitigation measures developed in the Environmental Impact Assessment Report (EIAR);

- Continue to inform and obtain contributions from stakeholders, including relevant authorities, stakeholders, and the public and address their relevant issues and concerns through the circulation of the Draft Impact Assessment Report (DEIR);
- Incorporate comments received from stakeholders during the DEIR comment period (a minimum of 30 days); and
- Submit the Final EIR (FEIR) and the associated EMP to the CA to undertake the decision-making process.

Authorisation and Appeal Phase;

- The DFFE to provide written notification of the decision to either grant or refuse EA for the proposed project; and
- Notify all registered stakeholders of the decision and right to appeal.

Figure 2-1 below illustrates a typical S&EIR Process.

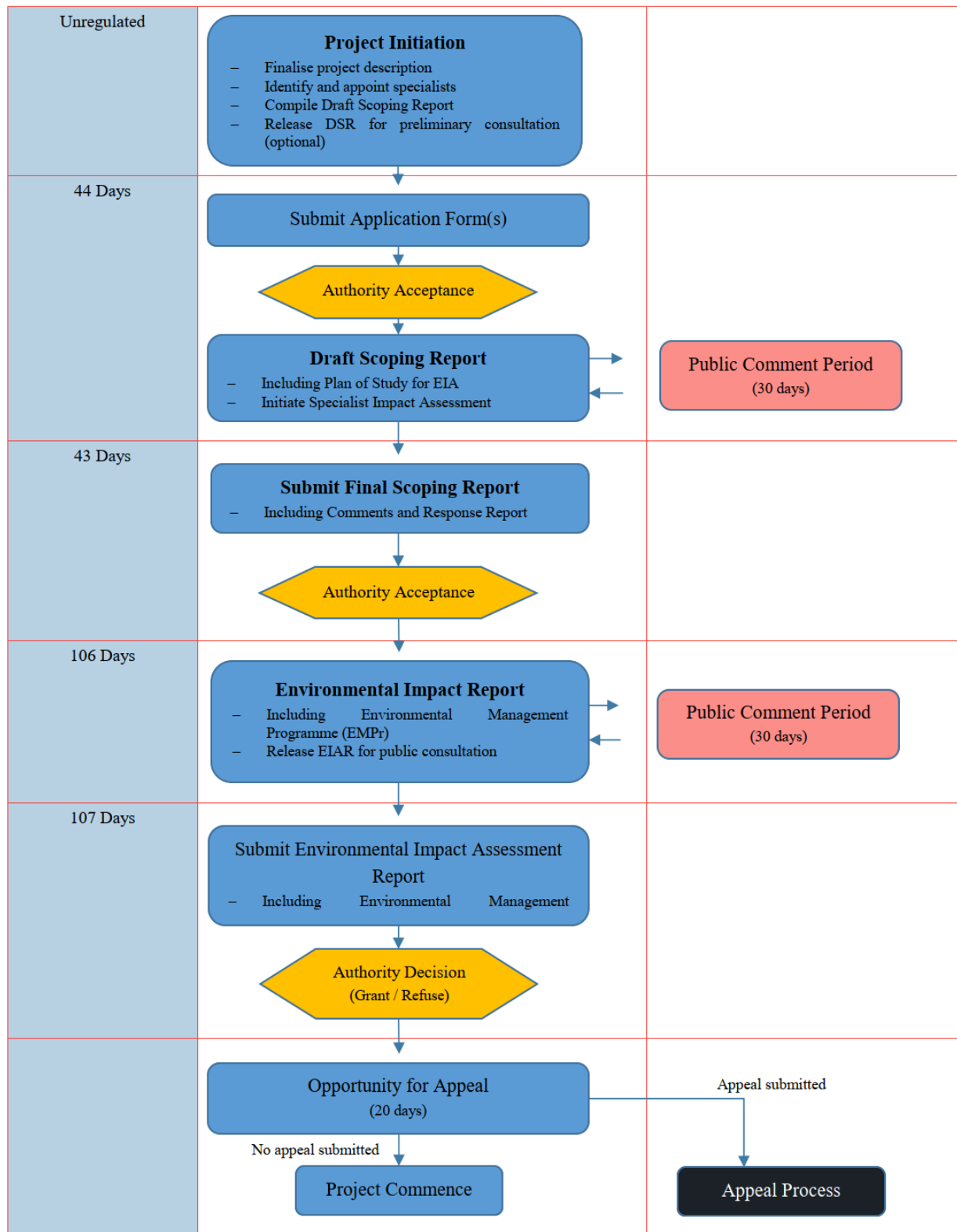


Figure 2-1: S&EIR Process

2.2 DFFE WEB-BASED ENVIRONMENTAL SCREENING TOOL

DFFE has developed the National Web-based Environmental Screening Tool in order to flag areas of potential environmental sensitivity related to a site as well as a development footprint and produces the screening report required in terms of regulation 16 (1)(v) of the EIA Regulations (2014, as amended). The Notice of the requirement to submit a report generated by the national web-based environmental screening tool in terms of section 24(5)(h) of the NEMA, 1998 (Act No 107 of 1998) and regulation 16(1)(b)(v) of the EIA regulations, 2014, as amended (GN 960 of July 2019) states that the submission of a report generated from the national web-based environmental screening tool, as contemplated in Regulation 16(1)(b)(v) of the EIA Regulations, 2014, published under Government Notice No. R982 in Government Gazette No. 38282 of 4 December 2014, as amended, is compulsory when submitting an application for environmental authorisation in terms of regulation 19 and regulation 21 of the EIA Regulations, 2014 as of 04 October 2019.

The Screening Report generated by the National Web-based Environmental Screening Tool contains a summary of any development incentives, restrictions, exclusions, or prohibitions that apply to the proposed development footprint as well as the most environmentally sensitive features on the footprint based on the footprint sensitivity screening results for the application classification that was selected.

Screening report for the proposed Secunda GtP Facility, LNG and MRG pipeline routes was generated on 31 March 2026 (**Appendix D**). The Screening Reports for the project identified various sensitivities for the site. The report also generated a list of specialist assessments that should form part of the EIA based on the development type and the environmental sensitivity of the site. Assessment Protocols in the report provide minimum information to be included in a specialist report to facilitate decision-making.

The Site Sensitivity Verification Report has been included in **Appendix H**.

Table 2-1 below provides a summary of the sensitivities identified for the development footprint.

Table 2-1: Sensitivities identified in the screening report.

Theme	Very High Sensitivity	High Sensitivity	Medium Sensitivity	Low Sensitivity
Agriculture Theme		X		
Animal Species Theme			X	
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme		X		
Defence Theme				X

Theme	Very High Sensitivity	High Sensitivity	Medium Sensitivity	Low Sensitivity
Palaeontology Theme	X			
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			

Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report as determined by the screening tool (please refer to Section 2.2.1 below for the EAP motivation applicable to this list):

- Agricultural Impact Assessment
- Landscape/Visual Impact Assessment
- Archaeological and Cultural Heritage Impact Assessment
- Palaeontology Impact Assessment
- Terrestrial Biodiversity Impact Assessment
- Aquatic Biodiversity Impact Assessment
- Hydrology Impact Assessment
- Noise Impact Assessment
- Traffic Impact Assessment
- Geotechnical Assessment
- Climate Impact Assessment
- Health Impact Assessment
- Socio-Economic Impact Assessment
- Ambient Air Quality Impact Assessment
- Air Quality Impact Assessment
- Plant Species Assessment
- Animal Species Assessment

2.2.1 MOTIVATION FOR SPECIALIST STUDIES

It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the footprint situation.

As summarised in **Table 2-1** above, the following specialist assessments have been commissioned for the project based on the environmental sensitivities identified by the Screening Report:

- Soils and Agricultural Potential Assessment and Site Sensitivity Verification;
- Archaeological and Cultural Heritage Assessment and Site Sensitivity Verification;
- Palaeontology Desktop Impact Assessment and Site Sensitivity Verification;
- Visual Impact Assessment;

- Terrestrial Biodiversity Impact Assessment (inclusive of plant species and animal species);
- Aquatic Biodiversity Impact Assessment;
- Air Quality Impact Assessment;
- Climate Change Impact Assessment;
- Social Impact Assessment;
- Desktop Geotechnical Assessment;
- Desktop Traffic Assessment ; and
- Health Impact Assessment.

The below identified specialist studies **will not be** undertaken as part of the S&EIR process for the proposed Secunda GtP Facility. Motivation for the exclusion of these specialist studies is provided below:

Geotechnical

- A desktop Geotechnical Assessment has been commissioned and has been incorporated into the DSR. A detailed Geotechnical Assessment will not be undertaken as part of the S&EIR Process as this will be undertaken during the detailed design phase and is not necessary to inform this S&EIR at authorisation stage.

Hydrology Assessment

- Due to the location of the study area, a Hydrology Study will not be undertaken. There are no hydrological features that require a full Hydrological Impact Assessment. The size and nature of the proposed facility is not anticipated to cause change in flow regimes nor any significant catchment flow deviation than that which is presently being experienced. A full stormwater management plan will be generated at design and plan approval stage should the project be authorised which will cater for surface water flow and management.

Civil Aviation

- According to the DFFE Screening Tool Report, civil aviation is regarded as having high sensitivity. The proposed development site is located within 8km of civil aviation aerodromes and classified as a dangerous and restricted airspace as demarcated. The required Civil Aviation Compliance Statement will be included as part of the EIA Phase. The South African Civil Aviation Authority (SACAA) and relevant stakeholders will be included on the project stakeholder database. They will be informed of the proposed Project, and comment will be sought from these authorities as applicable.

Defence

- The Department of Defence will be included on the project stakeholder database. They will be informed of the proposed Project, and comment will be sought from this authority as applicable. A compliance statement will be prepared by the EAP and included in the IA Reports.

Noise

- A Noise Impact Assessment will not be undertaken, as the proposed project is not anticipated to generate excessive noise beyond typical construction and operational levels associated with

similar infrastructure. The facility is located within a heavily modified environment that already accommodates comparable infrastructure, and the anticipated noise levels will therefore be consistent with existing baseline conditions. In addition, the site is situated away from identified noise-sensitive receptors.

2.3 APPLICATION FOR ENVIRONMENTAL AUTHORISATION

The application phase consists of the completion of the appropriate application form by the EAP and the Proponent as well as the subsequent submission and registration of the application for EA with DFFE.

A request for a pre-application meeting was submitted to MDARDLEA on 7 May 2026. A virtual pre-application meeting was held on 27 May 2026 with the MDARDLEA to discuss the proposed Secunda GtP Facility and associated infrastructure (i.e LNG and MRG pipelines).

During the pre-application meeting, it was noted that the DFFE may be the competent authority for the proposed development, taking into consideration the Explanatory Document for Government Notice No. 779, published in Government Gazette No. 40110 on 1 July 2016. Following consultation with the assigned DFFE case officer, Mr Jay-Jay Mpelane, it was confirmed that DFFE is the competent authority for the proposed project and that a further pre-application meeting with DFFE was not required. The minutes of the meeting with MDARDLEA, together with the confirmation email received from DFFE, is attached as **Appendix E**.

2.4 BASELINE ENVIRONMENTAL ASSESSMENT

The description of the baseline environment has been compiled through a combination of site investigations, desktop reviews, georeferenced data and information obtained from the specialist assessments. An understanding of the receiving environment is critical in order to identify aspects that may be affected by the project and in turn how the surrounding environment may affect project design considerations.

2.5 IMPACT SCREENING METHODOLOGY

The potential impacts associated with the proposed development were determined at both a desktop level based on existing information, as well as the field assessment. The following methodology was used:

- Identify potential sensitive environments and receptors that may be impacted on by the proposed development;
- Identify the type of impacts that are most likely to occur (including cumulative impacts);
- Determine the nature and extent of the potential impacts during the various developmental phases, including, construction, operation and decommissioning;
- Identify potential No-Go areas (if applicable); and
- Summarise the potential impacts that will be considered further in the EIA phase through detailed specialist studies.

Appendix 2 of GNR 982, as amended, requires the identification of the significance of potential impacts during scoping. To this end, an impact screening tool has been used in the scoping phase.

The screening tool is based on two criteria, namely probability; and consequence (**Table 2-2**), where the latter is based on general consideration to the intensity, extent, and duration.

The scales and descriptors used for scoring probability and consequence are detailed in **Table 2-3** and **Table 2-4** respectively.

Table 2-2: Significance Screening Tool

	Consequence Scale				
Probability Scale		1	2	3	4
	1	Very Low	Very Low	Low	Medium
	2	Very Low	Low	Medium	Medium
	3	Low	Medium	Medium	High
	4	Medium	Medium	High	High

Table 2-3: Probability Scores and Descriptors

Score	Descriptor
4	Definite: The impact will occur regardless of any prevention measures
3	Highly Probable: It is most likely that the impact will occur
2	Probable: There is a good possibility that the impact will occur
1	Improbable: The possibility of the impact occurring is very low

Table 2-4: Consequence Score Descriptions

Score	Negative	Positive
4	Very severe: An irreversible and permanent change to the affected system(s) or party(ies) which cannot be mitigated.	Very beneficial: A permanent and very substantial benefit to the affected system(s) or party(ies), with no real alternative to achieving this benefit.
3	Severe: A long term impacts on the affected system(s) or party(ies) that could be mitigated. However, this mitigation would be difficult, expensive or time consuming or some combination of these.	Beneficial: A long term impact and substantial benefit to the affected system(s) or party(ies). Alternative ways of achieving this benefit would be difficult, expensive or time consuming, or some combination of these.

Score	Negative	Positive
2	Moderately severe: A medium to long term impacts on the affected system(s) or party (ies) that could be mitigated.	Moderately beneficial: A medium to long term impact of real benefit to the affected system(s) or party(ies). Other ways of optimising the beneficial effects are equally difficult, expensive and time consuming (or some combination of these), as achieving them in this way.
1	Negligible: A short to medium term impacts on the affected system(s) or party(ies). Mitigation is very easy, cheap, less time consuming or not necessary.	Negligible: A short to medium term impact and negligible benefit to the affected system(s) or party(ies). Other ways of optimising the beneficial effects are easier, cheaper and quicker, or some combination of these.

The nature of the impact must be characterised as to whether the impact is deemed to be positive (+ve) (i.e. beneficial) or negative (-ve) (i.e. harmful) to the receiving environment/receptor. For ease of reference, a colour reference system (**Table 2-5**) has been applied according to the nature and significance of the identified impacts.

Table 2-5: Impact Significance Colour Reference System to Indicate the Nature of the Impact

Negative Impacts (-ve)	Positive Impacts (+ve)
Negligible	Negligible
Very Low	Very Low
Low	Low
Medium	Medium
High	High
Very high	Very high

2.6 STAKEHOLDER ENGAGEMENT

Stakeholder engagement (public participation) is a requirement of the S&EIR process. It consists of a series of inclusive and culturally appropriate interactions aimed at providing stakeholders with opportunities to express their views, so that these can be considered and incorporated into the S&EIR decision-making process. Effective engagement requires the prior disclosure of relevant and adequate project information to enable stakeholders to understand the risks, impacts, and opportunities of the proposed project. The objectives of the stakeholder engagement process can be summarised as follows:

- Identify relevant individuals, organisations and communities who may be interested in or affected by the proposed project;
- Clearly outline the scope of the proposed project, including the scale and nature of the existing and proposed activities;
- Identify viable proposed project alternatives that will assist the relevant authorities in making an informed decision;
- Identify shortcomings and gaps in existing information;
- Identify key concerns, raised by Stakeholders that should be addressed in the specialist studies;
- Highlight the potential for environmental impacts, whether positive or negative; and
- To inform and provide the public with information and an understanding of the proposed project, issues, and solutions.

It is important to note that since the proposed individual projects associated with the Secunda GtP Facility, subject to a S&EIR Process, are located within the same geographical area, an integrated stakeholder engagement process (public participation) will be undertaken for these projects. A Stakeholder Engagement Report (SER) will be compiled and included in the FSR detailing the projects' compliance with Chapter 6 of the NEMA EIA Regulations 2014, as amended.

2.6.1 STAKEHOLDER IDENTIFICATION

Stakeholders were identified and will continue to be identified through several mechanisms. These include:

- Utilising existing databases from other projects in the area;
- Networking with local business owners, non-governmental agencies, community based organisations, and local council representatives;
- Field work in and around the project area;
- Advertising in the Newspapers;
- Placement of community notices;
- Completed comment sheets; and
- Attendance registers at meetings.

All Stakeholders identified to date have been registered on the project stakeholder database. The EAP endeavoured to ensure that individuals/organisations from referrals and networking were notified of the Proposed Project. Stakeholders were identified at the horizontal (geographical) and vertical extent (organisations level).

A list of stakeholders captured in the project database is included will be included in the DSR.

2.6.2 STAKEHOLDER NOTIFICATION

Direct Notification

Notification of the proposed Project will be issued to potential Stakeholders, via direct correspondence (i.e., site notices and e-mail) on **14 October 2026**. The notification letter that was circulated is included in **Appendix F.3** Proof of notification will be included in the FSR.

Newspaper Advertisements

In accordance with the requirements of GNR 982, as amended, the proposed project will be advertised in two local newspapers. The purpose of the advertisement will be to notify the public about the proposed project and to invite them to register as stakeholders. A copy of the advertisements will be included in the FSR. The relevant scoping phase advertisement dates are listed in **Table 2-6**.

Table 2-6: Dates on which the Adverts were published

Newspaper	Publication Date	Language
Ridge Times	14 October 2026	English and Afrikaans
Sowetan	14 October 2026	English and IsiZulu

Site Notices

The official site notices will be erected as per GNR 982, as amended, on the boundary fence of the proposed site. In addition, general project notices, announcing the Proposed Project and inviting stakeholders to register, will be placed at various locations in and around the project area. A copy of the site notice is included in **Appendix F.2**.

2.6.3 PUBLIC REVIEW

The DSR will be placed for public review for a period of 30 days from **14 October 2026 to 16 November 2026**, at the following public places:

- Govan Mbeki Public Library;
- eMbalenhle Library
- Sasol Secunda Club
- Charlie 1 Entrance
- WSP website (<https://www.wsp.com/en-ZA/services/public-documents>).
- Data free website (<https://wsp-engage.com/>)

2.6.4 COMMENT AND RESPONSE REPORT

All concerns, comments, viewpoints, and questions (collectively referred to as 'issues') received during the comment period will be documented and responded to adequately in the SER which will be included in the FSR. Where comments are project specific, this will be noted in the Comments and Response section of the SER. This will record the following:

- List of all issues raised;
- Record of who raised the issues;
- Record of where the issues were raised;
- Record of the date on which the issue was raised; and
- Response to the issues.

2.6.5 WAY FORWARD

Final Scoping Report Submission

All issues raised during the scoping phase of the proposed project will be incorporated into the FSR and will be addressed during the EIR Phase.

The DFFE will be allocated 43 days to review the FSR. This FSR will be placed on stakeholder review for a reasonable time period during the DFFE's final review and decision-making process. The delegated CA must within this specified timeframe issue a decision on whether to proceed onto the next phase, the EIR phase.

Ongoing Consultation and Engagement

In addition to the public documents distributed to stakeholders, there will be ongoing communication between the proponent, the EAP and stakeholders throughout the S&EIR process. These interactions include the following:

- In addition to the project announcement letters, a letter will be sent out to all registered stakeholders providing them with an update of the proposed project once the FSR has been approved;
- Interactions with stakeholders will take place in English , Isizulu and Afrikaans;
- Feedback to stakeholders, individually and collectively;
- Written responses (email, faxes or letters) will be provided to stakeholders acknowledging issues and providing information requested (dependent on availability); and
- As per the GNR 982, as amended, particular attention will be paid to landowners, and neighbouring communities, specifically where literacy levels and language barriers may be an issue.

2.7 ASSUMPTIONS AND LIMITATIONS

General assumptions and limitations

- The EAP hereby confirms that they have undertaken to obtain project information from the client that is deemed to be accurate and representative of the project;
- Site visits have been undertaken to better understand the project and ensure that the information provided by the client is correct, based on site conditions observed;
- The EAP hereby confirms their independence and understands the responsibility they hold in ensuring all comments received are accurately replicated and responded to within the EIA documentation;
- The comments received in response to the public participation process, will be representative of comments from the broader community; and

- Based on the Pre-Application meeting and subsequent minutes, the CA would not require additional specialist input, in order to make a decision regarding the application.

Soil and Agricultural

- There are no specific assumptions, uncertainties or gaps in knowledge or data that affect the findings of this study.

Archaeology and Cultural Heritage

- No assumptions were provided by the specialist.

Palaeontology

Based on the geology of the area and the palaeontological record as we know it, it can be assumed that the formation of the dolomites, sandstones, shales and sands are typical for the country and Only some might contain fossil plant, insect, invertebrate and vertebrate material. The sands of the Quaternary period would not preserve fossils.

Visual

The following qualification is relevant to the field of VIA and the findings of this study:

- The proposed project layout and description of individual project components was not available at the time of this report compilation, and the findings of this VIA baseline is therefore considered preliminary and subject to potential verification during impact assessment
- The specific nature and appearance of individual equipment, plant and buildings is not expected to materially influence the findings of the VIA baseline assessment, as the proposed project will take place within an existing industrial visual context
- Determining the value, quality and significance of a visual resource or the significance of the visual impact that any activity may have on it, in absolute terms, is not achievable. The value of a visual resource is partly determined by the viewer and is influenced by that person's socio-economic, cultural, and individual background, and is even subject to fluctuating and intangible factors, such as emotional mood and appreciation of "sense of place"
- This situation is compounded by the fact that the conditions under which the visual resource is viewed can change dramatically due to natural phenomena, such as weather conditions and seasonal change. Visual impact cannot therefore be measured simply and reliably, as is for instance the case with water, noise, or air pollution
- It is therefore not possible to conduct a VIA without relying to some extent on the expert opinion of a qualified consultant, which is inherently subjective. The subjective opinion of the visual consultant is however unlikely to materially influence the findings and recommendations of this study, as a wide body of scientific knowledge exists in the industry of VIA, on which findings are based

Terrestrial

The following limitations and assumptions are applicable to this assessment:

- This Scoping Phase assessment is based on a review of available biodiversity datasets, published literature, conservation planning products, available aerial imagery, and previous

ecological studies relevant to the study area and surrounding region, supplemented by a single field survey undertaken on 24 April 2026.

- The assessment was undertaken during a single survey event and therefore provides a temporal snapshot of environmental conditions present within the study area at the time of the survey. Species composition, habitat condition, and ecological processes may vary seasonally and inter annually in response to climatic conditions and natural ecological dynamics.
- The primary objective of the field survey was to verify environmental sensitivities, characterise habitats and ecological features, and assess habitat suitability for SCC. The survey was not intended to constitute a comprehensive species inventory or dedicated species-specific survey for all faunal and floral taxa that may occur within the study area.
- The absence of a species during the survey should not be interpreted as confirmation that the species is absent from the study area. Certain species may remain undetected due to seasonal variability, life-history characteristics, low population densities, cryptic behaviour, restricted activity periods, or temporary absence from suitable habitat at the time of survey.

Aquatic

The following limitations and assumptions are expressed as part of this study:

- Wetland delineations were informed by existing baseline data presented in the recent wetland monitoring report by Linström et al., (2024) and were verified and updated where possible during the April 2026 field survey.
- Areas that were inaccessible due to health and safety constraints or access limitations were assessed using aerial imagery, supported by available desktop datasets and observations from accessible adjacent areas.
- This Site Sensitivity Verification (SSV) and scoping report was informed by a combination of desktop review, available national and provincial datasets, previous specialist studies, satellite imagery and site-based verification.
- The results of any specialist reports reviewed and referenced are assumed to be accurate.
- This assessment represents a once-off assessment of the aquatic environment and can only reflect the conditions observed at the time of the survey, with some interpretation of historical conditions based on field evidence and satellite imagery. As vegetation, flow conditions, wetland expression and aquatic habitat availability vary temporally and spatially, certain features may not have been present or detectable during the site visit.
- The assessment techniques applied are intended to standardise and objectify the assessment of aquatic ecosystem condition, function, potential impacts and ecosystem services. However, some aspects of the assessment remain dependent on the specialist's professional judgement, field experience and interpretation of available evidence. The assessor will, if additional information or counter arguments are provided and verified, hold the right to amend the report if need be.

Air Quality

- No assumptions were provided by the specialist.

Climate Change

The following gaps and limitations must be noted:

- This assessment focuses on the Sasol GtP facility and associated on-site infrastructure and does not extend to broader industrial operations, upstream gas supply, or downstream energy distribution systems beyond the Project boundary. As a result, Scope 3 emissions (including upstream fuel production and downstream use of generated electricity) are excluded from this assessment and may result in an underrepresentation of the Project's full lifecycle GHG footprint. Additionally, transitional climate risks, such as potential future regulatory changes, carbon pricing developments, market shifts, and evolving stakeholder expectations, are not assessed at this stage and may be considered in the full CCIA, where relevant.
- Climate projections are derived from regional-scale models, which introduce inherent uncertainties due to differences in spatial resolution, emissions scenarios, and modelling approaches. Variability in climate datasets may influence the interpretation of projected trends, and results should therefore be considered indicative of potential future conditions rather than precise, site-specific forecasts.

Notwithstanding these assumptions and limitations, it is the view of WSP that this DSR provides a good description of the issues associated with the project, and a reasonable plan of study for the EIA phase.

3 PROJECT DESCRIPTION

This section provides a description of the location of the project area and the site location alternatives considered for the project. The descriptions encompass the activities to be undertaken during the construction and operational phases as well as the consideration for site accessibility, water demand, supply, storage, and site waste management. This section also considers the need and desirability of the project in accordance with Appendix 1 of GNR 326.

3.1 SITE LOCATION

The proposed Secunda GtP Facility is located in Secunda in the GMLM and GSDM, in the Mpumalanga Province of South Africa (**Figure 3-1**) The proposed Secunda GtP Facility would have a project footprint area of approximately 50 000m² or 5 ha.

The details of the property associated with the proposed Secunda GtP Facility, including the 21-digit Surveyor General (SG) codes for the cadastral land parcels are outlined in **Table 3-1**. The co-ordinates of the cadastral land parcels are included in **Table 3-2**.

The proposed Secunda Gas to Power facility ,located IN Secunda ,Mpumalanga province
Project No.: ZA0068671.2768 | Our Ref No.: 01
Sasol South Africa Limited

Table 3-1 – Secunda Gas to Power Facility Affected Farm Portions

Farm Name and Number	Portion	21 Digit Surveyor General Code of Each Cadastral Land Parcel
45/290 (ERF 8488)	0	T0IS00190000848800000
8/290 (ERF 8342)	0	T0IS00190000834200000
FABRIEK 601 IS (ERF 8341)	0	T0IS00190000834100000

3.2 GAS TO POWER ELECTRICITY GENERATION PROCESS

The Secunda GtP project aims to generate electricity through LNG (MRG being considered as back-up feed), with the objective to provide power to the national grid, supporting South Africa's growing energy needs.

The Inside Battery Limit (IBL) scope includes the main equipment for generating electricity, which will be proposed by the vendor. The Outside Battery Limit (OBL) scope will focus on the external infrastructure and utilities required to support the Secunda GtP project (integration into the Secunda facility). The electrical scope will cover the reconfiguration of the electrical network. The installation of transmission lines, along with the routing of high-voltage cables through existing servitudes, will also be considered.

In addition to the electrical work, the OBL scope will involve the installation and routing of various pipelines. These will include pipelines for LNG, MRG and any required utilities such as cooling water, raw water, firewater, instrument air, and any effluent. Depending on the IBL requirements, raw water treatment will also be included to achieve the necessary water quality specifications.

Alternatives were considered such as Open Cycle Gas Turbine (OCGT) (blue), Combined Heat and Power (CHP) (blue & yellow) and CCGT (blue, yellow and red), it has been established that CCGT is the option to be taken forward.

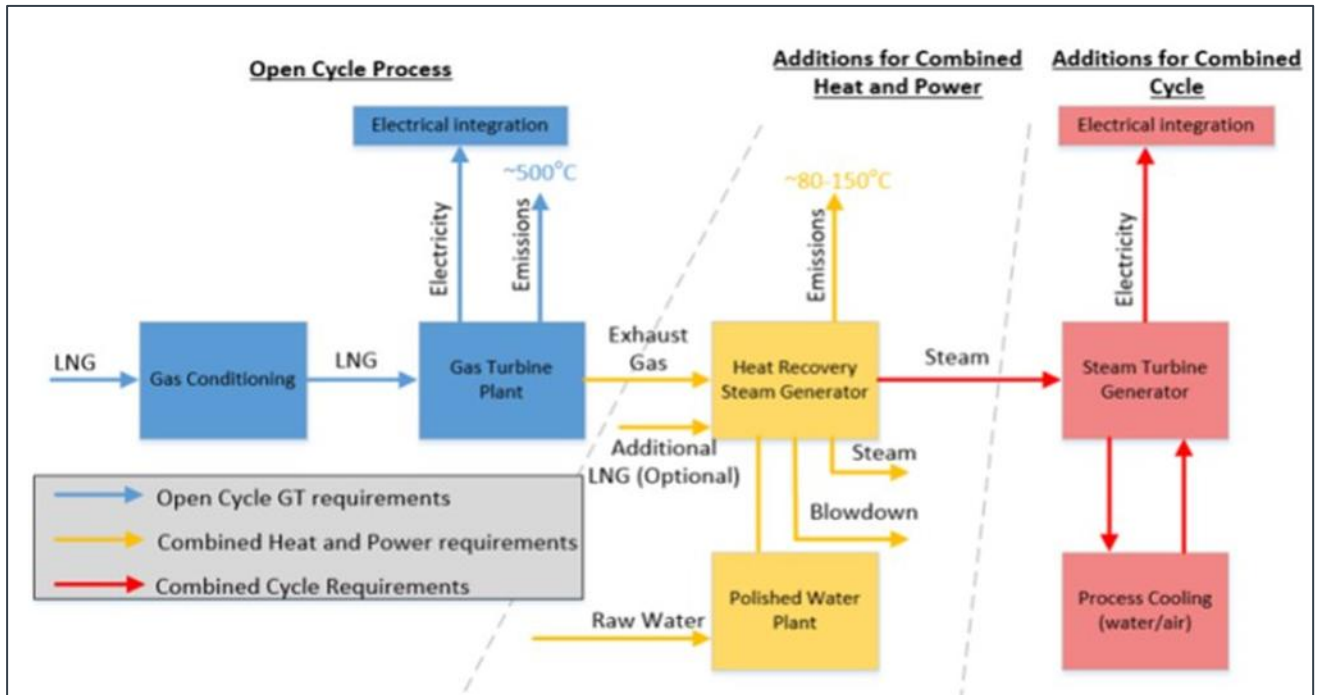


Figure 3-2 – Overview of the Gas to Power Facility

3.3 PROJECT INFRASTRUCTURE

The proposed Secunda GtP Facility will be developed with a capacity of up to 800 megawatts (MW). The key components are outlined in **Table 3-2**.

Table 3-2 – Proposed project infrastructure

Technical details of the proposed Secunda Gas to Power Facility		
Farm Portions	<ul style="list-style-type: none"> 45/290 (ERF 8488) 8/290 (ERF 8342) FABRIEK 601 IS (ERF 8341) 	
Central coordinates of the site and activity location	Gas to Power Facility	Central point on the site: -26.563088, 29.161332
	MRG Pipeline	East factory: - Start point: -26.553602, 29.173919 - Central point): -26.558468, 29.171505 West factory: - Start point: -26.551528, 29.155120 - Central point): -26.558140, 29.157479
	LNG Pipeline	Route 1(through primary area):

		<ul style="list-style-type: none"> - Start point: -26.548064, 29.189061 - Central point): -26.555818, 29.171938 Route 2 (around the factory): <ul style="list-style-type: none"> - Start point: -26.548064, 29.189061 - Central point): -26.568217, 29.178204
Total Site Extent	Approximately 50 000m ²	
Design Specifications		
Capacity of power plant (including all equipment and auxiliaries to enable operation)	778.6 – 800.6 MW	
Length of pipeline (LNG)	Route 1, through primary area: 5.38 km Route 2, around the south-eastern side of the factory: 5.87 km	
Pipeline specifications (LNG)	16" pipeline, C3 line class (carbon steel)	
Length of pipeline (MRG)	Total length of piping is 5.54 km (including piping from east and west factories).	
Pipeline specifications (LNG)	14" pipeline, C line class (carbon steel)	
Raw water treatment	The raw water infrastructure requirements are as follows: <ul style="list-style-type: none"> • Two stormwater attenuation facilities (evaporation ponds/dams) with surface areas of approx. 0.5 ha and 0.3 ha, each to a depth of 1.0 m, providing a combined storage capacity of 9,000 m³; • Main raw water storage tanks with a total storage capacity of up to 10,000 m³; • Raw water storage tanks for the water treatment system used for demi-water production, with a total storage capacity of 6,000 m³, supplied from the main raw water tanks; • Demineralised water storage tanks with a total storage capacity of up to 3,000 m³, supplied from the raw water tanks of the water treatment system; • Water storage tanks for the fire-fighting system, with a total storage capacity of up to 1,250 m³, supplied from the raw water tanks. 	
Emissions	Number of Stacks: <ul style="list-style-type: none"> • 1 stack per HRSG • 1 stack for HRSG Bypass • 2 stacks for each GT • Stack Dimensions: 7 to 9 m stack diameter and 60 to 65 m stack height. • Exit Velocity: 15 to 20 m/s flue gas velocity at stack exit and will be verified with project specific details 	

Construction schedule	Phase	Duration	Key Outcome
	Development & Financial Close	12-24 Months	Permits +funding secured
	Construction	24-36 Months	Plant built & commissioned
	Operation	25-30 years	Power generation lifecycle
Traffic	Construction: <ul style="list-style-type: none"> • Light vehicles 50 – 100p/d; • Heavy trucks 50 – 100p/d Operation: <ul style="list-style-type: none"> • Staff cars 40–60p/d 		
Powerlines	117m 132 kV Line		
Access Roads	PDP Kruger Avenue Energy Road, Synfuels East Road, Road 21, Road 2D (inside Secunda Operations)		
Associated Infrastructure	Utilities and effluent streams piping between SO and power plant		

3.4 GENERAL CONSTRUCTION ACTIVITIES

The construction process will follow industry standard methods and techniques. Key activities associated with the construction phase are described in **Table 3-3**.

Table 3-3 - Construction Activities

Activity	Description
Site preparation and establishment	Site establishment will include clearing of the footprint of the GtP Facility, for laydown area and access routes. The temporary laydown area will be constructed, including establishment of the construction camp (temporary offices, storage containers, concrete batching plant, etc). Site establishment will also entail the installation and/or connection of services (sanitation, electricity, etc).
Transport of components and equipment to site	Bulk materials (aggregate, steel, etc.), infrastructure components lifting and construction equipment (excavators, trucks, compaction equipment, etc.) will be sourced and transported to site via suitable National and provincial routes and designated access roads.
Excavation and earthworks	Subject to the determination of founding specifications, earthworks will be required.

Activity	Description
Establishment of ancillary infrastructure	Ancillary infrastructure will include construction site office, temporary laydown area and workshop area for contractor's equipment.
Rehabilitation	Once all construction is completed on site and all equipment and machinery has been removed from the site, the site will be rehabilitated.

3.5 ALTERNATIVES

The EIA Regulations of 2014 (as amended) require that the S&EIR process must identify and describe alternatives to the proposed activity that were considered, or motivation for not considering alternatives. Different types or categories of alternatives could be considered including different locations, technology types, and project layouts. At the scoping level the evaluation of alternatives is provided at a high level in the absence of detailed environmental comparators for each alternative; due to the two-staged nature of the S&EIR process it is more suitable to identify and describe the potential alternatives on a high-level basis within scoping, and to perform a more detailed analysis of alternatives (with environmental comparators) in the EIA phase of the project. As such, the S&EIA will holistically assess the impacts and risks of each alternative in a comparative way, as suggested by Appendix 2 of the EIA Regulations of 2014 (as amended).

3.5.1 SITE ALTERNATIVES

A brownfield site adjacent to the existing Gas Turbines within the primary area of Sasol's Secunda Operations (SO) has been identified as the preferred location for the new gas-to-power facility. This site is considered the most suitable option because it leverages an already industrialised footprint with established access to supporting infrastructure, services, and power-related interfaces, thereby reducing the extent of new civil works, utility connections, and land disturbance that would typically be required for a greenfield development. Locating the new facilities adjacent to the existing GT infrastructure also supports more efficient integration with the current operational environment, simplifies constructability and interface management, and can shorten development timelines by making use of land that is already compatible with power generation activities. The use of this brownfield site is advantageous because it limits encroachment on undeveloped land, minimises incremental ecological disturbance, and aligns with the general preference to intensify development within existing industrial areas where practical. A greenfield site has not been considered in this study.

The selection of the Secunda GtP Facility site is the outcome of a feasibility assessment by the proponent, which inter alia served to identify site options that would be optimal for energy production and grid interconnection. Multiple locations were assessed, including sites within Sasol Secunda Operations (brownfield site), a greenfield site in the secondary area of Secunda Operations (SO), and coastal locations outside Secunda (e.g., Richards Bay). The evaluation concluded that the brownfield site within SO area offered the most benefits. The Secunda GtP Facility site was selected because it is strategically located due to the following factors:

- Proximity to the electrical infrastructure to enable evacuation of generated power to the grid, along with access to the utilities that can be supplied by SO to support the power plant, and proximity to the existing gas supply line to SO, thereby maximising the use of existing infrastructure.
- Land Availability and Landownership – adequate land is available within primary facility area to accommodate the power plant footprint.
- Strategic Approach – South Africa's gas demand is predominantly inland (~70%) and ~30% coastal. Integrating this demand with a Secunda (inland) based GtP project can underpin import
- infrastructure and supply agreements of LNG, while absence of an anchor demand risks stranding a significant portion of inland demand given the anticipated natural gas shortfall.
- Road and labour pool accessibility – existing access roads are available to support project construction and operations.
- Topography – refer to the summary section above
- Competition – the selected brownfield site within SO provides a competitive advantage over a greenfield location in Secunda or other areas due to its proximity to existing electrical and utilities infrastructure, thereby reducing integration scope.

The site is considered suitable for these reasons and the investigation of an alternative site is not currently proposed within this Scoping Report

3.5.2 ALTERNATIVE TECHNOLOGY

GtP will play a critical role in South Africa's energy transition by bridging the gap between coal-fired generation and non-dispatchable renewable energy. This need is reflected in the Integrated Resource Plan (IRP) and reinforced by the Department of Electricity and Energy's (DEE) GASIPPPP RFP, which targets the procurement of up to 3,000 MW of new GtP capacity.

Among available technologies, GtP remains one of the most competitive sources of dispatchable electricity, offering proven reliability compared to energy storage solutions such as batteries and thermal storage. While alternative technologies are rapidly improving in cost and performance, GtP continues to provide an effective and flexible solution for meeting dispatchable power requirements in a grid with increasing renewable energy penetration.

The following technologies were considered in this project:

- OCGT – alternatively referred to as a peak load facility,
- CHP, and a
- CCGT – alternatively referred to as a base load facility

The project will not aim to generate steam for utilisation within the existing facility, the steam that is produced as part of base load facility option will be used for electricity production via a steam turbine. Thus, the CHP option was not pursued further. Given its higher efficiency and subsequent lower cost per unit of electricity generated, only the CCGT technology will be further developed.

For the proposed 780 MW power plant at the Sasol Secunda site, gas is the preferred fuel option because it provides the most practical combination of large-scale dispatchable generation, site integration, operational flexibility, and comparatively lower environmental impact relative to the most credible alternatives. By contrast, wind and solar PV are inherently variable and non-dispatchable and would therefore be unable to provide equivalent firm capacity without substantial overbuild and large-scale energy storage, which would materially increase land requirements, system complexity, and cost. Diesel-fired generation, while dispatchable, is not considered suitable for sustained operation at this scale because of its significantly higher fuel cost, higher emissions profile, and the logistics burden associated with continuous bulk fuel supply. Relative to liquid fuels and coal-based alternatives, gas-fired generation also offers lower specific CO₂ emissions per unit of electricity generated, with materially lower particulate, sulphur oxide, and nitrogen oxide emissions when modern combustion systems are applied, which is particularly relevant in the Secunda area given the existing regional air quality and decarbonisation pressures.

Gas is also strongly aligned with the site's existing industrial energy infrastructure and Sasol's demonstrated gas-to-power capability, including the presence of existing gas turbine operations, established power-generation interfaces, and the strategic role of Secunda in the emerging gas market and future LNG transition. In addition, gas-fired generation can be deployed in high-efficiency combined-cycle form at this plant size, making it substantially more efficient and more suitable for sustained mid-merit to baseload duty than simple-cycle or reciprocating engine alternatives at equivalent capacity.

For a plant of around 780 MW, a CCGT configuration is technically superior because it maximises fuel utilisation at large scale by recovering the high-grade exhaust heat from the gas turbine in a heat recovery steam generator to drive a steam turbine, achieving net efficiencies typically in the ~55-62% range, compared with ~35-40% for an OCGT where exhaust heat is wasted, and lower overall plant efficiency for gas engine installations when scaled to this size. At ~780 MW, an OCGT would require multiple large simple-cycle units with significantly higher specific fuel consumption, higher CO₂ emissions per MWh, and poorer economics for baseload or mid-merit operation, as OCGTs are optimised for peaking and fast start rather than sustained high load factors. Gas engines, while efficient and flexible at smaller capacities, become impractical and less competitive at hundreds of megawatts due to the very large number of units required.

F-class machines (GE 9F.06 and SGT5-4000F) were evaluated in a 2x2x1 configuration. Under the site-specific power plant conditions, the SGT5-4000F delivers a higher net power output than the GE 9F.06, while both models achieve the same efficiency. For the purposes of this study, the 2x2x1 SGT5-4000F configuration will be used. However, a detailed technology selection will have to be conducted during the feasibility stage.

3.5.3 LAYOUT ALTERNATIVES

Motivation for proposed layout alternatives:

3.5.3.1 Pipeline Routing

Two alternative pipeline routing options have been identified for the LNG pipeline from the Pressure Protection Station (PPS) to the brownfield plot where the Secunda GtP plant will be located. A route passing through the primary area (LNG alt 1) and an alternative route passing through the



secondary area (LNG alt 2) along the south-eastern side of the factory. The final LNG pipeline routing will be selected as the project design develops and following consideration of environmental sensitivities and technical inputs obtained during the EIA phase. This routing is illustrated in **Figure 3-3**.

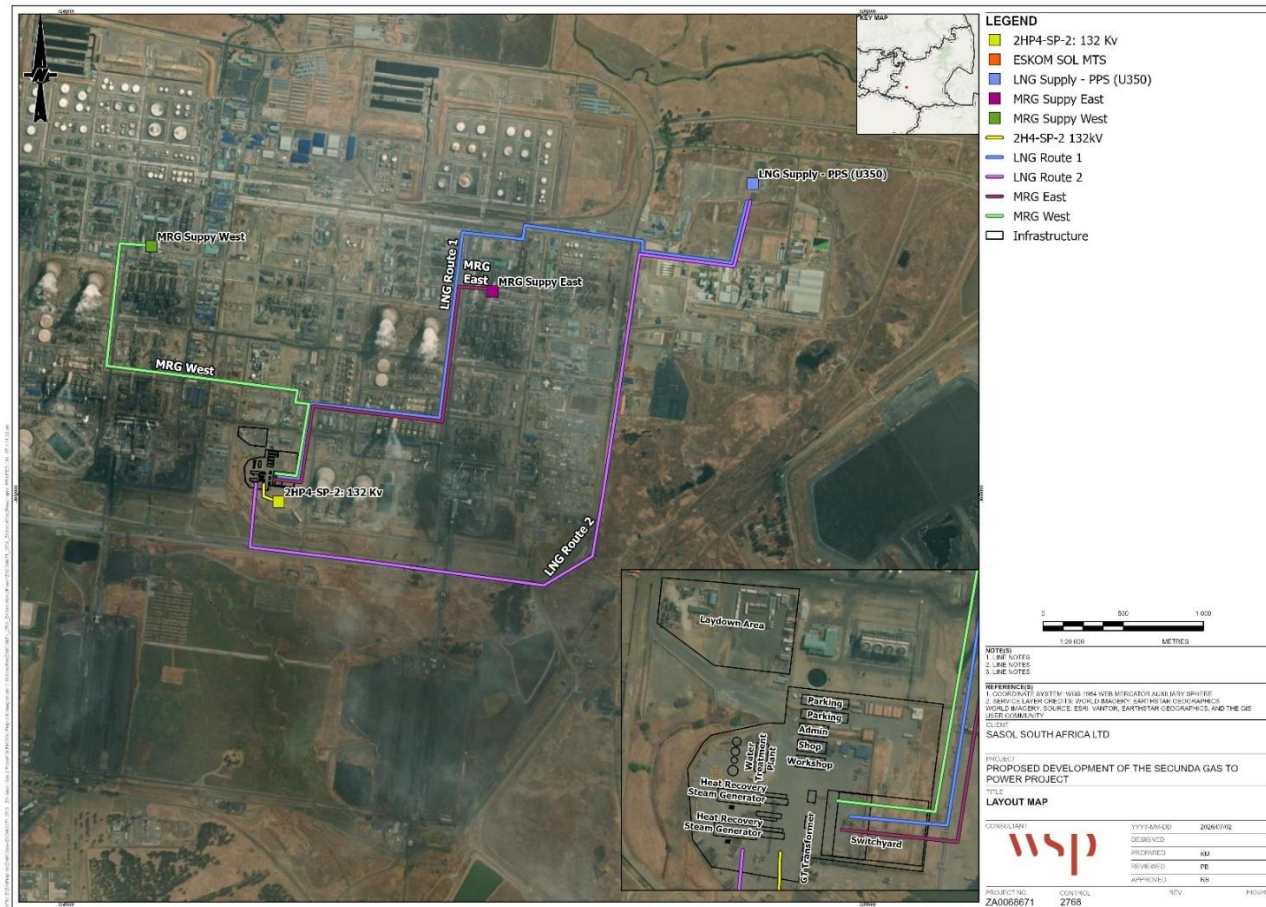


Figure 3-3 – Proposed GtP layout

Furthermore, the preliminary MRG pipeline routings for both the eastern and western options, identified during the screening activities, extend from Gas Circuit to the brownfield site through the primary area. These MRG pipeline routings remain preliminary and may be refined should alternative alignments be identified as the project progresses and the specialists undertake their site sensitivity verification processes. Both the eastern and western MRG pipeline routings are still subject to confirmation during the EIA phase

3.5.3.2 Water Supply

Two water supply cases are being considered for the proposed CCGT system. In the first case, raw water would be treated in a new water treatment plant to produce polished water for the CCGT system, using a combination of ultrafiltration, reverse osmosis and mixed-bed ion exchange technologies, with air cooling assumed for the system's cooling requirements. Under this case, the estimated raw water make-up requirement would be approximately 20–40 m³/h, supplied from the existing Bosjesspruit Dam (through existing pipelines) that provides raw water to the Secunda facility with a demand expected to remain within Sasol's permitted raw water abstraction limit. Buffer storage for raw water feed, effluent and polished water would also be required as part of the water treatment plant, and certain dosing chemicals for the water treatment facility may need to be stored on site.

In the second case, raw water would be required as feed to the cooling water system to generate the necessary cooling water for the CCGT process using a mechanical draft cooling tower system. In this instance, the estimated make-up requirement would be approximately 780 m³/h, also supplied from the existing Bosjesspruit Dam (through existing pipelines). This abstraction would remain within Sasol's permitted abstraction limit. The intention would be to use blowdown from the cooling water system as feed to the water treatment plant to produce the polished water required for the CCGT system. As with the first case, buffer storage for feed water, effluent and polished water would be required, and dosing chemicals for both the cooling tower system and the water treatment facility may need to be stored on site.

No further licencing would be required for these two potential raw water streams as their capacities and throughputs would not exceed the current licencing limits.

3.6 NEED AND DESIRABILITY

South Africa is faced with significant increases in electricity demand and a shortage in electricity supply. South Africa is the seventh-largest coal producer in the world, with approximately 77% of the country's electricity generated from coal. This large dependence on coal and its use has also resulted in a variety of negative impacts on the environment, including the contribution to climate change. South Africa is also the highest emitter of greenhouse gases in Africa; attributed to the country's energy-intensive economy that largely relies on coal-based electricity generation.

A new energy mix (GtP) is regarded as an important contribution to meeting international and national targets of reducing reliance on fossil fuels, such as coal, which contribute towards greenhouse gas emissions and resultant climate change. The need and desirability of the proposed Secunda GtP Facility has been considered from an international, national, and regional perspective

Among available technologies, GtP remains one of the most competitive sources of dispatchable electricity, offering proven reliability compared to energy storage solutions such as batteries and thermal storage. While alternative technologies are rapidly improving in cost and performance, GtP continues to provide an effective and flexible solution for meeting dispatchable power requirements in a grid with increasing renewable energy penetration

3.6.1 NATIONAL PERSPECTIVE

The authorisation of the Secunda GtP Facility will further align with South Africa's National Climate Response White Paper which outlines the country's efforts to manage the impacts of climate change and to contribute to the global efforts to stabilize the greenhouse gases concentrations in the atmosphere.

The proposed Secunda GtP will contribute to South Africa's Just Energy Transition (JET) by supporting the transition from a predominantly coal-based energy system towards a lower-carbon and more diversified energy mix. The facility aligns with national energy objectives aimed at improving energy security, enabling a reliable transition, and reducing greenhouse gas emissions relative to conventional fossil fuel generation. The GtP Facility will contribute to reduced emissions and subsequently climate change whilst promoting industrial development and job creation.

The use of natural gas, in the form of LNG and MRG, represents a lower-emissions alternative to coal and liquid fuels and is recognised as a transitional energy source that can facilitate the integration of renewable energy into the national grid.

The proposed Secunda GtP Facility will also aid in overcoming the power shortages that are currently faced in the country. In 2023, South Africa witnessed its longest recorded hours of load shedding, with the power being off for 6 800 hours of the year, as illustrated in **Figure 3-4**. The South African Government has taken strides to try reducing these power cuts through the implementation of bid Windows in REIPPP and lifting the independent power generation threshold to 100MW, but it is still expected that the country will undergo more load shedding.

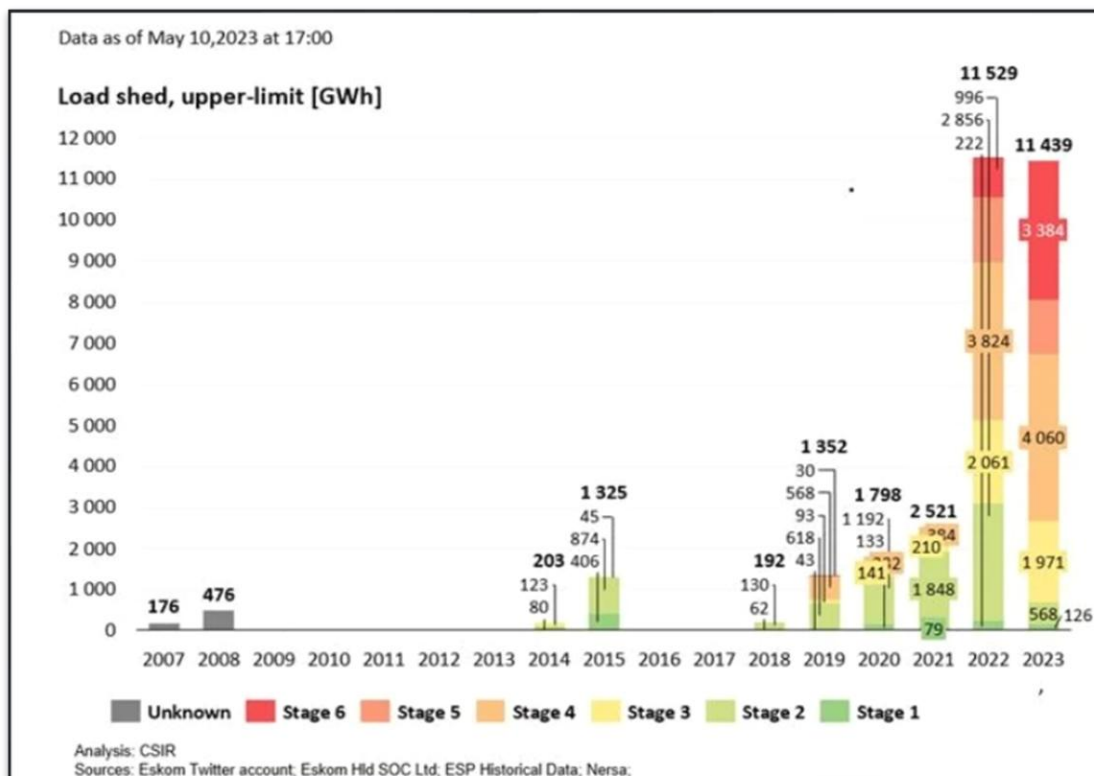


Figure 3-4 - Load shedding hours over the years in South Africa

3.6.2 REGIONAL AND LOCAL PERSPECTIVE

Just Energy Transition

The Just Transition is described as the transition towards a low-carbon and climate-resilient economy that maximizes the benefits of climate action while simultaneously improving the welfare of the workers and their communities.

This project will pave the way for the JET in South Africa and promote the transition from a fossil fuel-based economy to a low carbon economy. South Africa is the seventh-largest coal consumer in the world and the leading African carbon emitter, with 435.9 million metric tons of carbon emissions recorded in 2022. South Africa heavily relies on coal to fire up 30 000 MW of electricity, which serves an estimated 80% of the country's energy needs.

Coal power stations and the coal mining industry play a vital component in the economic and social components of the local Mpumalanga economy. Shifting to a low carbon economy will thus need to offset or exceed the benefits being realized by fossil fuels in the province. Thus, a key factor to ensuring the success of the JET is not only to focus on the transition from fossil fuels to a diversified energy supply but to simultaneously ensure the Just Transition of jobs and skills

Role of Gas to Power in the Just Energy Transition

GtP is widely recognised as a key transitional technology, providing reliable, dispatchable, and comparatively lower-carbon electricity generation relative to coal. In this regard, the Project

represents a strategic intervention that supports South Africa's energy transition while addressing regional socio-economic realities.

As a major participant in South Africa's energy sector, both as a supplier of gas and a significant consumer of electricity, Sasol is uniquely positioned to support the Just Energy Transition. South Africa's current gas market is characterised by an estimated 70% inland and 30% coastal demand split, largely driven by small- to medium-scale industrial and commercial users. On a standalone basis, this fragmented inland demand is insufficient to underpin long-term LNG import infrastructure and associated supply contracts.

The aggregation of this inland gas demand with a large-scale GtP project provides a viable pathway to anchor the necessary import infrastructure and supply arrangements. In the absence of such an anchor demand, there is a material risk that up to 70% of the inland gas market could become stranded, particularly in light of the impending natural gas supply shortfall currently facing the country. The Project therefore plays a critical role in ensuring continuity of gas supply for inland users, supporting energy security and market stability. This national gas demand context is illustrated in **Figure 3-5** below .

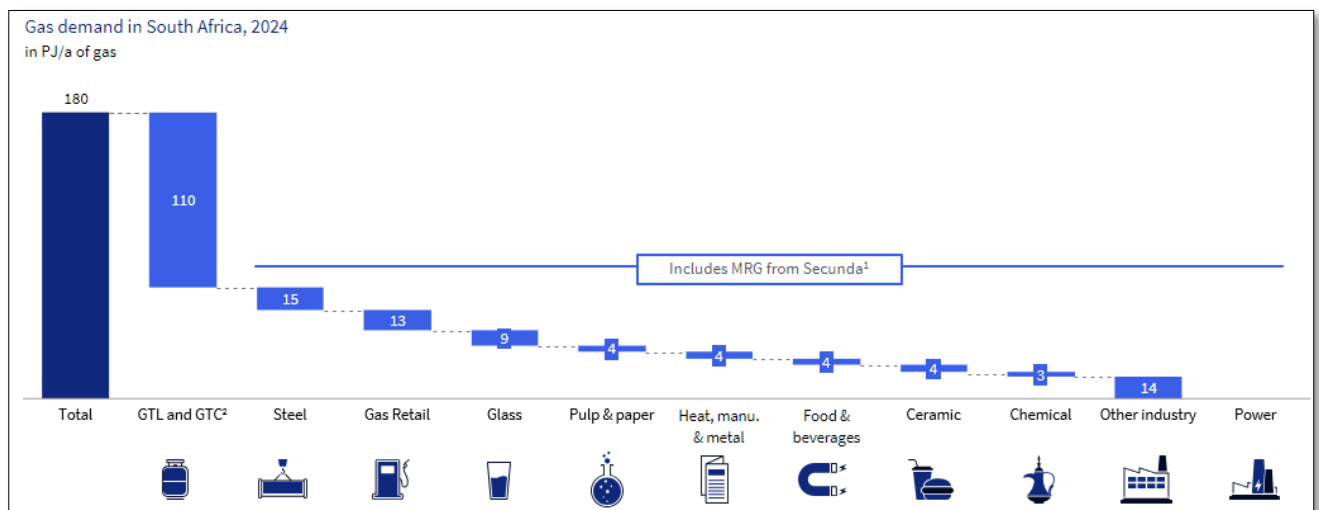


Figure 3-5 - Gas demand in South Africa (Source:<https://energycouncil.org.za/mzansi/gas/>)

From a Just Energy Transition perspective, GtP offers several key socio-economic benefits at both local and regional levels:

- It enables a gradual transition away from coal, avoiding abrupt shutdowns that could result in large-scale job losses.
- It supports job retention and skills transfer, particularly for workers with experience in power generation, process engineering, mechanical maintenance, and industrial operations.
- It creates new employment opportunities during the construction, operation, and maintenance phases of the facility.
- It contributes to lower carbon intensity electricity generation, supporting national climate commitments while maintaining reliable baseload power.

Local Socio-Economic context and employment benefits

The transition towards diversified energy mix will improve the socio-economic conditions of the GMLM. GMLM recorded an unemployment rate of 34.4% in 2011 (StatsSA,2011). The Project will aid in solving two of the leading challenges faced by most municipalities in the country, namely the cost of electricity and lack of adequate employment opportunities. The developer foresees this project as being one of the main the catalysts to realizing a true Just Energy Transition for Mpumalanga.

Large-scale energy infrastructure projects, such as the proposed Gas-to-Power facility, are desirable in this context as they provide opportunities for employment, skills application, and skills transition across the project lifecycle, particularly in areas with an established industrial skills base. Employment opportunities typically arise during the project development, construction, and operational phases, supporting both short-term and longer-term economic activity.

Power supply

Secunda is a major industrial hub that is heavily reliant on stable electricity supply. Gas plants provide high reliability and availability (>90%) and can operate continuously, reducing risk of production losses and shutdowns due to load shedding.

Desirability of the Project Site

A brownfield site adjacent to the existing Gas Turbines within the primary area of Sasol's Secunda Operations has been identified as the preferred location for the new gas-to-power facility. This site is considered the most suitable option because it leverages an already industrialised footprint with established access to supporting infrastructure, services, and power-related interfaces, thereby reducing the extent of new civil works, utility connections, and land disturbance that would typically be required for a greenfield development.

4 GOVERNANCE FRAMEWORK

4.1 NATIONAL ENVIRONMENTAL LEGAL FRAMEWORK

The South African regulatory framework establishes well-defined requirements and standards for environmental and social management of industrial and civil infrastructure developments. Different authorities at both national and regional levels carry out environmental protection functions. The applicable legislation and policies are shown in **Table 4-1**.

Table 4-1: Applicable National Legislation

Legislation	Description of Legislation and applicability
The Constitution of South Africa (No. 108 of 1996)	The Constitution cannot manage environmental resources as a stand-alone piece of legislation hence additional legislation has been promulgated to manage the various spheres of both the social and natural environment. Each promulgated Act and associated Regulations are designed to focus on various industries or components of the environment to ensure that the objectives of the Constitution are effectively implemented and upheld on an on-going basis throughout the country. In terms of Section 7, a positive obligation is placed on the State to give effect to the environmental rights.
National Environmental Management Act (No. 107 of 1998)	<p>In terms of Section 24(2) of the NEMA, the Minister may identify activities, which may not commence without prior authorisation. The Minister thus published GNR 983 (as amended) (Listing Notice 1), GNR 984 (as amended) (Listing Notice 2) and GNR 985 (as amended) (Listing Notice 3) listing activities that may not commence prior to authorisation.</p> <p>The regulations outlining the procedures required for authorisation are published in the EIA Regulations of 2014 (GNR 982) (as amended). Listing Notice 1 identifies activities that require a BA process to be undertaken, in terms of the EIA Regulations, prior to commencement of that activity. Listing Notice 2 identifies activities that require an S&EIR process to be undertaken, in terms of the EIA Regulations, prior to commencement of that activity. Listing Notice 3 identifies activities within specific areas that require a BA process to be undertaken, in terms of the EIA Regulations, prior to commencement of that activity.</p> <p>WSP undertook a legal review of the listed activities according to the proposed project description to conclude that the activities listed in in this section are considered applicable to the development: An S&EIR process must be followed. An EA is required and will be applied for with the DFFE.</p>
Listing Notice 1: GNR 983	<p>Activity 12</p> <p>The development of- infrastructure or structures with a physical footprint of 100 square metres or more, where such development occurs within a watercourse.</p> <p>Description:</p> <p>The pipelines that cross watercourses may result in more than 100 m² of infrastructure being constructed within a watercourse</p>
Listing Notice 1: GNR 983	<p>Activity 14</p> <p>Development of facilities for the storage of dangerous goods (>80 m³).</p>

Legislation	Description of Legislation and applicability
	Description: There may be need for more than 80m ³ of chemical storage at this facility for use in water treatment and cooling systems.
Listing Notice 1: GNR 983	Activity 19 The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse. Description: The Secunda GtP facility and the LNG pipeline will require the excavation, infilling or removal of soil exceeding 10m ³ from delineated watercourses on site. The values associated with the Final Layout will be confirmed during the EIA Phase.
Listing Notice 2: GNR 984	Activity 2 The development and related operation of facilities or infrastructure for the generation of electricity from a non-renewable resource where the electricity output is 20 megawatts or more. Description: The proposed energy generation technology (i.e. GtP) will generate more than 20MW of electricity output from a non-renewable resource
Listing Notice 2: GNR 984	Activity 6(i)(ii)(iii)(iv) The development of facilities or infrastructure for any process or activity which requires a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent, excluding: (i) activities which are identified and included in Listing Notice 1 of 2014; It is understood that the GtP Facility will require an Air Emissions License (AEL) in terms of Sub-category 1.4. (ii) activities which are included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; (iii) the development of facilities or infrastructure for the treatment of effluent, polluted water, wastewater or sewage where such facilities have a daily throughput capacity of 2 000 cubic metres or less; or (iv) where the development is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will not exceed 50 cubic metres per day. Description: The GtP Facility will require an Air Emissions License (AEL) in terms of Sub-category 1.4. Sasol's existing AEL will need to be amended to accommodate the proposed project..

Legislation	Description of Legislation and applicability
<p>Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes (GNR 320, 20 March 2020 and GNR 1150, 30 October 2020)</p>	<p>The protocols provide the criteria for specialist assessment and minimum report content requirements for impacts for various environmental themes for activities requiring environmental authorisation.</p> <p>The protocols replace the requirements of Appendix 6 of the EIA Regulations, 2014, as amended. The assessment and reporting requirements of the protocols are associated with a level of environmental sensitivity identified by the national web based environmental screening tool (screening tool). The Screening Report was generated on 31/03/2026 for the project (Appendix D).</p> <p>The following environmental themes were applicable to the Secunda GtP Facility:</p> <ul style="list-style-type: none"> • Agricultural Theme • Landscape/Visual • Archaeological and Cultural heritage • Palaeontological • Terrestrial Biodiversity • Aquatic Biodiversity • Hydrology • Noise • Traffic • Geotechnical assessment • Climate change • Health • Socio-Economic • Ambient air quality • Air quality • Plant Species • Animal Species
<p>National Environmental Management: Waste Act (59 of 2008) (NEM:WA)</p>	<p>This Act provides for regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation. The Act also provides for the licensing and control of waste management activities through GNR. 921 (2013): List of Waste Management Activities that Have, or are Likely to Have, a Detrimental Effect on the Environment.</p> <p>The proposed project does not constitute a Listed Activity requiring a Waste Management Licence (WML) as defined in GNR 921.</p> <p>The Environmental Management Programme (EMPr) that will accompany the EIA Report, will include reasonable measures for the prevention of pollution and good international industry practice (GIIP).</p>
<p>National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)</p>	<p>The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) was promulgated in June 2004 within the framework of NEMA to provide for the management and conservation of national biodiversity. The NEMBA's primary aims are for the protection of species and ecosystems that warrant national protection, the sustainable use of indigenous biological resources, the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources. In addition, the NEMBA provides for the establishment and functions of a South African National Biodiversity Institute (SANBI).</p>

Legislation	Description of Legislation and applicability
	<p>SANBI was established by the NEMBA with the primary purpose of reporting on the status of the country's biodiversity and conservation status of all listed threatened or protected species and ecosystems.</p> <p>The biodiversity assessment identifies Critical Biodiversity Areas (CBAs) which represent biodiversity priority areas which should be maintained in a natural to near natural state. The CBA maps indicate the most efficient selection and classification of land portions requiring safeguarding in order to meet national biodiversity objectives.</p> <p>Based on the preliminary desktop assessment and the Scoping terrestrial biodiversity report, the project area does not fall under any CBAs. The project area is heavily modified.</p> <p>According to the description for the Mpumalanga Biodiversity Sector Plan (MBSP) Terrestrial Assessment categories, CBAs are areas that are required to meet biodiversity targets (for biodiversity pattern and ecological process features). The management approach is that they should remain in a natural state. CBAs are areas of high biodiversity value which are usually at risk of being lost and usually identified as important in meeting biodiversity targets, except for Critically Endangered Ecosystems or Critical Linkages. CBAs in the Province can be divided into two sub-categories:</p> <ul style="list-style-type: none"> • Irreplaceable (parts of the site are within this sub-category), and • Optimal (northern parts of the site are within this sub-category). <p>Supplementary baseline terrestrial ecology studies will be undertaken during the EIA phase to inform the assessment of impacts and will include surveys of the project footprint to determine the presence of flora and fauna species of concern (SoC).</p> <p>The Conservation of Agricultural Resources Act (No. 43 of 1983) (CARA) Regulations with regards to alien and invasive species have been superseded by the National Environmental Management: Biodiversity Act, 2004 (Act no. 10 of 2004) – Alien and Invasive Species (AIS) Regulations which became law on 1 October 2014. Specific management measures for the control of alien and invasive plants will be included in the EMP.</p>
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)	<p>The overarching piece of legislation that governs air quality management in South Africa in the National Environmental Management Air Quality Act, 39 of 2004 (NEM:AQA). The NEM:AQA was first assented to on 19 February 2005 and commenced on 11 September 2005 save for sections specifically excluded. The NEM:AQA is administered and enforced by the DEFF, Metropolitan, District and Local authorities.</p> <p>Listed activities and associated minimum emission standards (MES) were published in Government Notice 248 of 2010, Government Gazette 33064 in-line with Section 21 of NEMAQA. An amended list of activities was published in Government Notice 893 of 2013, Government Gazette 37054, in Government Notice 551 of 2015 Government Gazette 38863 and further in Government Notice 1207 of 2018, Government Gazette 42013.</p> <p>The Secunda GtP Facility triggers Subcategory 1.4: Gas Combustion Installations of the National Environmental Management: Air Quality Act (NEMAQA) Section 21 Listed Activities.</p>
Gas Act ,2001 (Act No. 48 of 2001)	The Gas Act, 2001 provides the legislative framework for the regulation of the gas industry in South Africa, including the transmission, distribution, storage, liquefaction,

Legislation	Description of Legislation and applicability
	<p>regasification, and trading of gas. The Act is administered by the National Energy Regulator of South Africa (NERSA) and aims to promote the orderly development of the gas industry, ensure safe and efficient gas operations, and facilitate investment in gas infrastructure.</p> <p>The proposed GtP Facility will utilise natural gas in the form of LNG and/or MRG for electricity generation. To the extent that the proposed development includes gas-related infrastructure such as gas storage, handling, regasification facilities, transmission pipelines, or the trading of gas, the Gas Act is applicable.</p> <p>Any gas infrastructure associated with the proposed project may therefore be subject to licensing requirements in terms of the Gas Act, including, where applicable, Gas Transmission, Distribution, Storage, or Trading Licences issued by NERSA. Electricity generation activities associated with the facility will be regulated separately under the Electricity Regulation Act, 2006 (Act No. 4 of 2006).</p>
<p>National Biodiversity Offset Guideline</p> <p>(Issued Under Section 24j Of The National Environmental Management Act)</p> <p>(First Edition (October 2021))</p>	<p>The purpose of this guideline is to indicate when biodiversity offsets are likely to be required as mitigation by any competent authority (CA), to lay down basic principles for biodiversity offsetting and to guide offset practice in the environmental authorisation (EA) application context.</p> <p>This guideline is therefore applicable to applications for EA in terms of section 24 of NEMA. However, it can also be used to inform other administrative processes that may involve biodiversity offsetting, including applications for EA in terms of section 24G of NEMA, emergency directives contemplated in section 30A of NEMA, applications for licences under the National Water Act, 1998, the National Forests Act, 1998 and the National Environmental Management: Waste Act, 2008, applications for development rights in terms of the Spatial Planning and Land Use Management Act, 2013 and requests for the de-proclamation, or the withdrawal of declarations, of protected areas in terms of provincial legislation or NEMPAA.</p> <p>Biodiversity is fundamental to the health and well-being of people, as well as economic activity and socio-economic upliftment. The National Biodiversity Assessment (2018) (NBA 2018) states that South Africa's biodiversity assets and ecological infrastructure contribute significantly towards meeting national development priorities.</p> <p>Biodiversity offsetting, if done correctly, can advance the environmental right in the Constitution of the Republic of South Africa, 1996 (Constitution). Section 24 of the Constitution provides that everyone has the right to, amongst other things, have the environment protected for the benefit of present and future generations through reasonable legislative and other measures that, amongst other things, promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. Biodiversity offsetting is one of the ways in which South Africa's protected and conservation areas can be expanded, thereby promoting conservation. It may well also help to secure ecologically sustainable development as it mitigates the adverse impact of economic and social development on biodiversity, which, in turn, underpins such development.</p> <p>The biodiversity offsetting process, which only applies when a biodiversity offset is required involves the following steps:</p> <ul style="list-style-type: none"> • Identifying the need for a biodiversity offset. • Determining the requirements of a biodiversity offset and compilation of a Biodiversity Offset Report.

Legislation	Description of Legislation and applicability
	<ul style="list-style-type: none"> • Selecting a biodiversity offset site. • Securing the biodiversity offset site. • Preparing a Biodiversity Offset Management Plan. • Preparing biodiversity offset conditions for an EA. • Concluding a Biodiversity Offset Implementation Agreement. <p>A biodiversity offset strategy is not required due to the heavily modified nature of the project area.</p>
National Environmental Management Protected Areas Act (No. 57 of 2003)	<p>The purpose of the National Environmental Management Protected Areas Act (No. 57 of 2003) (NEMPAA) is to, inter alia, provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. To this end, it provides for the declaration and management of various types of protected areas.</p> <p>Section 50(5) of NEMPAA states that "no development, construction or farming may be permitted in a nature reserve or world heritage site without the prior written approval of the management authority." There are no protected areas within the study area.</p> <p>According to the National Protected Area Expansion Strategy (NPAES), there are no areas within the study area that have been identified as priority areas for inclusion in future protected areas. The study area is therefore outside the NPAES focus area.</p>
The National Water Act (No. 36 of 1998)	<p>The National Water Act, 1998 (Act No. 36 of 1998) (NWA) provides the framework to protect water resources against over exploitation and to ensure that there is water for social and economic development, human needs and to meet the needs of the aquatic environment.</p> <p>The Act defines water source to include watercourses, surface water, estuary or aquifer. A watercourse is defined in the Act as a river or spring, a natural channel in which water flows regularly or intermittently, a wetland, lake or dam into which or from which water flows, and any collection of water that the Minister may declare a watercourse.</p> <p>Section 21 of the Act outlines a number of categories that require a water user to apply for a Water Use License (WUL) and Section 22 requires water users to apply for a General Authorisation (GA) with the Department of Water and Sanitation (DWS) if they are under certain thresholds or meet certain criteria. The list of water uses applicable to the proposed Project include:</p> <ul style="list-style-type: none"> • Section 21 (c): Impeding or diverting the flow of water within a watercourse. • Section 21 (i): Altering the bed, banks, course, or characteristics of a watercourse. <p>The DWS will make the final decision on water uses that are applicable to the project through a pre-application meeting after which a Water Use Authorisation Application (WUA) as determined by the risk assessment will be undertaken in compliance with procedural regulations published by the DWS within General Notice 267 (GN267). These regulations specify required information per water use and the reporting structure of required supporting technical information.</p>
The National Heritage Resources Act (No. 25 of 1999)	<p>The National Heritage Resource Act (Act No. 25 of 1999) (NHRA) serves to protect national and provincial heritage resources across South Africa. The NHRA provides for the protection of all archaeological and palaeontological sites, the conservation and care of cemeteries and graves by the South African Heritage Resources Agency (SAHRA), and lists activities that require any person who intends to undertake to</p>

Legislation	Description of Legislation and applicability
	<p>notify the responsible heritage resources agency and furnish details regarding the location, nature, and extent of the proposed development.</p> <p>Part 2 of the NHRA details specific activities that require a Heritage Impact Assessment (HIA) that will need to be approved by SAHRA. Parts of Section 35, 36 and 38 apply to the proposed project, principally:</p> <p><i>Section 35 (4) - No person may, without a permit issued by the responsible heritage resources authority-</i></p> <p><i>destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;</i></p> <p><i>destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite.</i></p> <p><i>Section 38 (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-</i></p> <p><i>any development or other activity which will change the character of a site— (i) exceeding 5 000 m² in extent, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.</i></p> <p>In terms of Section 38(8), approval from the heritage authority is not required if an evaluation of the impact of such development on heritage resources is required in terms of any other legislation (such as NEMA), provided that the consenting authority ensures that the evaluation of impacts fulfils the requirements of the relevant heritage resources authority in terms of Section 38(3) and any comments and recommendations of the relevant resources authority with regard to such development have been taken into account prior to the granting of the consent. However, should heritage resources of significance be affected by the proposed Secunda GtP facility, a permit is required to be obtained prior to disturbing or destroying such resources as per the requirements of Section 48 of the NHRA, and the SAHRA Permit Regulations (GN R668).</p> <p>An Archaeological and Cultural Heritage Scoping Report (Appendix G.13) and a Palaeontological Scoping Report were undertaken by suitably qualified specialists. The studies concluded that the project area has been extensively transformed and disturbed by existing activities associated with the Sasol Secunda Complex. No significant archaeological, cultural heritage or palaeontological resources were identified within the study area, and the likelihood of encountering fossil material is considered low. Consequently, no further archaeological, cultural heritage or palaeontological impact assessments are required.</p> <p>The proposed project will be loaded onto the SAHRIS portal for comment by the provincial Heritage Resource Agency.</p>
Mineral and Petroleum Resources Development Act (No. 28 of 2002)	<p>The aim of the Mineral and Petroleum Resources Development Act (No. 28 of 2002) (MPRDA) is to make provision for equitable access to and sustainable development of the nation's mineral and petroleum resources.</p> <p>Section 53(1) of the MPRDA provides that any person who intends to use the surface of any land in any way that may be contrary to any object of the MPRDA, or which is likely to impede any such object, must apply to the Minister of Mineral Resources (the Minister) for approval. Section 53 of the MPRDA provides a mechanism for ensuring that, inter alia, the mining of mineral resources is not detrimentally affected through</p>

Legislation	Description of Legislation and applicability
	<p>the use of the surface of land and which may, for example, result in the sterilisation of a mineral resource.</p> <p>The Amendment Regulations (GNR 420 of 27 March 2020) introduced a template for section 53 applications (Form Z) and the specific information that applicants will need to provide as part of a section 53 application.</p>
<p>Noise Control Regulations in terms of the Environmental Conservation, 1989 (Act 73 of 1989)</p>	<p>In South Africa, environmental noise control has been in place for three decades, beginning in the 1980s with codes of practice issued by the South African National Standards (formerly the South African Bureau of Standards, SABS) to address noise pollution in various sectors of the country. Under the previous generation of environmental legislation, specifically the Environmental Conservation Act 73 of 1989 (ECA), provisions were made to control noise from a National level in the form of the Noise Control Regulations (GNR 154 of January 1992). In later years, the ECA was replaced by the National Environmental Management Act 107 of 1998 (NEMA) as amended. The National Environmental Management: Air Quality Act 39 of 2004 (NEMAQA) was published in line with NEMA and contains noise control provisions under Section 34:</p> <p>(1) The minister may prescribe essential national standards –</p> <p>(a) for the control of noise, either in general or by specific machinery or activities or in specified places or areas; or</p> <p>(b) for determining –</p> <p>(i) a definition of noise; and</p> <p>(ii) the maximum levels of noise.</p> <p>(2) When controlling noise, the provincial and local spheres of government are bound by any prescribed national standards.</p> <p>Under NEMAQA, the Noise Control Regulations were updated and are to be applied to all provinces in South Africa. The Noise Control Regulations give all the responsibilities of enforcement to the Local Provincial Authority, where location specific by-laws can be created and applied to the locations with approval of Provincial Government. Where province-specific regulations have not been promulgated, acoustic impact assessments must follow the Noise Control Regulations.</p> <p>Furthermore, NEMAQA prescribes that the Minister must publish maximum allowable noise levels for different districts and national noise standards. These have not yet been accomplished and as a result all monitoring and assessments are done in accordance with the South African National Standards (SANS) 10103:2008 and 10328:2008.</p>
<p>Conservation of Agricultural Resources Act (No. 43 of 1983)</p>	<p>The Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA) provides for the implementation of control measures for soil conservation works as well as alien and invasive plant species in and outside of urban areas.</p> <p>In terms of the amendments to the regulations under the CARA, landowners are legally responsible for the control of alien species on their properties. Various Acts administered by the DFFE and the DWS, as well as other laws (including local by-laws), spell out the fines, terms of imprisonment and other penalties for contravening the law. Although no fines have yet been placed against landowners who do not</p>

Legislation	Description of Legislation and applicability
	<p>remove invasive species, the authorities may clear their land of invasive alien plants and other alien species entirely at the landowners' cost and risk.</p> <p>The CARA Regulations with regards to alien and invasive species have been superseded by NEMBA Alien and Invasive Species (AIS) Regulations which became law on 1 October 2014.</p>
Civil Aviation Act (No. 13 of 2009)	<p>Civil aviation in South Africa is governed by the Civil Aviation Act (Act 13 of 2009). This Act provides for the establishment of a stand-alone authority mandated with controlling, promoting, regulating, supporting, developing, enforcing and continuously improving levels of safety and security throughout the civil aviation industry. This mandate is fulfilled by South African Civil Aviation Authority (SACAA) as an agency of the Department of Transport (DoT). SACAA achieves the objectives set out in the Act by complying with the Standards and Recommended Practices (SARPs) of the International Civil Aviation Organisation (ICAO), while considering the local context when issuing the South African Civil Aviation Regulations (SA CARs).</p> <p>As of the 1st of May 2021, Air Traffic and Navigation Services (ATNS) has been appointed as the new Obstacle application Service Provider for Windfarms and later Solar Plants. Their responsibility would pertain to the assessments, maintenance, and all other related matters in respect to Windfarms and in due time Power Plant assessments.</p> <p>The DFFE Screening Tool Report identified Civil Aviation as having High sensitivity for the proposed GtP Facility, as portions of the footprint being located within 8km of other civil aviation aerodrome. The project area also falls under a dangerous and restricted airspace as demarcated.</p> <p>Air Traffic Navigation Services (ATNS) and the Civil Aviation Authority (CAA) will be included on the project stakeholder database. They will be informed of the proposed Project, and comment will be sought from these authorities as applicable.</p>
Occupational Health and Safety Act (No. 85 of 1993)	<p>The National Occupational Health and Safety Act (No. 85 of 1993) (OHSA) and the relevant regulations under the Act are applicable to the proposed project. This includes the Construction Regulations promulgated in 2014 under Section 43 of the Act. Adherence to South Africa's OHSA and its relevant Regulations is essential.</p>
National Energy Act (No. 34 of 2008)	<p>The National Energy Act aims to ensure that diverse energy resources are available, in sustainable quantities, and at affordable prices, to the South African economy in support of economic growth and poverty alleviation, taking into account environmental management requirements and interactions amongst economic sectors.</p> <p>The main objectives of the Act are to:</p> <ul style="list-style-type: none"> • Ensure uninterrupted supply of energy to the Republic; • Promote diversity of supply of energy and its sources; • Facilitate effective management of energy demand and its conservation; • Promote energy research; • Promote appropriate standards and specifications for the equipment, systems and processes used for producing, supplying and consuming energy; • Ensure collection of data and information relating to energy supply, transportation and demand; • Provide for optimal supply, transformation, transportation, storage and demand of energy that are planned, organised and implemented in accordance with a

Legislation	Description of Legislation and applicability
	<p>balanced consideration of security of supply, economics, consumer protection and a sustainable development;</p> <ul style="list-style-type: none"> • Provide for certain safety, health and environment matters that pertain to energy; • Facilitate energy access for improvement of the quality of life of the people of Republic; • Commercialise energy-related technologies; • Ensure effective planning for energy supply, transportation, and consumption; and • Contribute to sustainable development of South Africa's economy. <p>In terms of the act, the Minister of Energy is mandated to develop and, on an annual basis, review and publish the Integrated Energy Plan (IEP) in the Government Gazette. The IEP analyses current energy consumption trends within different sectors of the economy (i.e. agriculture, commerce, industry, residential and transport) and uses this to project future energy requirements, based on different scenarios. The IEP and the Integrated Resource Plan are intended to be updated periodically to remain relevant. The framework is intended to create a balance between energy demand and resource availability so as to provide low-cost electricity for social and economic development, while taking into account health, safety and environmental parameters.</p>
Electricity Regulation Act (No. 4 of 2006)	<p>The Electricity Regulation Act (No. 4 of 2006) (ERA) aims to:</p> <ul style="list-style-type: none"> • Achieve the efficient, effective, sustainable and orderly development and operation of electricity supply infrastructure in South Africa; • Ensure that the interests and needs of present and future electricity customers and end users are safeguarded and met, having regard to the governance, efficiency, effectiveness and long-term sustainability of the electricity supply industry within the broader context of economic energy regulation in the Republic; • Facilitate investment in the electricity supply industry; • Facilitate universal access to electricity; • Promote the use of diverse energy sources and energy efficiency; • Promote competitiveness and customer and end user choice; and • Facilitate a fair balance between the interests of customers and end users, licensees, investors in the electricity supply industry and the public. <p>The Act establishes a National Energy Regulator as the custodian and enforcer of the National Electricity Regulatory Framework. The Act also provides for licenses and registration as the manner in which generation, transmission, distribution, trading and the import and export of electricity are regulated.</p>

4.2 POLICIES AND PLANS

Table 4-2 summarised key policies and plans as an outline of the governance framework for the project.

Table 4-2: Applicable Regional Policies and Plans

Applicable Policy	Description of Policy
National Development Plan	<p>The National Development Plan aims to eliminate poverty and reduce inequality by 2030. The NDP identifies several enabling milestones. Of relevance to the proposed development the NDP refers to the need to produce sufficient energy to support industry at competitive prices and ensure access for poor households, while reducing carbon emissions per unit of power by about one-third. In this regard the infrastructure is not just essential for faster economic growth and higher employment. It also promotes inclusive growth, providing citizens with the means to improve their own lives and boost their incomes. Infrastructure is essential to development.</p> <p>Chapter 3, Economy, and Employment, identifies some of the structural challenges specific to South Africa, including an energy constraint that will act as a cap on growth and on options for industrialisation. The NDP notes that from an environmental perspective South Africa faces several related challenges. The reduction of greenhouse gas emissions and shift to a green low-carbon economy, is one of these challenges.</p> <p>In terms of implementation the NDP identifies three phases. The first two are of specific relevance to the proposed project. The first phase (2012–2017) notes that ensuring the supply of energy and water is reliable and sufficient for a growing economy. The second phase (2018–2023) involves building on the first phase to lay the foundations for more intensive improvements in productivity. The provision of affordable and reliable energy is a key requirement for this to take place.</p> <p>Chapter 4, Economic infrastructure, notes that economic infrastructure provides the foundation for social and economic development. In this regard South Africa must invest in a strong network of economic infrastructure designed to support the country's medium- and long-term economic and social objectives. The plan envisages that, by 2030, South Africa will have an energy sector that promotes:</p> <p>Economic growth and development through adequate investment in energy infrastructure. The sector should provide reliable and efficient energy service at competitive rates, while supporting economic growth through job creation.</p> <p>Environmental sustainability through efforts to reduce pollution and mitigate the effects of climate change. More specifically, South Africa should have adequate supply security in electricity and in liquid fuels, such that economic activity, transport, and welfare are not disrupted.</p> <p>The plan sets out steps that aim to ensure that, in 20 years, South Africa's energy system looks very different to the current situation. In this regard coal will contribute proportionately less to primary-energy needs, while gas and renewable energy resources, will play a much larger role.</p>
Integrated Resource Plan 2010 – 2030	<p>The IRP is an electricity capacity plan which aims to provide an indication of the country's electricity demand, how this demand will be supplied and what it</p>

Applicable Policy	Description of Policy
	<p>will cost. On 6 May 2011, the then Department of Energy (DoE) released the Integrated Resource Plan 2010-2030 (IRP 2010) in respect of South Africa's forecast energy demand for the 20-year period from 2010 to 2030. The promulgated IRP 2010–2030 identified the preferred generation technology required to meet expected demand growth up to 2030. It incorporated government objectives such as affordable electricity, reduced greenhouse gas (GHG) emissions, reduced water consumption, diversified electricity generation sources, localisation and regional development.</p> <p>The IRP 2010–2030 has been superseded by the Integrated Resource Plan 2019, which currently serves as the prevailing national policy framework and makes specific provision for gas-to-power generation as a flexible and dispatchable source of electricity to support grid stability and complement renewable energy generation.</p>
New Growth Path	<p>Government released the New Economic Growth Path Framework on 23 November 2010. The aim of the framework is to enhance growth, employment creation and equity. The policy's principal target is to create five million jobs over the next 10 years and reflects government's commitment to prioritising employment creation in all economic policies. The framework identifies strategies that will enable South Africa to grow in a more equitable and inclusive manner while attaining South Africa's developmental agenda. Central to the New Growth Path is a massive investment in infrastructure as a critical driver of jobs across the economy. In this regard the framework identifies investments in five key areas namely: energy, transport, communication, water, and housing.</p>
National Infrastructure Plan	<p>The South African Government adopted a National Infrastructure Plan (NIP) in 2012. The NIP aims to transform the South African economic landscape while simultaneously creating significant numbers of new jobs and strengthening the delivery of basic services. It outlines the challenges and enablers which needs to be addressed in the building and developing of infrastructure. The Presidential Infrastructure Coordinating Commission (PICC) was established by the Cabinet to integrate and coordinate the long-term infrastructure build.</p> <p>The plan also supports the integration of African economies. In terms of the plan Government will invest R827 billion over the next three years to build new and upgrade existing infrastructure. The aim of the investments is to improve access by South Africans to healthcare facilities, schools, water, sanitation, housing and electrification. The plan also notes that investment in the construction of ports, roads, railway systems, electricity plants, hospitals, schools and dams will contribute to improved economic growth.</p>
Integrated Energy Plan	<p>The development of a National IEP was envisaged in the White Paper on the Energy Policy of the Republic of South Africa of 1998 and, in terms of the National Energy Act, 2008 (Act No. 34 of 2008), the Minister of Energy is mandated to develop and, on an annual basis, review and publish the IEP in the Government Gazette. The purpose of the IEP is to provide a roadmap of the future energy landscape for South Africa which guides future energy infrastructure investments and policy development.</p> <p>The IEP notes that South Africa needs to grow its energy supply to support economic expansion and in so doing, alleviate supply bottlenecks and supply-demand deficits. In addition, it is essential that all citizens are provided with</p>

Applicable Policy	Description of Policy
	<p>clean and modern forms of energy at an affordable price. As part of the Integrated Energy Planning process, eight key objectives are identified, namely:</p> <ul style="list-style-type: none"> • Objective 1: Ensure security of supply. • Objective 2: Minimise the cost of energy. • Objective 3: Promote the creation of jobs and localisation. • Objective 4: Minimise negative environmental impacts from the energy sector. • Objective 5: Promote the conservation of water. • Objective 6: Diversify supply sources and primary sources of energy. • Objective 7: Promote energy efficiency in the economy. • Objective 8: Increase access to modern energy. <p>The IEP provides an assessment of current energy consumption trends within different sectors of the economy (i.e., agriculture, commerce, industry, residential and transport) and uses this information to identify future energy requirements, based on different scenarios. The scenarios are informed by different assumptions on economic development and the structure of the economy and consider the impact of key policies such as environmental policies, energy efficiency policies, transport policies and industrial policies, amongst others.</p> <p>Based on this information the IEP then determines the optimal mix of energy sources and technologies to meet those energy needs in the most cost-effective manner for each of the scenarios. The associated environmental impacts, socio-economic benefits and macroeconomic impacts are also analysed. The IEP is therefore focused on determining the long-term energy pathway for South Africa, considering a multitude of factors which are embedded in the eight objectives.</p> <p>As part of the analysis four key scenarios were developed, namely the Base Case, Environmental Awareness, Resource Constrained and Green Shoots scenarios:</p> <ul style="list-style-type: none"> • The Base Case Scenario assumes that existing policies are implemented and will continue to shape the energy sector landscape going forward. It assumes moderate economic growth in the medium to long term. • The Environmental Awareness Scenario is characterised by more stringent emission limits and a more environmentally aware society, where a higher cost is placed on externalities caused by the supply of energy. • The Resource Constrained Scenario in which global energy commodity prices (i.e. coal, crude oil and natural gas) are high due to limited supply. • The Green Shoots Scenario describes an economy in which the targets for high economic growth and structural changes to the economy, as set out in the National Development Plan (NDP), are met. <p>The IEP notes that South Africa should continue to pursue a diversified energy mix which reduces reliance on a single or a few primary energy sources. In terms of existing electricity generation capacity, the IEP indicates that existing capacity starts to decline notably from 2025, with significant plant retirement occurring in 2031, 2041 and 2048. By 2050 only 20% of the current electricity generation capacity remains. As a result, large investments are required in the electricity sector in order to maintain an adequate supply in support of economic growth.</p>

Applicable Policy	Description of Policy
	<p>By 2020, various import options become available, and some new coal capacity is added along with new wind, solar and gas capacity. The mix of generation capacity technologies by 2050 is considerably more diverse than the current energy mix, across all scenarios. The main differentiating factors between the scenarios are the level of demand, constraints on emission limits and the carbon dioxide externality costs. In all scenarios the energy mix for electricity generation becomes more diverse over the period to 2050, with coal reducing its share from about 85% in 2015 to 15–20% in 2050 (depending on the scenario). Solar, wind, nuclear, gas and electricity imports increase their share.</p> <p>An assessment of each scenario against the eight objectives with reference to renewable energy notes while all scenarios seek to ensure that costs are minimised within the constraints and parameters of each scenario, the Base Case Scenario presents the least cost followed by the Environmental Awareness, Resource Constrained and Green Shoots scenarios respectively when total energy system costs are considered. In terms of promoting job creation and localisation potential the Base Case Scenario presents the greatest job creation potential, followed by the Resource Constrained, Environmental Awareness and Green Shoots scenarios respectively. In all scenarios, approximately 85% of total jobs are localisable. For electricity generation, most jobs result from solar technologies followed by nuclear and wind, with natural gas and coal making a smaller contribution. The Environmental Awareness Scenario, due to its stringent emission constraints, shows the lowest level of total emissions over the planning horizon. This is followed by the Green Shoots, Resource Constrained and Base Case scenarios. These trends are similar when emissions are considered cumulatively and individually by type.</p> <p>The proposed project aligns with the Integrated Energy Plan's goal to seek alternative energy sources.</p>
National Protected Area Expansion Strategy, 2018	<p>The National Protected Area Expansion Strategy 2018 (NPAES) areas were identified through a systematic biodiversity planning process. They present the best opportunities for meeting the ecosystem-specific protected area targets set in the NPAES and were designed with strong emphasis on climate change resilience and requirements for protecting freshwater ecosystems. These areas should not be seen as future boundaries of protected areas, as in many cases only a portion of a particular focus area would be required to meet the protected area targets set in the NPAES. They are also not a replacement for fine scale planning which may identify a range of different priority sites based on local requirements, constraints and opportunities (NPAES, 2018).</p> <p>According to the NPAES (2018), large portions of habitat in the study area have been mapped as Priority Focus Areas for protected area expansion. Similarly, the delineations presented in the Mpumalanga Protected Area Expansion – 20 Year Plan indicate that large portions of the study area are designated as Priority 2 and Priority 3 areas for protected area expansion.</p> <p>The project area does not fall under the National Protected Area Expansion Strategy.</p>

Applicable Policy	Description of Policy
Highveld Priority Area (HPA)	<p>Sasol is located within the highveld area, which is associated with poor air quality and elevated concentrations of pollutants due to the region having a high concentration of industry, mining, power generation and other non-industrial sources (Held et al., 1996 and DEAT, 2006). For this reason, the Minister of Environmental Affairs declared the region a priority area, namely the Highveld Priority Area (HPA) in November 2007.</p> <p>Following the declaration, the first-generation Highveld Priority Area (HPA) Air Quality Management Plan (AQMP) was developed to provide a strategic framework for improving air quality within the area. The HPA AQMP was revised through the publication of the Second-Generation HPA AQMP in Government Gazette No. 52387 (Government Notice R.6040 of 26 March 2025) and was subsequently developed to build on the objectives and interventions of the initial plan and to further strengthen air quality management within the HPA.</p> <p>The primary motive of the HPA declaration and the HPA AQMP is to achieve and maintain compliance with the NAAQS across the HPA, using the constitutional principal of progressive realisation of air quality improvements (DEAT, 2007). The HPA AQMP thus allows for the alignment of air quality practices with legal and regulatory requirements to ensure air quality management planning is implemented effectively (DEAT, 2007). The HPA AQMP places increased emphasis on measurable emission reduction targets, cumulative impact assessment, and strengthened compliance requirements for mining and industrial operations within the HPA. As the proposed operations are located within the HPA, the Project is required to comply with the applicable air quality management objectives and emission reduction priorities of the HPA AQMP.</p>

4.3 PROVINCIAL AND MUNICIPAL LEGAL AND REGULATORY FRAMEWORK

Table 4-3 summarised key provincial and municipal plans as an outline of the governance framework for the project.

Table 4-3: Provincial and Municipal Plans

Applicable Plan	Description of Plan
Mpumalanga Biodiversity Sector Plan (MBSP)	<p>The MBSP is such spatial tool which serves to provide such information to end-users and guide decision making to ensure that the biodiversity objectives are achieved. The MBSP is based on an objective planning approach which considers national and provincial biodiversity targets while trying to avoid conflict with competing land uses. Both terrestrial and freshwater biodiversity priority areas are identified in the MBSP, either as CBAs or Ecological Support Areas (ESAs). These CBA and ESA areas must be considered and taken into account in processes that will result in a change in land use and will also form part of the geographic areas in which certain activities will require environmental authorisation in terms of the Environmental Impact Assessment Regulations Listing Notice 3 (Government</p>

Applicable Plan	Description of Plan
	<p>Notice R985 of 04 December 2014, as amended by Government Notice R324 of 07 April 2017), in terms of the National Environmental Management Act, 1998 (Act 107 of 1998).</p> <p>This MBSP Handbook presents the map products and explains how they were developed, and how and when they should be used. It describes the ecosystems and important biodiversity features of Mpumalanga and presents a set of land-use guidelines and other tools that can be used to effectively conserve Mpumalanga's biodiversity as part of living landscapes that combine multiple land-uses.</p> <p>The MBSP was formally adopted by the MEC (Member of Executive Council) for Agriculture, Rural Development, Land and Environmental Affairs in the Provincial Gazette No 2535 of 26 May 2023 (Provincial Gazette Notice 279 of 2023).</p>
<p>Gert Sibande District Municipality Integrated Development Plan (IDP) (2022/ 2027)</p>	<p>According to the Municipal Systems Act (Act 32 of 2000) (MSA), all municipalities have to undertake an IDP process. The IDP is a legislative requirement thus it has legal status and supersedes all other plans that guide development at local government level.</p> <p>The GSDM Final IDP (2022/2027) has identified the following development priorities:</p> <ul style="list-style-type: none"> • Municipal Transformation and Organisational Development • Basic Service Delivery and Infrastructure Development • Local Economic Development • Municipal Financial Viability and Management • Good Governance and Public Participation • Spatial Development Analysis and Rationale <p>The main goal and strategic objective of the Basic Service Delivery and Infrastructure Development priority is a reliable and sustainable service. One of the main strategic objectives for reaching the goal is the provision of basic services such as water and electricity to an approved minimum level of standards in a sustainable manner; as per the national guidelines.</p> <p>KPA 1 Municipal Transformation and Organisational Development</p> <ul style="list-style-type: none"> • Institutional capacity development • Mayoral excellence awards <p>KPA 2: Basic Service Delivery and Infrastructure Development infrastructure development to support effective and sustainable community services</p> <ul style="list-style-type: none"> • Energy • Water and Sanitation • Roads Maintenance • Infrastructure Special Programmes • Laboratory Services • Municipal Health Services • Customer services • Research and development services • Transversal Programmes • Municipal Safety and Security

Applicable Plan	Description of Plan
	<ul style="list-style-type: none"> • Library and information Services • Disaster Management Services • Waste Management Services • Environmental Management Services (EMS) • Sports, Culture and Recreation <p>KPA 3: Local Economic Development:</p> <ul style="list-style-type: none"> • Sector Development • Special Initiatives • Enterprise Development <p>KPA 4: Municipal Financial Viability and Management</p> <ul style="list-style-type: none"> • Financial Management • Asset Management • Supply Chain Management • Budget Management and Reporting • Municipal Support <p>KPA 5: Good Governance and Public Participation</p> <ul style="list-style-type: none"> • Internal audit • Risk management • Performance management • Information communication technology • Communications • Policy development • Public participation • Governance and administration <p>KPA 6: Spatial Development Analysis and Rationale</p> <ul style="list-style-type: none"> • Strengthening Forward Planning • Development Control and facilitation • Industrial Township Development • Intelligence gathering and Monitoring
Govan Mbeki Local Municipality Draft IDP (2026/2027)	<p>The below weaknesses were identified within the Municipal SWOT Analysis / component of the IDP and are recognised as governance and planning challenges that must be addressed through coordinated infrastructure investment and alignment with national and provincial strategies.</p> <ul style="list-style-type: none"> • Rural areas and some poor communities still have gravel roads (external Provincial factor) • Most roads not in good condition; potholes • Gravel Roads in urban areas • Inadequate storm water drainage in some areas • Frequent sewerage blockages • Ageing electricity infrastructure • Pressure on energy sources • Lack of available land for Integrated Human Settlements • Backyard dwellers / Housing shortage • Relatively far from major ports (Durban / Richards Bay / Maputo)

Applicable Plan	Description of Plan
	<ul style="list-style-type: none"> • Growing Informal Settlements • Sporadic Land Invasion • Too concentrated (not diversified) an economy dependent on two complimentary sector industries reliant on finite coal resources • Weak exploitation of the agricultural and agro-processing potential within the local space for SMME and cooperatives development • Low and declining skills base caused by declining matric pass rates and degree/university admission rates • Limited bulk infrastructure (water and Electricity) • Low and declining skills base caused by declining matric pass rates and degree/university admission rates <p>The identification of ageing electricity infrastructure and pressure exerted on energy sources within the GMLM highlights critical governance challenges related to energy security, infrastructure reliability, and service delivery. The development of the GtP facility will be an energy infrastructure intervention that can support the strengthening and modernisation of the local electricity supply system. By introducing additional, reliable, and dispatchable generation capacity, the GtP facility has the potential to alleviate pressure on existing energy sources and contribute to improved system resilience.</p>

4.4 OTHER GUIDELINES AND BEST PRACTICE RECOMMENDATIONS

4.4.1 GENERIC EMPR RELEVANT TO AN APPLICATION FOR THE DEVELOPMENT OR EXPANSION OF GAS TRANSMISSION PIPELINE INFRASTRUCTURE

NEMA requires that an EMPr be submitted where an EIA has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation. The content of an EMPr must either contain the information set out in Appendix 4 of the EIA Regulations, 2014, as amended, or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice, that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including, but not limited to, the applicant and the CA.

GN 834 of 31 July 2020 identified a generic EMPr relevant to applications for the development or expansion of Gas transmission infrastructure. Applications for Gas transmission infrastructure that triggers Activity 60 of Listing Notice 1 or Activity 7 of Listing Notice 2 and any other listed or specified activities must use the generic EMPr.

The proposed development is located within an area zoned for industrial use, therefore the Generic EMPr does not apply.

4.5 ADDITIONAL PERMITS AND AUTHORISATIONS

Table 4-4 outlines the additional permits and authorisations required for the proposed development, as well as the relevant Competent Authorities responsible.

Table 4-4 – Additional Permits and Authorisations required for the proposed development

Permits/Authorisation	Legislation	Relevant Authority	Status
Water Use Licence / General Authorisation	National Water Act (Act No. 36 of 1998)	Department of Water and Sanitation	Application process will run concurrently with the EIA Phase.
Notification Of Intent To Develop (NID) Section 38 (1) and Section 38 (8)	National Heritage Resource Act (Act No. 25 of 1999)	Mpumalanga Heritage Resources Authority	In Process
Atmospheric Emissions License	Air Quality Act (Act No. 39 of 2004)	Gert Sibande District Municipality	Amendment application process will resume after the EIA process.

5 DESCRIPTION OF BASELINE ENVIRONMENT

This section has been informed through desktop review from various sources. The known baseline environment is described here. As specialist's conduct their fieldwork and report in latter stages of the S&EIR Process, the baseline knowledge and understanding will be expanded upon to be more site specific.

PHYSICAL ENVIRONMENT

The physical environment is typical of high-altitude interior plateau systems, characterised by grassland-dominated landscapes, relatively subdued relief, and extensive anthropogenic modification associated with coal mining and industrial development.

The study area is within a landscape that has been extensively transformed by industrial, petrochemical, and mining-related activities. The immediate surroundings are dominated by heavily modified areas with several Sasol operations and mining operations further north.

5.1.1 CLIMATE AND METEOROLOGY

South Africa's climate is strongly influenced by two major oceanic currents: the warm south-flowing Mozambique - Agulhas Current along the east coast and the cold north-flowing Benguela Current along the west coast. These oceanic influences contribute to a climatic gradient across the country, where the eastern regions, including Mpumalanga, experience higher rainfall and warmer, more humid conditions compared to the drier western interior. Secunda, located in the Mpumalanga Province of South Africa, falls within the Highveld climatic zone, characterised by dry, cold winters and warm, wet summers. The climate is strongly influenced by large-scale subtropical weather systems, resulting in a clear seasonal pattern in temperature, rainfall, and atmospheric stability.

The Secunda area has a subtropical Highland climate characterised by dry winters and warm temperate summers. The area receives an average annual rainfall of about 817mm with the highest rainfall occurring in December. The hottest months are September to February with an average maximum temperature of 25°C. The coldest months are between June and July with an average minimum temperature of 3°C.¹

Gert Sibande LM falls under the subtropical climatic zone characterized by warm, rainy summers. Throughout the region, 95% of the rainfall is received during the summer six months, October to March, but the month of maximum precipitation is either January or February. The western portions of the municipality can receive between 600-800mm/year and the eastern portion can receive between 800-1000mm/year (Govan Mbeki LM IDP, 2026/2027). In summer, temperatures range from as high as 40 degrees Celsius during the day to 10 degrees Celsius in the evenings. Winters are milder and temperatures usually vary between 20 degrees Celsius during the day and 10

¹ Geotechnical SSR. WSP, 2026

degrees Celsius in the evenings. Frost occurs, but apart from light frost which may occur from May to August, the period during which ordinary frosts may be expected is less than 30 days per year.

Figure 5-1 presents the temperature, rainfall and humidity using monitored data from the Secunda station for the period January 2023 to December 2025.

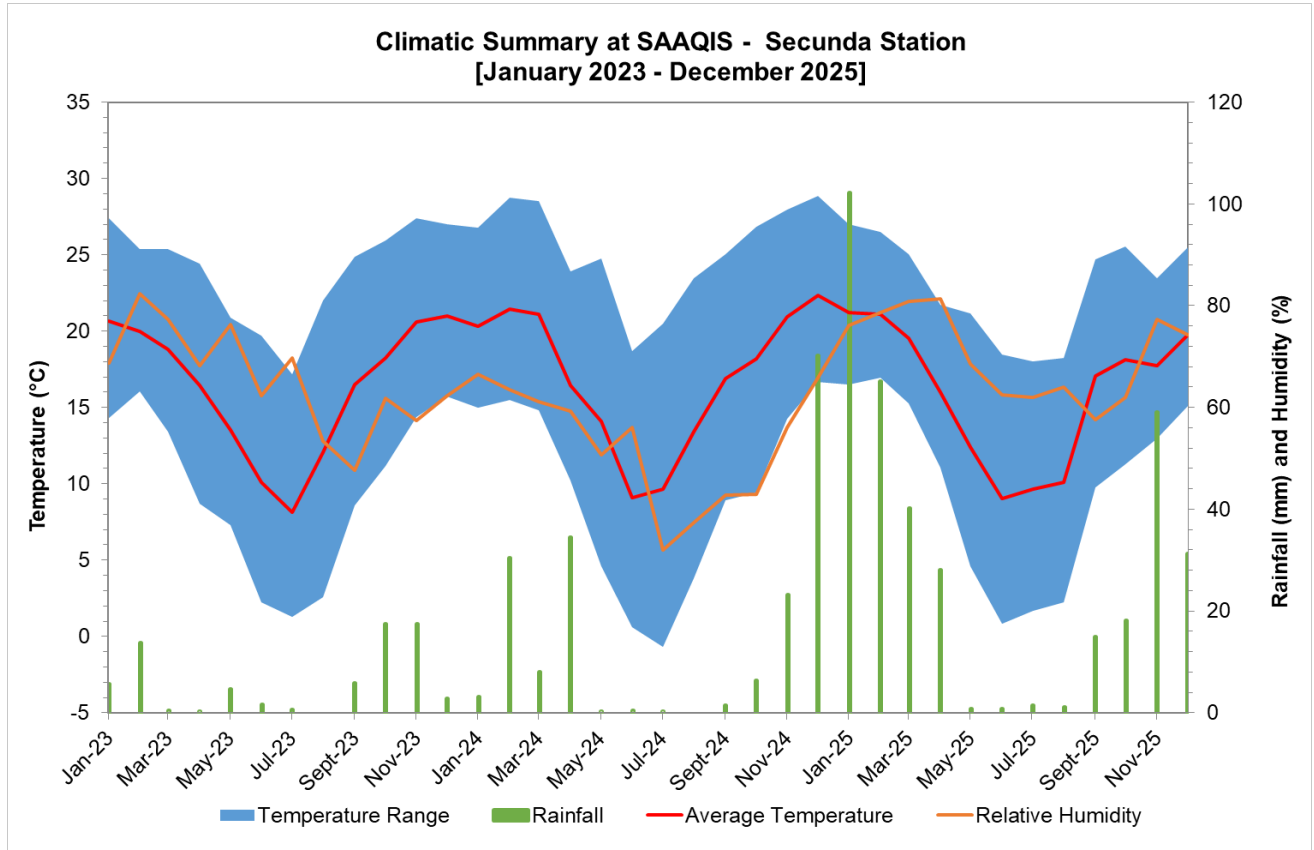


Figure 5-1 - Climatic conditions for the Secunda area (2023-2025)

Temperature and rainfall

With reference to **Figure 5-1**, an average daily temperature of 16.4 °C was measured. The lowest daily average temperature was 8.1 °C and the highest daily average temperature was 22.4 °C. The site receives most of its rainfall during summer. Total annual rainfall recorded was 70.1 mm (2023), 177.2 mm (2024) and 362. mm (2025). Relative humidity had an average of 65.6% (2023), 52.9% (2024) and 70.4% (2025)².

² Air Quality baseline report .WSP,2026

Wind

The following can be observed from the wind roses data as depicted in **Figure 5-2**:

- Winds during the monitoring period were predominantly from the northeast, north-northeast and east-northeast. Calm conditions occurred 5.5% of the time.
- Diurnal wind patterns indicate a notable shift from the morning to the afternoon.
 - Early morning (00:00 - 06:00): Winds were primarily from the northeast, north-northeast and east-northeast.
 - Morning (06:00 - 12:00): Winds from the north-northeast and northeast remained dominant with an increase in winds from the north.
 - Afternoon (12:00 - 18:00): The predominant winds from the morning were much reduced while the winds from the west-northwest, southwest and west became dominant.
 - Night (18:00 - 24:00): The afternoon winds reduced during the night, with winds from the east-northeast, east and northeast becoming the dominant winds.
- Seasonal variations are also evident.
 - Summer (December to February): Winds were primarily from the east, east-northeast and northeast.
 - Autumn (March to May): Winds from the east-northeast and northeast remained dominant, with an increase in winds from the north-northeast and reduced winds from the east.
 - Winter (June to August): Winds from the northeast and north-northeast remained dominant, however, winds from the west, west-northwest and southwest also became dominant.

Spring (September to November): Winds from the west, west-northwest and southwest reduced significantly, with winds from the north-northeast, north and northeast becoming dominant²

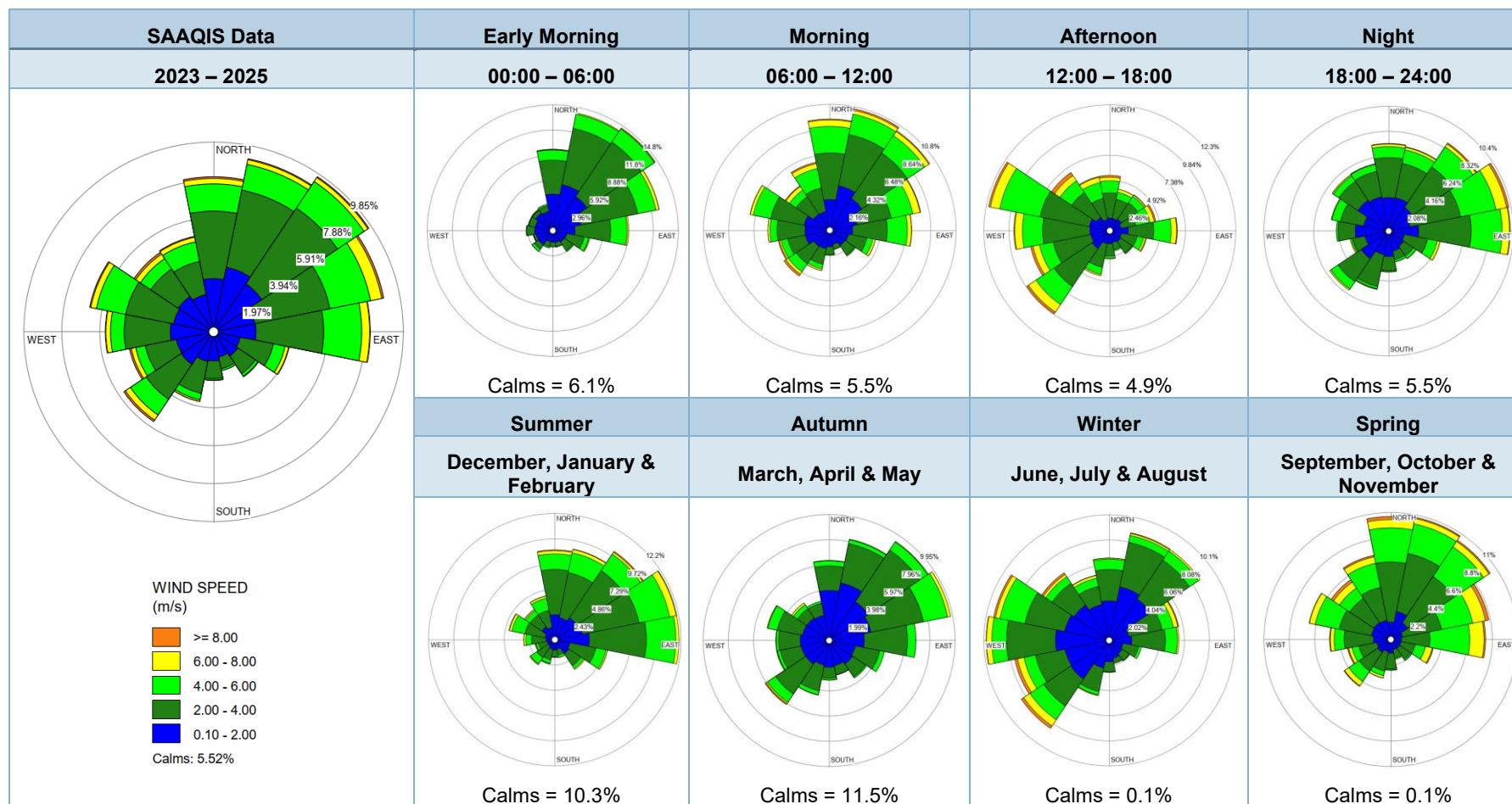


Figure 5-2 - Wind roses from the Bosjesspruit monitoring station for the period 2023 to 2025

5.1.2 TOPOGRAPHY

The Secunda area is situated on the central Highveld plateau of Mpumalanga at an elevation of approximately 1,600 m above mean sea level. The topography is characterised by gently undulating plains with low relief, typically varying between approximately 1,540 m and 1,690 m AMSL. The landscape exhibits broad interfluvies and shallow, dendritic drainage systems with limited incision, reflecting long-term erosion of the interior plateau. Slopes are generally low-gradient, and no significant mountainous or escarpment features occur in the immediate area. The topography is typical of Highveld grassland terrain developed over coal-bearing sedimentary basins.

The regional topography in Secunda consists of flat plains and local shallow drainage valleys. The SIC's topography can be classed as gently undulating with a very low gradient dropping down to the east of Sasol Operations. The site is gently flat with an elevation of 1500 masl. The elevation profile of the proposed site extracted from Google Earth is illustrated in **Figure 5-3**.



Figure 5-3 - Elevation profile of the Secunda GtP Facility (Google Earth)

The topography of the study area is representative of much of the general region and is characterised by rolling plains and low hills typical of much of the Mpumalanga Highveld. Most landforms are not visually significant when viewed over longer distances, and views are often dominated by manmade elements where these are present, especially within the study area itself which contains numerous expansive ash and discard dumps.

The proposed site for the GtP Project itself is small and relatively flat, with no significant distinguishing topographical features, aside from the relatively narrow, shallow drainage channel that transects the western half of the site³.

The proposed site lies at an elevation that ranges between approximately 1589m and 1598m. The highest point is in the north of the site and the lowest point in the south.¹

5.1.3 GEOLOGY

Geological context

Secunda lies in the Mpumalanga coalfields of the Karoo Supergroup sedimentary basin. The region's landscape results from tectonic uplift followed by extensive weathering and erosion.

Surface geology

This geology creates mostly flat or gently rolling terrain with minimal structural influence. Coal mining and infrastructure have noticeably altered the surface locally, though exact impacts are not quantified⁴.

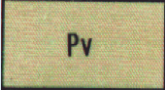
According to the published 1: 250 000 geological map, Sheet 2628 East Rand, the study area is underlain by rocks of the Vryheid Formation (Pv), Eccca Group of the Karoo Supergroup. This Vryheid Formation comprises sandstone, shale and coal beds. The Vryheid Formation has been extensively intruded by Jurassic age dolerite (Jd). The dolerites occur both as sills and linear dyke structures that may extend over tens of kilometres. It can be seen that much of the project area is directly underlain by Vryheid Formation.

An excerpt of the published geological map showing the site is presented on **Figure 5-4** and the lithostratigraphy is indicated in **Table 5-1**.

³ Visual Impact Assessment_Baseline Report_WSP, 2026

⁴ The Geology of Mpumalanga. Sociably.com

Table 5-1 – Lithostratigraphy of the Area

Supergroup	Group	Formation	Description	Map Symbol
Quaternary Deposits			Alluvium	
Intrusive			Dolerite	
Karoo	Ecca	Vryheid	Sandstone, shale, coal beds	

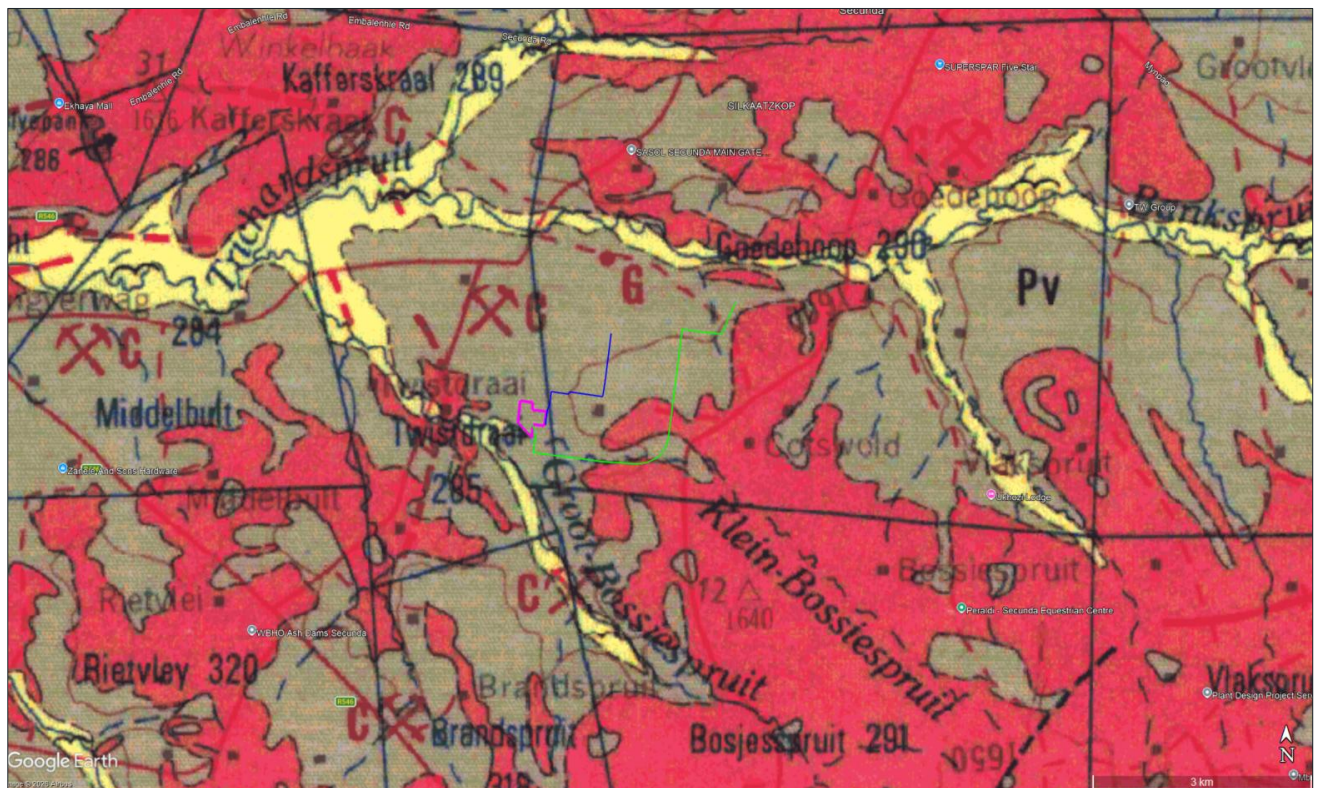


Figure 5-4 - Regional Geology of the Area

In terms of geotechnical risk, there are no known geohazards in this area.¹

5.1.4 SOILS AND AGRICULTURAL POTENTIAL

Soils in the Secunda area are generally associated with the gently undulating Highveld landscape of the Mpumalanga coalfields. The regional soil profile is influenced by the underlying Karoo Supergroup geology, which typically includes sedimentary rocks such as shale, sandstone, mudstone and coal-bearing strata, with localised dolerite intrusions (Council for Geoscience, 1998; Johnson et al., 2006). Weathering of these parent materials has produced soils that commonly

range from shallow to moderately deep, with variable clay content and drainage characteristics (Land Type Survey Staff, 1972–2006).

In the broader Secunda region, soils are often characterised by loamy to clayey textures, moderate to high water-holding capacity, and a tendency towards seasonal wetness in low-lying areas, drainage lines and depressions⁵. Duplex or structured clay subsoils may occur in places, which can restrict infiltration and promote surface runoff, particularly during high-intensity rainfall events. Poorly drained or seasonally saturated soils may also be associated with wetlands, pans and watercourses, which are common features of the Highveld landscape⁶.

Within and around the Sasol Secunda industrial complex, natural soil profiles are likely to have been substantially modified by historical industrial development, earthworks, compaction, gravel surfacing, filling and infrastructure installation. In such disturbed or brownfield areas, the original soil structure, permeability and biological function are expected to be reduced, and agricultural potential is likely to be limited.⁵

From an environmental management perspective, the main soil-related sensitivities in this area may include erosion risk where vegetation cover is removed, compaction from construction vehicles and laydown areas, contamination risk from hydrocarbons or chemicals, and disturbance of hydromorphic soils associated with wetlands or drainage features.

The site does not fall within any Protected Agricultural Areas (PAAs) or designated CBAs. While certain soil characteristics such as drainage limitations, may impose constraints on agricultural production, the site's agricultural potential is primarily limited by non-soil-related factors. The site is situated within a fully developed industrial area, which effectively precludes any current or future agricultural use. Consequently, the site is assessed as having no agricultural potential and is not suitable for viable crop production⁷.

5.1.5 LAND COVER AND LAND USE

The primary land uses in the study area are agriculture, which includes dryland and irrigated cropping as well as grazing, as well as power generation and transmission, petrochemical industries, coal mining, and urban development. Other land uses in the area also include a casino and various hospitality venues, airfield, sports facilities and public recreation areas.

The site is located along the southern edge of the Sasol Secunda industrial complex with associated coal mining operations directly south and east. The area immediately south of the site is a fragmented mixture of coal mining activities and remnant infrastructure and ruins, pipelines, powerlines and roads interspersed between disturbed riparian and grassland areas.

⁵ Land Type Survey Staff, 1972–2006

⁶ Mucina and Rutherford, 2006; SANBI, 2018

⁷ SoilZA, 2026

5.1.6 HYDROLOGY AND DRAINAGE

The Secunda area falls within the Upper Vaal Water Management Area (Primary Drainage Region C) and forms part of the upper reaches of the Vaal River catchment. Locally, drainage contributes toward the Grootdraai Dam system near Standerton, which is a key regional water resource. The hydrological system is organised into quaternary catchments within the C12 drainage region. The drainage network is typically dendritic with low-gradient channels characteristic of the Highveld plateau, and the system is highly influenced by mining, industrial, and agricultural activities

Surface Drainage

This area is part of inland drainage systems, including the Vaal, Groot-Bossiespruit and other Highveld rivers. Industrial water comes from regional storage dams, like Grootdraai Dam.

Drainage Characteristics

- Dendritic patterns are common.
- Shallow, broad features indicate low gradients.

Flat terrain leads to local wetlands and poorly drained areas, a typical trait of the Highveld.

The untransformed parts of the study area are traversed by numerous narrow, winding watercourses and contains many wetland areas, as well as pans and farm dams of various sizes (**Figure 5-5**). These features are usually not visually prominent in the landscape and are often obstructed by the topography, vegetation, or infrastructure. By contrast, the many expansive artificial dams and evaporation ponds associated with the Sasol Secunda industrial complex are visually dominant in short- and medium-range views.

The GtP Project site itself is largely built-up, although a highly transformed and canalised watercourse crosses from north to south section along the western site boundary. This stream is bordered by a road embankment to the west and passes underneath this embankment via a concrete culvert to join up with a larger west-to-east running stream located south of the site (**Figure 5-6**).



Figure 5-5 – The untransformed parts of the study area contain many narrow watercourses, wetland and pans



Figure 5-6 – A highly transformed watercourse crosses the site from north to south and exits underneath an embankment through a concrete culvert

5.1.7 AQUATIC SYSTEMS

The project site falls within the Upper Vaal WMA and Upstream Vaal Dam sub-WMA within the quaternary catchment of C12D⁸ (**Figure 5-7**). The Vaal River originates on the Eastern Escarpment, north-east of Ermelo, and flows west, through the Mpumalanga Highveld, where it is dammed by the Grootdraai Dam near Standerton, from where water supply for industrial use at the Secunda Industrial Complex (SIC) is obtained. Downstream from the Grootdraai Dam, the Vaal River is joined by the Klip River and the Waterval River, and further downstream, at the confluence of the Vaal River with the Wilge River, the Vaal Dam has been constructed. Downstream of the Vaal Dam a number of tributaries draining the Gauteng, Northwest and Free State Provinces (including the Suikerbosrant River, the Klip Spruit, the Riet Spruit, the Taaibos Spruit, the Mooi River, the Renoster Spruit, the Skoon Spruit, and the Vals River) join the Vaal River, which flows further to the north-west, west, and south-west, until it is dammed by the Bloemhof Dam at its confluence with the Vet River. Downstream from the Bloemhof Dam, it continues in a slightly more south-westerly direction, and is joined by the Harts River and the Riet River, before its confluence with the Orange River at Douglas, some 700 km from its origin.

- The Waterval River originates just south of the town of Leandra, some 30 km to the north-west of the SIC. Following its confluence with the Rol Spruit, it is joined by the Groot Spruit, which originates to the north of the town of Evander. The main tributary of the Groot Spruit is the Klein Spruit, which drains the area where the SIC is located.
- The Klein Spruit is formed by the confluence of the Trichardt Spruit and the Bossie Spruit.
- The Trichardt Spruit flows from the north, draining the town of Secunda, and is joined from the east by the Klip Spruit, which roughly follows the northern boundary of the SIC Primary Area.
- The Bossie Spruit roughly forms the southern boundary of the Primary Area, and has two tributaries, namely the Groot-Bossie Spruit, which drains the south-east, and flows past SNF and SNE, and the Brand Spruit, which joins the Bossie Spruit from the south, and which forms the eastern boundary of the Outside Ash area.

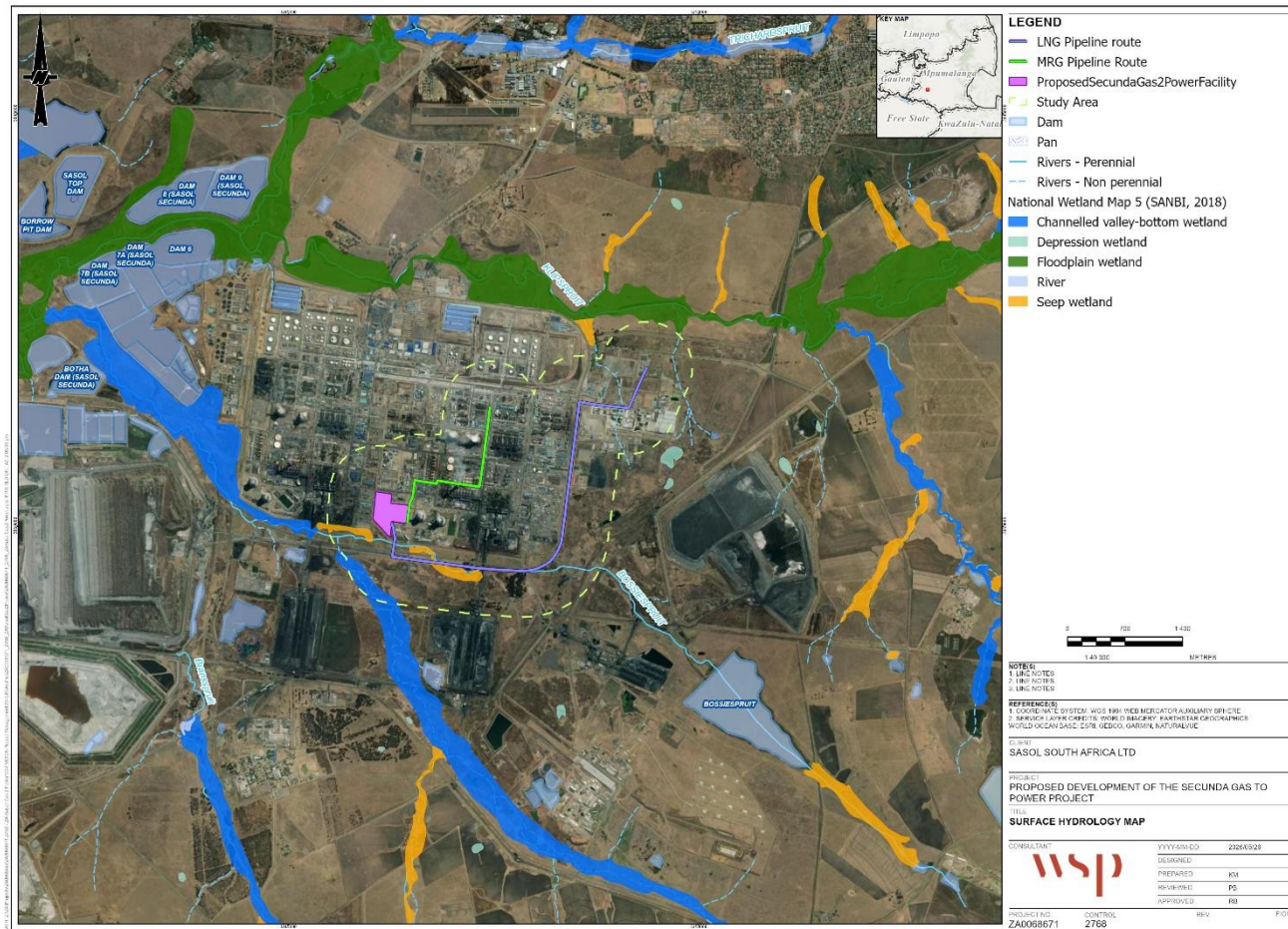


Figure 5-7 – Aquatic resources associated with this site.

5.1.7.1 Wetlands

Channelled Valley Bottom (CVB) wetland systems were identified within the study area based on the previous wetland assessment (Linström et al., 2024) and confirmed through the site surveys⁸, see **Figure 5-8**.

CVB1 (**Figure 5-9**) is located within the west of the proposed GtP facility and currently serves as an artificial landscaped canal which drains toward the Groot-Bossiespruit in the south. Historically the canal has experienced significant erosion and is currently incised to a depth of approximately 2 meters. The field survey confirmed that the system primarily receives its flow from surface runoff generated within the Sasol Operation, which is directed through multiple culverts that discharge into the system. The vegetation composition of CVB indicates that the wetland has been subject to ecological pressures resulting from the adjacent land-use, specifically the increase in hardened surfaces. The embankments of the CVB exhibits dense stands of Alien Invasive Plants (AIP) species including *Tagetes minuta* (African marigold), *Bidens Pilosa* (blackjack), *Ipomoea indica* (morning glory) and *Salix babylonica* (weeping willow). Despite the occurrence of invasive species, the channel was dominated by obligate wetland vegetation including *Phragmites australis* (common reed) and *Typha capensis* (bullrush)

CVB2 (**Figure 5-10**) is located just south of the proposed GtP Facility and north of the Synfuels Road. The system forms part of the Groot-Bossiespruit which drains from east to west. The channel is confined along the northern edge due to shallow rocky soils and extends towards the south where deeper vertic soils were identified during the current field survey. The system has been modified as a consequence of industrial development (i.e. Sasol operation and road networks). The wetland supports both obligate and facultative species, with common obligate hydrophytes such as *T. capensis* and *P. australis* concentrated around the channel and in ponded, wetter areas. The temporary to seasonally zones were mainly dominated by facultative grasses, including *Cynodon dactylon* and *Paspalum dilatatum*. The northern edge of the system displayed an infestation of AIPs, which include *T. minuta*, *B. Pilosa* and *Conyza* sp. CVB2 serves as the main flow pathway, receiving water from CVB1 and a smaller southern tributary. Therefore, CVB2 may receive pollutants from the direct wetland catchment via releases, surface runoff, and seepage. Poor-quality water from industrial sources and activities in the wider catchment is therefore considered a significant impact on CVB2 and downstream watercourses

⁸ Aquatic Biodiversity scoping report.WSP,2026.

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Figure 5-9 – Photographs illustrating CVB1 characteristics and condition in 2026: (Right) view towards the north showing the start of CVB1 which contains *P. australis* and AIP infestation (Left) view looking south, highlighting AIPs along the embankments and *T. capensis* within the channel



Figure 5-10 - Photographs illustrating CVB2 characteristics and conditions in 2026: (Right) the main channel of the Groot-Bossiespruit with *T. capensis* and *P. australis* along the channel, (Left) the AIP infestation along the northern edge of the system

5.1.7.2 Freshwater ecosystems

Freshwater ecosystem priority areas (FEPA)

The study area occurs in an Upstream Management Area, these are sub-quaternary catchments in which human activities need to be managed to prevent degradation of downstream river Freshwater Ecosystem Priority Areas (FEPAs) and Fish Support Areas (FSA) (Nel et al., 2011) (**Figure 5-11**).

These management areas are critical in ensuring that upstream activities do not adversely impact the ecological function of highly sensitive aquatic ecosystems downstream, often focusing on maintaining the required water quality and quantity (Nel et al., 2011).



Mpumalanga Biodiversity sector plan

Based on the MBSP freshwater assessment, the study area falls within 100 m of a watercourse classified as an ESA: Wetland clusters. These are priority freshwater areas identified to support CBAs, ensuring connectivity and ecological functionality (**Figure 5-12**).

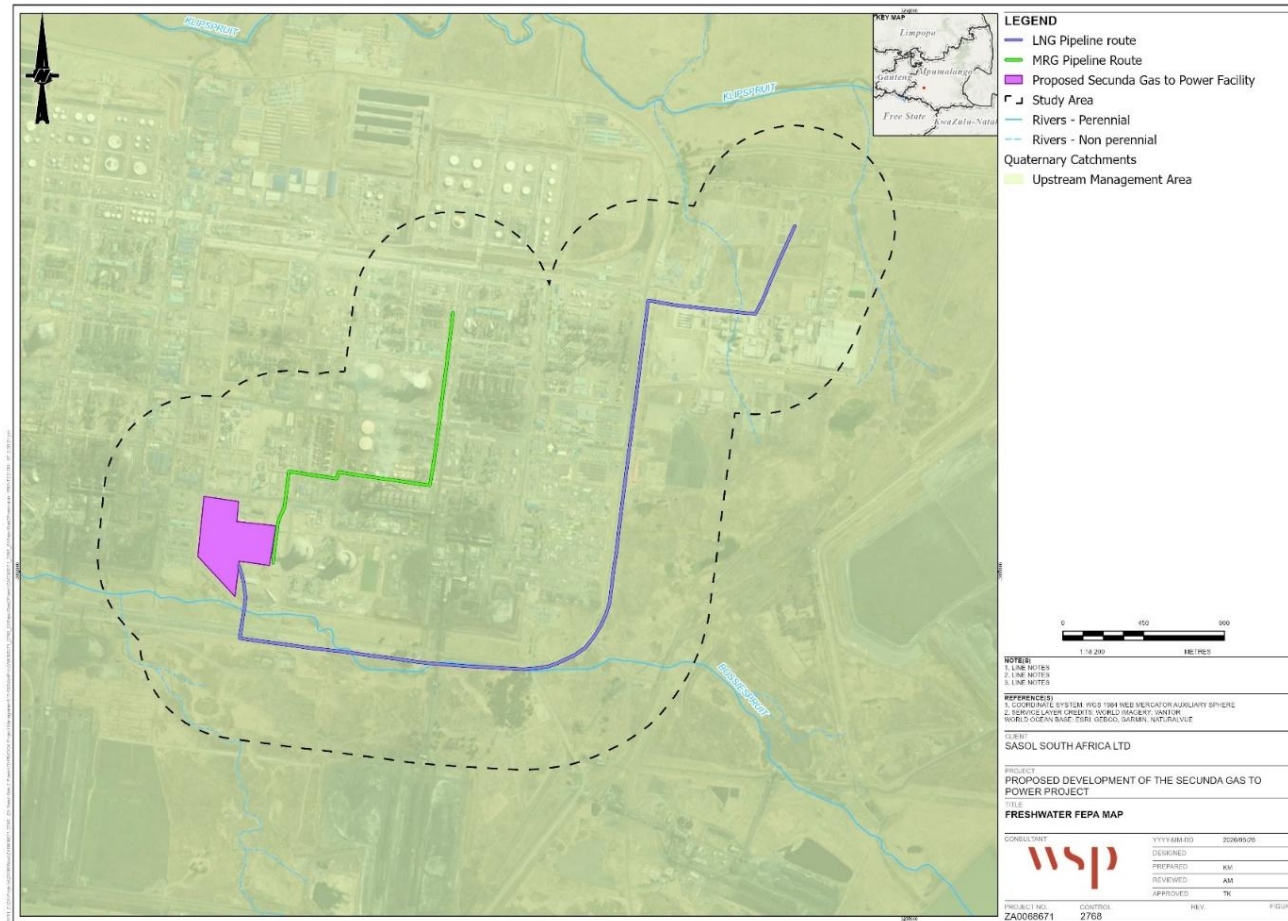


Figure 5-11 - FEPA in relation to the study area

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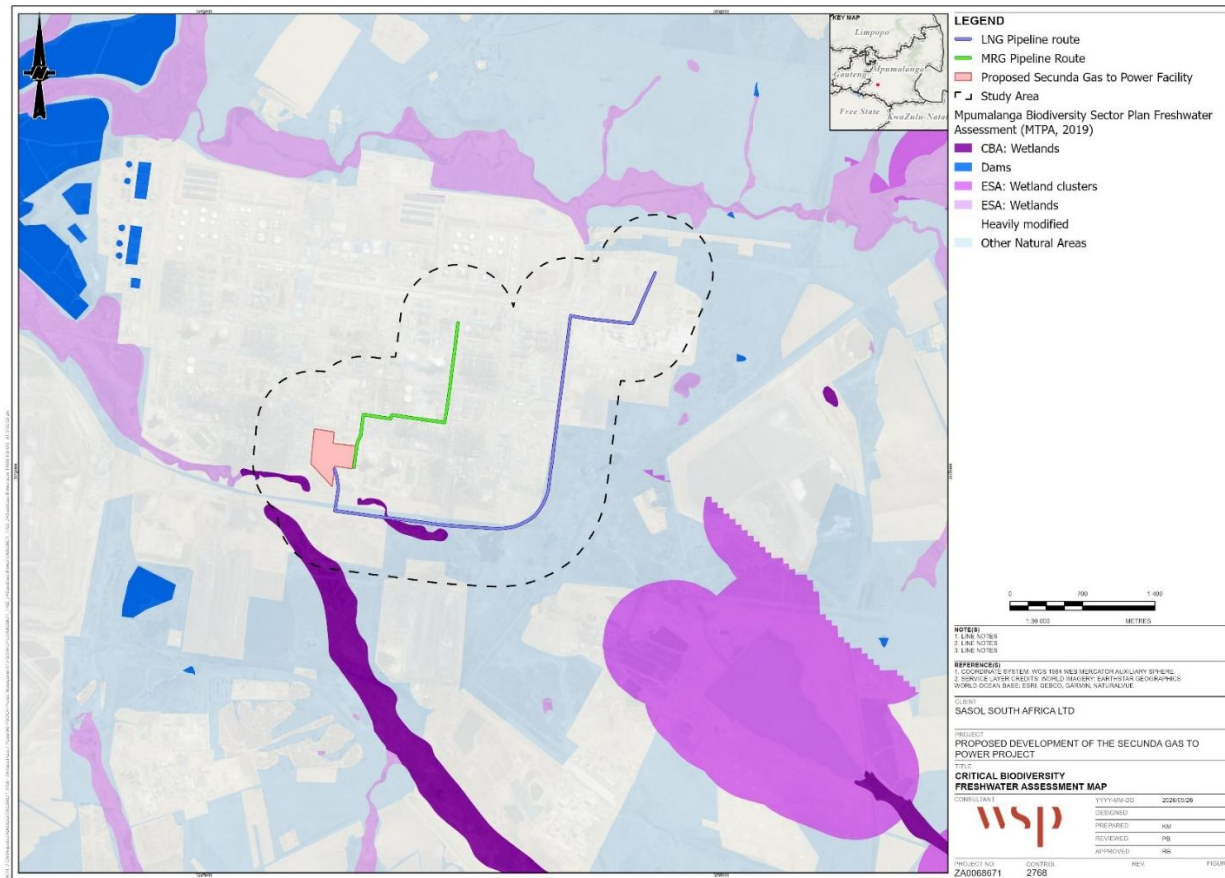


Figure 5-12 – MBSP Freshwater Assessment in relation to the study area

5.1.8 AIR QUALITY

The Secunda area is located within the Highveld Priority Area, which was declared due to persistent exceedances of national ambient air quality standards⁹. Ambient air quality is influenced by significant industrial emissions here, particularly from the Sasol Secunda facility, as well as regional sources including mining, power generation and domestic fuel burning¹⁰. The principal pollutants of concern include particulate matter (PM_{2.5} and PM₁₀), sulphur dioxide (SO₂), and nitrogen oxides (NO_x)¹¹. Monitoring data indicate that particulate matter is frequently elevated and may exceed international guideline values, with associated possible health risks. Air quality exhibits strong seasonal and meteorological variability, with poorer conditions typically observed during winter due to reduced atmospheric dispersion¹². Despite regulatory interventions under the Air Quality Act and implementation of the Highveld Priority Area management plan, air pollution remains a significant environmental and public health concern in the Secunda region⁹.

5.1.8.1 Meteorology

Since meteorological conditions affect how pollutants emitted into the air are directed, diluted, and dispersed within the atmosphere, the incorporation of reliable data into an air quality assessment is of the utmost importance. Dispersion comprises vertical and horizontal components of motion. The stability of the atmosphere and the depth of the atmospheric mixing layer control the vertical component. The horizontal dispersion of pollution in the boundary layer is primarily a function of the wind field. Wind speed determines both the distance of downwind transport and the rate of dilution as the plume 'stretches'. Mechanical turbulence is influenced by wind speed in combination with surface roughness².

Data collected from the South African Air Quality Information System (SAAQIS) suggested the following characteristics about this area, as depicted in Figure 5-2:

- Winds during the monitoring period were predominantly from the northeast, north-northeast and east-northeast. Calm conditions occurred 5.5% of the time.
- Diurnal wind patterns indicate a notable shift from the morning to the afternoon.
- Early morning (00:00 - 06:00): Winds were primarily from the northeast, north-northeast and east-northeast.
- Morning (06:00 - 12:00): Winds from the north-northeast and northeast remained dominant with an increase in winds from the north.
- Afternoon (12:00 - 18:00): The predominant winds from the morning were much reduced while the winds from the west-northwest, southwest and west became dominant.

⁹ DFFE.co.za

¹⁰ Greenbuilding.co.za

¹¹ Reference-global.com

¹² Scielo.org.za

- Night (18:00 - 24:00): The afternoon winds reduced during the night, with winds from the east-northeast, east and northeast becoming the dominant winds.
- Seasonal variations are also evident.
 - Summer (December to February): Winds were primarily from the east, east-northeast and northeast.
 - Autumn (March to May): Winds from the east-northeast and northeast remained dominant, with an increase in winds from the north-northeast and reduced winds from the east.
 - Winter (June to August): Winds from the northeast and north-northeast remained dominant, however, winds from the west, west-northwest and southwest also became dominant.

Spring (September to November): Winds from the west, west-northwest and southwest reduced significantly, with winds from the north-northeast, north and northeast becoming dominant².

Regional Air Quality

The driving forces of poor air quality in this area include both anthropogenic and natural processes. Anthropogenic driving forces include economic activity, urbanisation, industrial development, population growth, and the current political climate. Natural process driving forces include climate change, natural disasters and many others. These driving forces lead to pressures on the natural environment such as increased demand for resources, habitat change and increased development (Mpumalanga State of Environment report, 2003) which can lead to impacts being exerted on the natural, social, political and economic environments.

The Highveld experiences a wide range of both natural and anthropogenic sources of air pollution ranging from veld fires to industrial processes, agriculture, mining activities, power generation, vehicle use and domestic use of fossil fuels. Different pollutants are associated with each of the above activities, ranging from volatile organic compounds and heavy metals to dusts and odours. While certain areas of the HPA experience relatively good air quality, ambient air quality is largely of poor quality. Exceedances of PM₁₀ have often been recorded in the pollution hotspots of the eMalahleni, Kriel, Steve Tshwete, Ermelo, Secunda, Ekurhuleni, Lekwa, Balfour and Delmas areas (DEA, 2015). Despite the implementation of the HPA AQMP, exceedances in PM₁₀ and PM_{2.5} continue to occur, particularly in areas of industrial operations.

Particulate Matter (PM₁₀ & PM_{2.5})

The 24-hour NAAQS for PM₁₀ is 75 µg/m³, with four allowable exceedances of this standard per annum. The annual average NAAQS is 40 µg/m³ and no annual exceedances permitted.

The 24-hour NAAQS for PM_{2.5} is 40 µg/m³, and the maximum number of exceedances of this standard per annum is four. The annual average NAAQS is 20 µg/m³ and no annual exceedances of this standard is permitted

Key observations for the monitoring records in this area between 2023-2025 are as follows:

- All stations recorded more than four PM₁₀ exceedances of the 24-hour PM₁₀ NAAQS per year, thus the 24-hour PM₁₀ concentrations from all stations are non-compliant.

- Annual average PM₁₀ concentrations remained within the NAAQS limit of 40 µg/m³ at the Bosjesspruit station throughout the assessment period. However, exceedances of the annual standard were recorded at Secunda (2023 and 2024), Club-NAQI (2024) and eMbalenhle (2023 to 2025), thus were non-compliant during those years of exceedances.
- All stations recorded more than four PM_{2.5} exceedances of the 24-hour PM₁₀ NAAQS per year, thus the 24-hour PM_{2.5} concentrations from all stations are non-compliant.
- Annual average PM_{2.5} concentrations remained within the NAAQS limit of 20 µg/m³ at the Bosjesspruit station throughout the assessment period. However, exceedances of the annual standard were recorded at eMbalenhle (2023 and 2024), Club-NAQI (2024) and Secunda (2024), thus were non-compliant during those years of exceedances.

Sulphur Dioxide (SO₂)

The following NAAQS apply to SO₂:

- 1-hour averaging period - 350 µg/m³ with 88 exceedances permitted.
- 24-hour averaging period - 125 µg/m³ with four exceedances permitted.
- Annual average - 50 µg/m³ with no exceedances permitted.

While NAAQS are available for 10-minute SO₂ concentrations, the data obtained from SAAQIS for the monitoring stations has a minimum averaging period of 1-hour, thus a comparison against the 10-minute NAAQS was not possible. Should representative data become available during the course of the study, the baseline will be updated accordingly and included in the final report.

Key observations for the monitoring records in this area between 2023-2025 are as follows:

- While all stations recorded exceedances of the 1-hour SO₂ NAAQS, the number of exceedances remained below the 88 permitted exceedances per year, thus the 1-hour SO₂ concentrations from all stations remained compliant.
- No exceedances of the 24-hour SO₂ NAAQS occurred at any of the stations, except eMbalenhle, which recorded one exceedance in 2023, remaining below the four permitted 24-hour exceedances per annum. Thus, the 24-hour SO₂ concentrations from all stations remained compliant.
- The annual average SO₂ concentrations remained below the NAAQS limit of 50 µg/m³ across all monitoring stations, thus remaining compliant.

NITROGEN DIOXIDE (NO₂)

The following NAAQS apply to NO₂:

- 1-hour averaging period - 200 µg/m³ with 88 exceedances permitted.
- Annual average - 40 µg/m³ with no exceedances permitted.

Key observations for the monitoring records in this area between 2023-2025 are as follows:

- No exceedances of the 1-hour NO₂ NAAQS were recorded between 2023 and 2025 at the Secunda and eMbalenhle North stations. Some exceedances were recorded during some years at the remaining stations; however, all exceedances remained below the permitted 88 exceedances per year, thus the 1-hour NO₂ concentrations from all stations remained compliant.

- The annual average NO₂ concentrations remained below the NAAQS limit of 40 µg/m³ across all monitoring stations, thus remaining compliant.

Dust Fallout

No monitoring data was made available at the time the baseline reporting was drafted.

Sensitive Receptors

Sensitive receptors are identified as areas that may be impacted negatively due to air emissions associated with the proposed Project. Examples of receptors include, but are not limited to, schools, shopping centres, hospitals, office blocks, residential areas and in more remote locations, farmhouses or farmsteads. Sensitive receptors within a 10 km radius of the centre of the proposed operations were identified through a desktop assessment and are provided in **Table 5-2** and **Figure 5-13**.

The Secunda urban area is located to the north of the site and comprises of commercial, industrial and residential areas. The eMbalenhle residential area is located to the west of the proposed Project. Additional surrounding land uses include predominantly agricultural areas to the east and south with limited farmsteads and dispersed rural dwellings.

Table 5-2 - Sensitive receptor locations

ID	Receptor Name	Distance from proposed operation (km)	Direction	Longitude (°S)	Latitude (°E)
1	Healing Hands Wound Care Centre	~7.8	NE	29.225345	26.522604
2	Evander Hospital	~10.3	NNW	29.119401	26.468593
3	eMalenhle Residential	~5.7	WNW	29.103368	26.571494
4	Evangelies Gereformeerde Kerk	~5.9	NE	29.202818	26.525681
5	Secunda Residential	~5.6	NE	29.203327	26.529901
6	Vukuzithathe Primary School	~8.8	W	29.083197	26.567793
7	Ext 19 Church St. Lucas	~7.9	WSW	29.072470	26.564656
8	St. John Apostle Mission Church	~7.1	WNW	29.090921	26.557243
9	Ukhozi Lodge	~6.4	ESE	29.224169	26.573270
10	Trinity Church Charl Cilliers	~11.5	SSE	29.190962	26.664244
11	Sunset View Lodge	~6.4	N	29.172620	26.506126
12	Lanzerac Street Residential	~5.7	N	29.171934	26.512193
13	Anchor Guesthouse	~5.9	NNE	29.188361	26.515795
14	Rhino Lodge Game Farm	~14.0	SW	29.063335	26.657530

ID	Receptor Name	Distance from proposed operation (km)	Direction	Longitude (°S)	Latitude (°E)
15	New Apostle Church	~7.1	NW	29.089768	26.537524
16	Shapeve Primary School	~7.8	NW	29.090569	26.531656
17	Embassy of God's Kingdom Church	~7.5	NW	29.095478	26.529740
18	Highveld Park High School	~7.4	NE	29.208040	26.510437
19	Evander Residential	~10.0	NNW	29.112776	26.483647
20	Muzimuhle Primary School	~6.6	NNW	29.130956	26.508644

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5.2 BIOLOGICAL ENVIRONMENT

5.2.1 TERRESTRIAL BIODIVERSITY

The study area is situated within the Grassland Biome and is mapped predominantly as Soweto Highveld Grassland (Gm 8), which is classified as Vulnerable¹³(**Figure 5-14**). The landscape is dominated by grassland vegetation interspersed with wetlands and drainage features that support distinct plant communities and provide critical habitat for fauna.

Wetlands significantly enhance biodiversity in the area and are recognised as important ecological infrastructure¹⁴. Previous site-level assessments indicate medium to high biodiversity sensitivity, with the potential presence of species of conservation concern such as Blue Crane, oribi antelope and the Makwassie musk shrew and certain invertebrates (butterflies)¹⁵. Sasol's own biomonitoring has found red data species within their own operational area¹⁶.

The region has undergone substantial transformation due to mining, industrial development and agriculture, resulting in habitat loss, fragmentation and degradation. Consequently, remaining natural habitat patches and wetland systems are considered of high conservation importance in the Secunda area¹⁷.

5.2.1.1 Protected areas

According to the Protected Areas Database, the study area does not overlap with any formally protected area. Similarly, the proposed GtP facility footprint and the LNG and MRG pipeline route options do not intersect any nationally protected areas.

5.2.1.2 Terrestrial Critical Biodiversity Areas (CBAS) and Ecological Support Areas (ESAS)

The study area does not intersect with CBAs or ESAs based on the MBSP. However, the LNG Pipeline runs parallel to Other Natural Areas (ONAs).

¹³ Terrestrial Biodiversity SSVR.WSP,2026

¹⁴ abcjournal.aosis.co.za

¹⁵ Mukondeleli 1 Solar PV Facility EIA. WSP.com

¹⁶ Sasol Biodiversity Management.Looock,2025.

¹⁷ Biodiversity Sector Plan, Mpumalanga. Mpumalanga.com

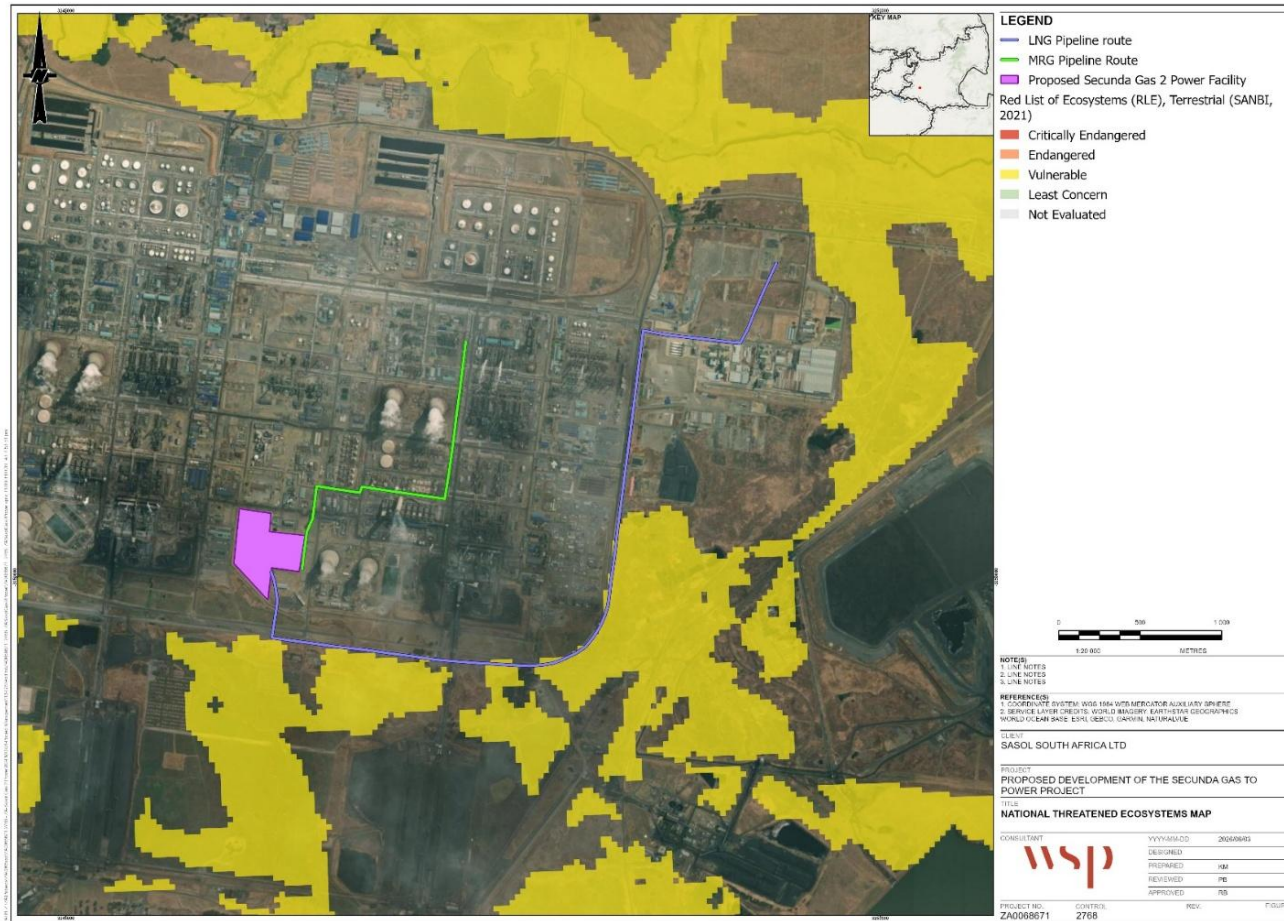


Figure 5-14 - Nationally threatened ecosystems in relation to the study area

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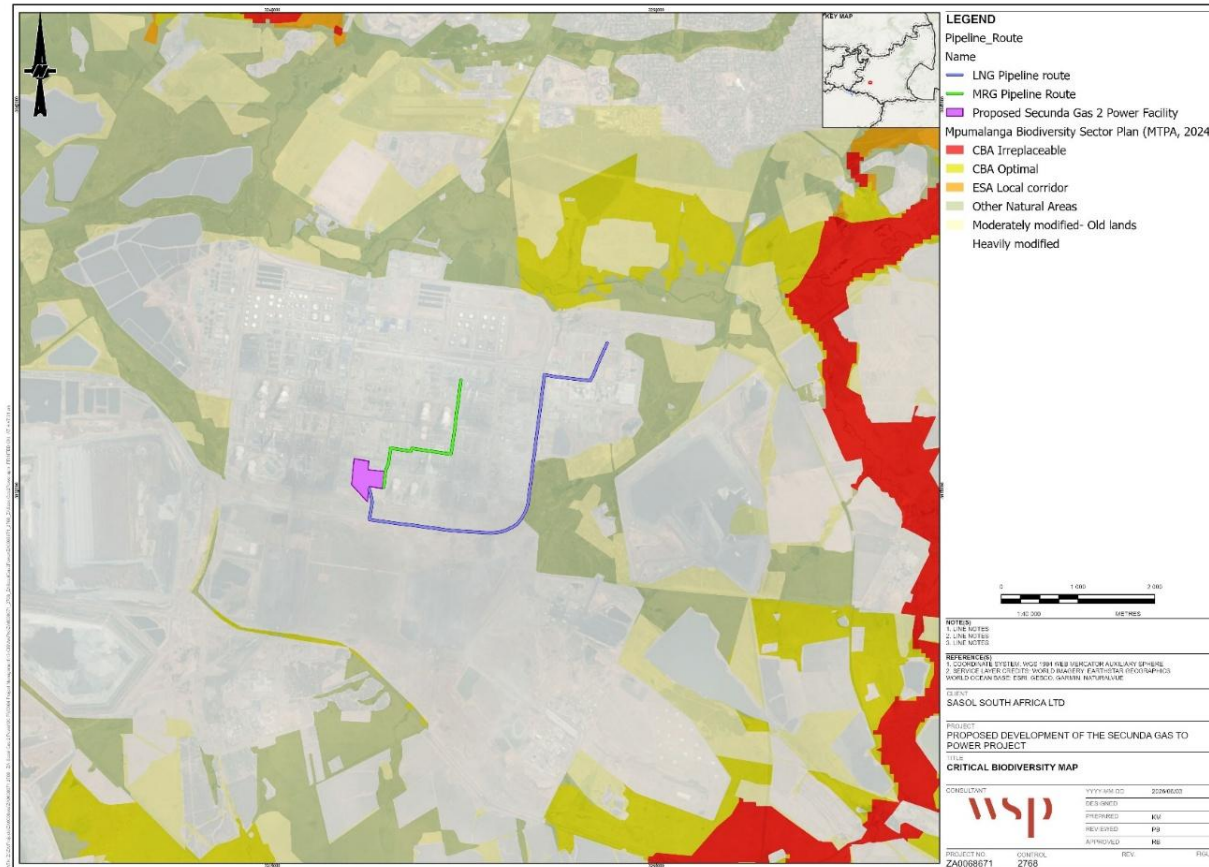


Figure 5-15 - MBSP in relation to the study area

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5.2.1.3 Important bird areas

According to the national Important Bird Area dataset, the study area does not overlap with any designated IBA. The proposed GtP facility footprint and both pipeline route options are located within the industrialised Secunda landscape and are not situated within or adjacent to any recognised IBA.

The closest IBA to the study area is the Amersfoort-Bethal-Carolina District IBA, located approximately 28 km from the proposed development.

5.2.1.4 National Threatened Ecosystems

According to the National Terrestrial Ecosystem dataset (SANBI, 2021), portions of the study area intersect ecosystems classified as Vulnerable (**Figure 5-14**). The mapped Vulnerable ecosystem corresponds to Soweto Highveld Grassland, which extends across the broader landscape and is intersected by sections of the proposed LNG pipeline alignment. In contrast, the proposed GtP facility footprint and the MRG pipeline route are largely situated within the existing Sasol industrial complex and do not substantially overlap mapped Vulnerable ecosystem areas.

Although portions of the study area are located within a mapped Vulnerable ecosystem, extensive historical industrial development, associated infrastructure, agricultural activities, and other anthropogenic disturbances have altered much of the original ecosystem. Consequently, the presence of a mapped threatened ecosystem does not necessarily indicate the presence of intact habitat on the ground.

Notwithstanding the transformed nature of the area, remnant Soweto Highveld Grassland habitat may continue to contribute to local biodiversity value, ecological connectivity, and habitat availability for SCC.

5.2.1.5 Key biodiversity areas (KBA)

According to the national KBA dataset, the study area does not overlap with any designated Key Biodiversity Area. The proposed GtP facility footprint and both the LNG and MRG pipeline route options are situated within the existing industrialised landscape associated with the Sasol Secunda operations and are not located within or adjacent to a recognised KBA.

The nearest Key Biodiversity Area is the Devon Grasslands KBA, which occurs approximately 13 km west of the study area.

5.2.2 AQUATIC BIODIVERSITY

The aquatic biodiversity of the Secunda area is associated with a network of wetlands, rivers and impoundments within the Upper Vaal River catchment. These systems support a range of freshwater biodiversity including fish, amphibians, macroinvertebrates and aquatic vegetation, with wetlands acting as key ecological drivers by providing habitat heterogeneity and regulating hydrological processes¹⁷.

Site-level assessments indicate that aquatic macroinvertebrates and amphibians are particularly important indicators of ecosystem condition. However, the aquatic environment is subject to significant pressures from mining, industrial activity and land-use change, resulting in water quality

deterioration, eutrophication and wetland degradation¹⁸. Consequently, remaining aquatic habitats are considered ecologically sensitive and of high conservation importance within the Secunda landscape.

5.2.2.1 In situ water quality

The In situ water quality parameters such as temperature, pH, electrical conductivity and dissolved oxygen were measured onsite by means of portable XS Revio Multiparameter.

Water quality measurements generally fell within recommended guideline ranges for temperature, pH, and dissolved oxygen. However, elevated electrical conductivity was recorded at one sampling location, indicating potential water quality impacts.

5.2.2.2 Aquatic Macroinvertebrates

Macroinvertebrate diversity within the study area was assessed using the South African Scoring System Version 5 (SASS5). A total of 29 macroinvertebrate taxa were recorded within the study area. Communities were dominated by pollution-tolerant taxa, suggesting moderate ecological disturbance. However, the presence of higher-sensitivity taxa such as *Atyidae* (freshwater shrimp) (**Figure 5-16**) which was the highest scoring macroinvertebrate indicates that some aquatic habitat and ecological function remain.



Figure 5-16 - The highest scoring macroinvertebrate taxon– *Atyidae* (Figure from Basin (2017))

5.2.2.3 Ichthyofauna

Fish surveys recorded three fish species within the study area, namely *Enteromius anoplus*, *Labeo umbratus* and *Pseudocrenilabrus philander*. All recorded species are classified as Least Concern according to the IUCN Red List and are moderately tolerant of modified water quality conditions. The

¹⁸ WRC.org.za

recorded species are associated with habitats containing overhanging vegetation, undercut banks and flowing water.

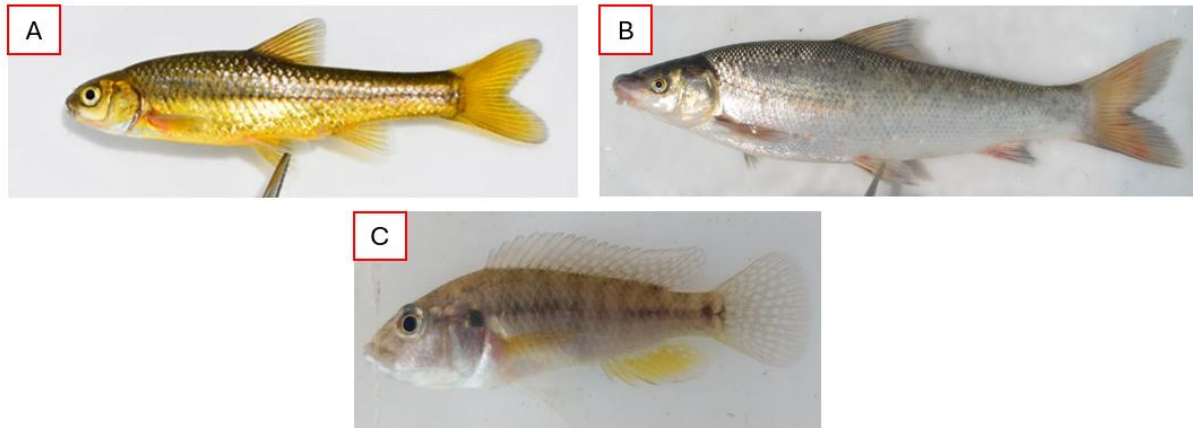


Figure 5-17 - Collected fish specimens. A - *Enteromius anoplus*, B - *Labeo umbratus* and C - *Pseudocrenilabrus philander* (Figures from: A- Kambikambi et al., 2021; B- Ramoejane et al., 2026 and C- Katongo et al., 2017)

5.2.3 PLANT SPECIES

The study area is located within the Eastern Highveld Grassland vegetation type, characterised by a short, dense grassland dominated by perennial sourveld grasses such as *Themeda triandra*, *Eragrostis* spp., and *Aristida* spp. The vegetation supports a diverse herbaceous component including *Helichrysum*, *Berkheya* and *Dicoma* species, as well as a range of geophytes typical of Highveld grasslands. Woody species are largely restricted to rocky outcrops and drainage lines¹⁹.

Wetland systems within the area support distinct plant communities including *Phragmites australis* reedbeds, sedge-dominated wetlands, and moist grasslands. The vegetation is classified as Endangered, with significant transformation arising from mining, agriculture, and industrial development. Remaining intact patches are therefore considered of moderate to high ecological sensitivity¹⁴.

Locally, the vegetation cover has been completely replaced by the highly industrialised Sasol Secunda complex to the north of the site, as well as the associated ash disposal and coal mining operations located west, east and to a lesser extent south of the site. Blocks of disturbed riparian and grassland vegetation are also located immediately south, as well as further east and west of the site, with stands and isolated clumps of eucalyptus and other alien trees in a few locations³.

¹⁹ GCS, 2016 as referenced by ERM, 2016.

The GtP Project site itself is largely devoid of vegetation, with most of the site utilised for various equipment and material storage and handling purposes and as such is covered by gravel or hardstand. Additionally, the associated project pipeline route to the northeast passes through the industrial complex. However, a small section along the western site boundary consists of a highly disturbed mix of riparian vegetation, kikuyu and other introduced grasses, and small clumps of alien trees and invasive vines and shrubs (**Figure 5-18**).



Figure 5-18 - Most of the site is gravel covered material storage and handling areas, while highly disturbed riparian vegetation occurs along the western site boundary

5.2.3.1 Flora SCC

No threatened or protected plant species were recorded within the study area or proposed development footprint during the field survey. However, a population of approximately 25 individuals of *Crinum bulbispermum* (Orange River Swamp Lily), a species protected under provincial legislation, was recorded approximately 198 m southwest of the study area boundary (26°33'54.68"S; 29°09'32.82"E) within the broader area of influence¹³ (**Figure 5-19**). As the population occurs outside the development footprint and is separated from the proposed infrastructure by existing disturbance features, no direct impacts on this population are anticipated. Its presence nevertheless indicates that suitable habitat for protected plant species persists within the surrounding landscape.



Figure 5-19 - The *Crinum bulbispermum* (Orange River Swamp Lilly) (26°33'54.68"S; 29°9'32.82"E)

5.2.4 ANIMAL SPECIES

The study area supports a typical Highveld grassland faunal assemblage characterised by small to medium-sized mammals, a diverse avifaunal community, amphibians associated with wetlands and seasonal pans, and a range of reptiles adapted to open grassland habitats¹⁷.

Mammalian fauna is dominated by rodents, insectivores and meso-predators, while larger species are largely absent due to habitat transformation. Wetland environments support amphibians such as toads and reed frogs, as well as water-associated bird species. Several species of conservation concern, including Mountain Reedbuck, Serval and Cape Clawless Otter, avian species such as the Blue Crane *Anthropoides paradiseus*, may occur in suitable habitats¹⁵.

The ecological integrity of faunal communities is influenced by land-use pressures including mining, agriculture and industrial development¹⁷.

5.2.4.1 Mammals

No mammal SCC were recorded within the study area or proposed development footprint during the field survey. However, evidence of Serval (*Leptailurus serval*) in the form of scat was recorded within the broader area of influence (26°34'4.83"S; 29°10'52.52"E: **Figure 5-20**). Serval is a wetland-associated mesocarnivore that is closely linked to wetlands, drainage features, and other habitats that provide suitable prey resources and cover. Although listed as Least Concern globally, the species is classified as Near Threatened in South Africa and is protected under provincial legislation. As the record was located outside the study area and outside areas likely to be directly impacted by the proposed development, direct impacts on the species are not anticipated.



Figure 5-20 - *Leptailurus serval* (serval) scat observed outside the study area (26°34'4.83"S; 29°10'52.52"E)

5.2.4.2 Avifauna

The DFFE Environmental Screening Tool identified the Caspian Tern (*Hydroprogne caspia*), a Vulnerable species, as having the potential to occur within the study area. A review of SABAP2 records indicates that approximately 148 bird species have been recorded within the broader region, highlighting the importance of the remaining grassland, wetland and aquatic habitats in supporting avifaunal diversity. However, no avifaunal SCC were recorded during the field survey.

The Caspian Tern is primarily associated with large waterbodies, estuaries, coastal environments and suitable roosting and foraging areas. While artificial waterbodies occur within the broader landscape, the highly transformed nature of the development footprint and the absence of suitable breeding or roosting habitat suggest that the likelihood of regular utilisation of the study area by this species is low.

5.2.4.3 Invertebrates

The DFFE Environmental Screening Tool identified the Grassveld Nimble Blue (*Lepidochrysops procera*) as having the potential to occur within the study area. This species is a habitat specialist associated with relatively intact grassland ecosystems and specific host plant requirements.

No evidence of *Lepidochrysops procera* or any other invertebrate SCC was recorded during the field survey. Given the highly transformed nature of much of the development footprint, the habitat is not considered favourable for the species. Although isolated remnants of natural grassland remain within the broader landscape, the likelihood of occurrence within the proposed development footprint is considered low.

5.3 SOCIAL ENVIRONMENT

5.3.1 ARCHAEOLOGICAL AND CULTURAL HERITAGE

The Sasol Secunda area, located within the Mpumalanga Highveld, is characterised by a generally low density of archaeological and cultural heritage resources²⁰. Regional archaeological evidence indicates occupation spanning from the Stone Age to the Iron Age; however, site-specific studies consistently show limited archaeological visibility within the Secunda area, with only sparse and low-significance Stone Age artefacts recorded in disturbed contexts. Iron Age settlement evidence is largely absent within the immediate project area²¹.

The most prominent and sensitive heritage features relate to the historical period, including farmstead remains, historical structures older than 60 years, and burial grounds or graves, which are protected under the National Heritage Resources Act²². Extensive agricultural and industrial development, particularly associated with mining and petrochemical activities, has significantly altered the landscape and likely reduced the preservation of earlier archaeological material.

Although previous assessments identified heritage value in the broader area, the development site has already been extensively disturbed by Sasol plant activities. As a result, significant archaeological heritage resources are unlikely to be present, and the proposed development is unlikely to impact them²³.

5.3.2 PALAEOLOGY

The subject area has VERY HIGH palaeontological sensitivity. Anderson (2025) notes that “The Vryheid Formation contains trace fossils, which are common and of little palaeontological significance. It also contains abundant plant fossils. These occur rarely within sandstones but make up almost 100% of coal seams. Coal seams are fossil fuels which are burned routinely in power stations. These plant fossils are valuable palaeontological tools but are very common, and consequently not palaeontologically significant. The red coding is linked to the correlation with the Vryheid Formation and the Whitehill Formation. The Whitehill Formation contains the palaeontologically significant marine reptile Mesosaurus, but this has never been seen in the Vryheid Formation.”

A PIA by Bamford (2023) for a proposed development south of the R546 found that the site partly covers the Vryheid Formation, which may contain Glossopteris plant fossils, and also includes non-fossiliferous Jurassic dolerite. A palaeontological survey on 20 November confirmed the area is disturbed due to agriculture and game farming, with no fossils found on the surface in the project area.

²⁰ Archaeology.org

²¹ HIA: Mogwase (Ngwedi) substations and turn-ins

²²²² SAHRIS: CTS21_215_Savannah_Secunda Becrux 1 and 3 PV_AIA

While the area proposed for development is underlain by sediments of very high palaeontological sensitivity belonging to the Vryheid Formation, the area proposed for development has already been extensively disturbed from activities associated with the Sasol plant. As noted by Bamford (2023), due to the existing disturbances associated with the Sasol Plant, the likelihood of impact to significant palaeontological heritage is low²³.

5.3.3 VISUAL

The visual baseline of the Secunda area is characterised by a highly industrialised landscape (**Figure 5-21**). The flat topography makes the existing industrial areas highly visible in the landscape. Sasol Secunda being a major visual focal point in the existing landscape in both day and night. The area is predominantly industrial in character and has a low overall scenic value. However, visually sensitive receptors occur in the surrounding residential and agricultural areas, including Secunda Town, eMbalenhle, nearby farmsteads, roads used by the public and recreational users of the surrounding landscape. The visual environment is influenced by extensive petrochemical infrastructure with high visibility across the flat Highveld terrain.

Consequently, additional developments are likely to result in incremental visual impacts rather than fundamentally altering the character of the landscape.



Figure 5-21 - Topography and industrial landscape associated with Sasol Secunda
(www.sasol.com/media-centre)

²³ Artefactual Heritage Consulting, 2026

Seasonal changes change the appearance of most landscapes, with the regional vegetation cover typically alternating from vast expanses of various hues of green during the rainy season, to more subdued browns and tans during the winter (**Figure 5-22**). Croplands also change in appearance, from bare earth at the start of the spring planting season to visually uniform fields of corn during summer. These gradually brown and yellow during autumn before harvesting, following which the fields are again characterised by exposed earth and bare stalks, or blackened burnt areas.



Figure 5-22 - Regional vegetation cover typically alternates from vast expanses of green during the rainy season, to more subdued browns and tans during the winter

The GtP Project site itself is largely devoid of vegetation, with most of the site utilised for various equipment and material storage and handling purposes and as such is covered by gravel or hardstand. Additionally, the associated project pipeline route to the northeast passes through the industrial complex. However, a small section along the western site boundary consists of a highly disturbed mix of riparian vegetation, kikuyu and other introduced grasses, and small clumps of alien trees and invasive vines and shrubs (**Figure 5-18**).



Figure 5-23 - Most of the site is gravel covered material storage and handling areas, while highly disturbed riparian vegetation occurs along the western site boundary

5.3.3.1 Visual sensitive receptors

Visual impact is primarily concerned with human interest. Potential viewers or visual receptors therefore constitute people that might see and be affected by the proposed GtP Project development. Receptor sensitivity refers to the degree to which an activity is expected to impact receptors, and depends on

Receptors in the study area potentially include the following groups:

- employees of the Sasol Secunda and associated mining operations (resident receptors)
- residents of the various farmsteads and smallholdings within the study area, and workers at these establishments (resident receptors)
- people living or working at or visiting the hospitality and commercial destinations that occur in the study area (resident and transient receptors)
- residents of and visitors to Sasolburg and other townships in the study area (resident and transient receptors)

The degree to which these receptors will be impacted by the project will be dependent on the level of visibility of the project components within the project study area, which is further assessed in the impact assessment

Receptor sensitivity

The visual receptor sensitivity and incidence can be classified as high, moderate, or low. The following ratings have been applied to the identified visual receptor groups:

- Resident receptors: Resident receptors comprise many people (incidence factor) living and/or working in the study area. We advance that considering the high existing levels of development associated with the industrialised and urbanised setting, most people in this receptor group will probably attach a low value (vulnerability factor) to the visual appearance of the project site
- Transient receptors: People travelling through the study area will include residents, workers, regional tourists, and people on route to towns in the area, or destinations elsewhere. Given the proximity of numerous towns, it is likely that at least a moderate number of people (incidence factor) could see the site in passing. It can be assumed that different people within this receptor group will have widely divergent views on visual value, but given the highly industrialised nature of the study area will again attach a low degree of value to the proposed project site (vulnerability factor)

Based on the above, many people (incidence factor) are expected to be visually affected by the project, but that the perceived landscape value (vulnerability factor) is expected to be low.

5.3.3.2 Visual Absorption Capacity (VAC)

VAC can be defined as an “estimation of the capacity of the landscape to absorb development without creating a significant change in visual character or producing a reduction in scenic quality” (Oberholzer, 2008). The ability of a landscape to absorb development or additional human

intervention is primarily determined by the nature and occurrence of vegetation cover, topographical character, and human structures

Based on the extensive degree of landscape transformation of the site and most of the study area, and prevalence of vertical manmade elements, the VAC of the site is rated as high.

5.3.4 SOCIO-ECONOMIC

Provincial context

Mpumalanga Province is located in the north-eastern part of South Africa. The province borders two of South Africa's neighbouring countries, Mozambique and Swaziland, and four other South African provinces: Gauteng, Limpopo, KwaZulu-Natal, and the Free State (**Figure 5-24**). Mpumalanga is characterised by the high plateau grasslands of the Middleveld, which roll eastwards for hundreds of kilometres (Mpumalanga Provincial Government, 2022).

According to the Census 2022, Mpumalanga has a total population of approximately 5 143 324 (Census, 2022). The province shares international borders with Mozambique and Eswatini and is referred to as the province of the rising sun, owing to both the meaning of the name “Mpumalanga” and its location in the eastern part of South Africa (Census, 2022). Mpumalanga is home to the world-renowned Kruger National Park, one of the largest game reserves globally and habitat to the Big Five. Other key tourist attractions include the Sudwala Caves, the Three Rondavels, God’s Window, and the Blyde River Canyon. The province is also a significant contributor to South Africa’s mining sector, with more than 80% of the country’s coal extracted within its borders. In 2022, the Mpumalanga Province contributed approximately 8% to the national GDP. The most commonly spoken languages in the province include SiSwati (30.5%), IsiZulu (27.8%), Xitsonga (10.6%), Sepedi (10.3%), and IsiNdebele (9.9%) (Census, 2022).

According to the Census (2022), Mpumalanga covers an area of approximately 76,495 km², representing approximately 6.3% of South Africa’s total land area, which ranks it as the second smallest province after Gauteng. The capital city of Mpumalanga Province is Mbombela, while other major towns and cities include Emalahleni, Standerton, eMkhondo, Malelane, Ermelo, Barberton, and Sabie. The province is divided into three district municipalities: Gert Sibande, Ehlanzeni, and Nkangala. These three districts are further subdivided into 17 Local Municipalities. The proposed development falls within the Gert Sibande District Municipality (GSDM).

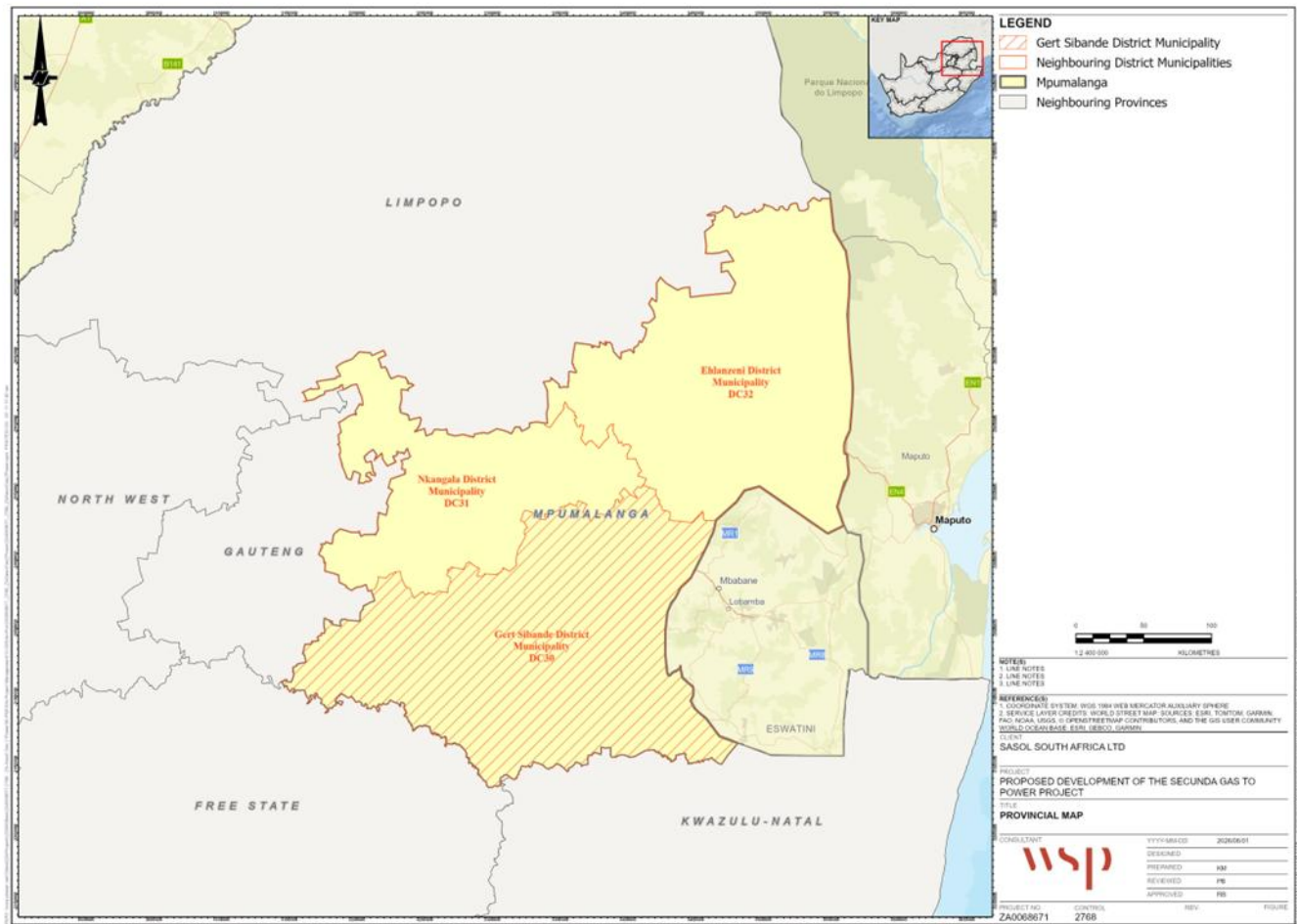


Figure 5-24 - South African regional map

District Municipal context

The GSDM has municipal executive and legislative authority in an area that includes more than one municipality, making it a Category C municipality situated in the southern region of the Mpumalanga Province (Municipalities of South Africa, 2024). The district is bordered by the Ehlanzeni and Nkangala District Municipalities to the north, KwaZulu-Natal and the Free State to the south, Eswatini to the east, and Gauteng to the west (Municipalities of South Africa, 2024). It is the largest district in Mpumalanga, covering approximately 31,840 km², which accounts for nearly half of the province's land area (Municipalities of South Africa, 2024). The district recorded a population of 1,283,459 (Census, 2022).

The administrative seat of the district is Ermelo, and it comprises seven local municipalities, which are Chief Albert Luthuli, Dipaleseng, Dr Pixley Ka Isaka Seme, Govan Mbeki, Lekwa, Mkhondo, and Msukaligwa. The district is strategically positioned along several national transport routes, including the N3 corridor linking Gauteng and KwaZulu-Natal, the N17 route connecting Gauteng and Eswatini, and the N11, which provides north-south connectivity into KwaZulu-Natal. GSDM hosts several urban centres, including Ermelo, Standerton, Secunda, Volksrust, Bethal, Breyten, Carolina,

Balfour, Grootvlei, and Wakkerstroom, forming a mixed urban-industrial and agricultural landscape. The proposed development is located within the town of Secunda.

Local Municipal context

GMLM has the most diversified economy within the Gert Sibande District, dominated by the petrochemical industry (the SASOL II and III complexes) and coal mining. GMLM has the largest underground coal mining complex in the world, which makes it an important strategic area within the national context (Goven Mbeki Local Municipality, 2022/2023). The district hosts major industrial operations, including petrochemical activities associated with Sasol and several coal-fired power stations operated by Eskom (Municipalities of South Africa, 2024).

The GMLM, previously Highveld East Local Municipality, is one of seven local municipalities within the Gert Sibande District Municipality, located in the Mpumalanga Province of South Africa (Municipalities of South Africa, 2024). The municipality is one of the seven municipalities that make up the district, accounting for 9% of the district's geographical area and covering approximately 2,955 km² (Municipalities of South Africa, 2024).

GMLM comprises 32 wards, including several urban and rural settlements, such as Secunda, Embalenhle, Bethal, Evander, Kinross, Leandra, and Trichardt. The spatial structure of the municipality is characterised by a combination of urban industrial nodes and surrounding agricultural and rural areas, with the Greater Secunda complex forming the primary economic hub (Municipalities of South Africa, 2024).

According to Stats SA Census 2022 data, the population of Govan Mbeki Local Municipality increased from 294,538 people in 2011 to 310,117 people in 2022. This represents an increase of 15,579 people and an average annual growth rate of approximately 0.5%, slightly higher than the municipality's corresponding annual economic contraction of 0.2%. In 2022, people aged 0–34 years accounted for 62.1% of the population, while those aged 60 years and older accounted for 8.3%. The gender distribution was relatively balanced, with males comprising 50.1% and females 49.9%.

Although population growth has been moderate compared with other municipalities in Mpumalanga, continued industrial development, particularly around Secunda, is expected to attract further inward migration. This may place additional pressure on municipal infrastructure and service delivery. The municipality includes urban, peri-urban and rural settlements, with major population concentrations in the Greater Secunda area, including Secunda, Embalenhle, Evander, Kinross and Trichardt.

The population is predominantly Black African, with isiZulu the most widely spoken language, alongside Afrikaans and other South African languages. The slight male predominance may reflect the influence of labour-intensive sectors such as mining, petrochemicals and industrial activities, which typically attract a larger proportion of male workers.

The age distribution is predominantly composed of the working-age population, which accounts for 69.80% of the total population, indicating a strong and economically active labour force (Census, 2022). The youth population represents 25.40%, and the elderly population constitutes only 4.70%. The distribution reflects a favourable demographic structure that supports economic productivity,

provided that sufficient employment opportunities are available to accommodate both the current workforce and the emerging youth population²⁴.

IsiZulu is the primary language of communication for the majority of residents within the municipality in the GMLM, accounting for 64.6% of the population. Afrikaans is the second most widely spoken language at 7.9%, followed by isiXhosa at 5.5%, Sesotho at 5.1%, and isiNdebele at 4.8% (Census, 2022). Other languages are spoken by relatively smaller proportions of the population.

According to A substantial proportion of the population in the municipality is not economically active, with 63,301 individuals falling within this category (Table 5-3). This is followed by 35,249 unemployed residents, indicating a significant level of unemployment within the municipal area. In contrast, only 9,918 individuals are employed, while 6,787 persons are classified as discouraged work seekers (Stats SA, 2011)²⁵.

Table 5-3 – Govan Mbeki Employment Status

Employment Status	Numb ^{er}
Employed	9 918
Unemployed	35 249
Discouraged Work Seeker	6 787
Not Economically Active	63 301

According to the Govan Mbeki Local Municipality (2022 - 2027), the unemployment rate was recorded at 26.2%, which is below the national average of 32.7%. Youth unemployment remains a key concern, with a rate of 34.9%, exceeding the Mpumalanga provincial average of 33.5%, this highlights constrained access to employment opportunities, particularly among the youth, and underscores the need for targeted skills development and job creation initiatives within the municipality²⁴.

Sasol Secunda's Socio-economic context

The socio-economic baseline of the Sasol Secunda area is characterised by a population of approximately 310,000 people within the Govan Mbeki Local Municipality, with the majority of residents residing in the high-density township of eMbalenhle (**Figure 5-3**).

²⁴ Social Baseline Assessment. WSP, 2026

²⁵ Census 2022 employment data for Govan Mbeki Local Municipality is not currently available, as Statistics South Africa excluded labour market variables, including employment and unemployment indicator

Table 5-4 – Population Statistics for the Govan Mbeki Local Municipality

Indicator	Value
Total population (2022)	310,117 people
Number of households	126,894 households
Population growth rate	0.5% per annum
Average household size	3.0 persons

mfma-2023.agsareports.co.za

The population in this area are predominantly working-age, supporting labour-intensive industrial activities.

Table 5-5 – Population Age Statistics for the Govan Mbeki Local Municipality

Indicator	Value
0–14 years	25.4%
15–64 years	69.8%
65+ years	4.7%

municipalities.co.za

The majority of the local population reside in the eMbalenhle Township (Figure 5-25) with an estimated population size of 142-172 000 residents compared to that of Secunda Town with an estimated population size of 40 256 residents. Approximately 86% of residents in this area reside in formal dwellings with 13-29% in informal dwellings²⁶.

The labour market is influenced by the dominant petrochemical industry, although unemployment remains significant (26–34%), particularly among youth. Despite relatively high levels of service delivery in formal areas, more than half of the provincial population falls below the poverty line, indicating persistent inequality. The local economy is therefore highly dependent on industrial activity, with socio-economic vulnerability concentrated within lower-income communities²⁷.

²⁶ Municipalities.co.za

²⁷ mfma-2023.agsareports.co.za

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5.3.5 TRAFFIC

The primary national road within this area is the N17, which connects Gauteng, secunda and Ermelo. The secondary provincial roads are the R580, R546 and R547 which connect to Secunda, eMbalenhle, and Trichardt together with other surrounding mines, farm steads and industrial facilities.

The traffic baseline in the Secunda area is characterised by a mixed-use road network supporting both commuter and industrial activities. Traffic volumes are generally moderate, with higher volumes occurring along the N17 and key provincial routes. The presence of the Sasol petrochemical complex results in a relatively high proportion of heavy vehicle traffic, particularly along primary transport corridors. Traffic patterns are influenced by shift-based industrial operations and peak commuting periods between Secunda and eMbalenhle²⁸. While overall congestion levels are relatively low, localised pressure occurs at key access points and along commuter routes, with pedestrian safety and heavy vehicle interactions representing important baseline sensitivities.

5.3.6 HEALTH AND SAFETY RISK

The Secunda area forms part of the Mpumalanga Highveld Priority Area (HPA), which is nationally recognised for dense concentration of heavy industry (petrochemical, mining, power generation), elevated ambient air pollution levels, and possible associated public health risks. The region experiences frequent exceedances of air quality pollutants (PM_{2.5}, NO₂, SO₂) for which, long-term exposure is linked to increased mortality and respiratory disease incidence²⁹.

The health and safety baseline of the Secunda area is characterised by a high level of industrial influence, with air quality representing the primary risk driver to community health. The area forms part of the Highveld Priority Area, where elevated concentrations of particulate matter and associated pollutants have been linked to adverse respiratory and cardiovascular health outcomes. In addition, the presence of large-scale petrochemical operations introduces low-frequency, high-consequence risks related to fire, explosion, and chemical releases.

Occupational and traffic-related risks further contribute to the overall risk profile. While regulatory frameworks and industrial controls are in place, the cumulative exposure of nearby communities, particularly in eMbalenhle, results in a baseline environment of moderate-to-high health and safety sensitivity.

The baseline health status of exposed communities is a key factor in assessing potential health impacts. It is evaluated through a desktop review of available health data for the receptor area,

²⁸ Bruwer, 2017. 36th Southern African Transport Conference

²⁹ annalsofglobalhealth.org: Human Health Risk Assessment of PM_{2.5}, NO₂, and SO₂ and its Impact on Mortality in Nkangala and Gert Sibande, South Africa. 2025

which helps establish the underlying burden of disease for the RAHIA and identify specific health vulnerabilities that may influence impacts associated with the proposed operations.³⁰

For the general all-ages population, no consistent increase or decrease in health vulnerability is evident in the receptor communities when compared with Mpumalanga Province as a whole.

Comparisons between communities in the Gert Sibande and Nkangala districts show a mixed pattern of cardiovascular- and respiratory-related mortality causes. It is therefore not possible to conclude that one community is consistently more vulnerable than the other.

Provincial mortality data indicate increased vulnerability to the health effects of air pollution among older persons aged 65 years and above in the Sasol GtP receptor communities. A similar, but less extensive, pattern is evident among children younger than 15 years.³⁰

³⁰ Health assessment. INFOTOX, 2026

5.4 SITE SENSITIVITY VERIFICATION

Specialist assessments were conducted in accordance with the Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes, which were promulgated in Government Notice No. 320 of 20 March 2020 and in Government Notice No. 1150 of 30 October 2020 (i.e. “the Protocols”), or Appendix 6 of the EIA Regulations, depending on which legislation apply to the assessment under consideration.

A summary of the DFFE screening tool, the applicable legislation as well as the specialist sensitivity verification are detailed in **Table 5-6** below.

The complete Site Sensitivity Verification Report is included in **Appendix H**.

Table 5-6 - Assessment Protocols and Site Sensitivity Verifications

Specialist Assessment	Assessment Protocol	DFFE Screening Tool Sensitivity	Specialist Sensitivity Verification	Futher study required in Impact Phase
Agriculture Impact Assessment	Protocol for the specialist assessment and minimum report content requirements of environmental impacts on agricultural resources	High Sensitivity	Verified as Low sensitivity Appendix G.8	No
Landscape/Visual Impact Assessment	Site Sensitivity Verification Requirements where a specialist Assessment is required but no Specific Assessment Protocol has been prescribed	No sensitivity identified by the screening tool	Verified as Low sensitivity Appendix G.6	Yes
Archaeological and Cultural Heritage Impact Assessment	Site Sensitivity Verification Requirements where a specialist Assessment is required but no Specific Assessment Protocol has been prescribed	Low Sensitivity	Verified as Low sensitivity Appendix G.9	No
Palaeontology	Palaeontological Impact Assessment Required	Very High Sensitivity	Verified as Low sensitivity Appendix G.10	No
Terrestrial Biodiversity Impact Assessment	Protocol for the Specialist Assessment and Minimum Report Content Requirements	Very High Sensitivity	Verified as Medium to Low sensitivity Appendix G.3	Yes

Specialist Assessment	Assessment Protocol	DFFE Screening Tool Sensitivity	Specialist Sensitivity Verification	Futher study required in Impact Phase
Plant Species Assessment	for Environmental Impacts on Terrestrial Animal Species	Medium Sensitivity	Verified as Low sensitivity Appendix G.3	Yes
Animal Species Assessment		Medium Sensitivity	Verified as Low sensitivity Appendix G.3	Yes
Aquatic Biodiversity Impact Assessment	Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Aquatic Biodiversity	Very High Sensitivity	Verified as Very High sensitivity Appendix G.2	Yes
Traffic Impact Assessment	Protocol For The Specialist Assessment And Minimum Report Content Requirements For Environmental Impacts On Defence installations	No sensitivity identified by the screening tool	No sensitivity afforded at the time of scoping but traffic sensitivity at this stage presumed to be low, to be confirmed at impact assessment stage.	Yes
Climate Change Impact Assessment	Site Sensitivity Verification Requirements where a specialist Assessment is required but no Specific Assessment Protocol has been prescribed	No sensitivity identified by the screening tool	No sensitivity afforded at the time of scoping but climate change sensitivity at this stage presumed to be low, to be confirmed at impact assessment stage. Appendix G.5	Yes

Specialist Assessment	Assessment Protocol	DFFE Screening Tool Sensitivity	Specialist Sensitivity Verification	Futher study required in Impact Phase
Health Impact Assessment	Site Sensitivity Verification Requirements where a specialist Assessment is required but no Specific Assessment Protocol has been prescribed	No sensitivity identified by the screening tool	High sensitivity, to be confirmed at impact assessment phase Appendix G.11	Yes
Socio-economic Impact Assessment	Site Sensitivity Verification Requirements where a specialist Assessment is required but no Specific Assessment Protocol has been prescribed	No sensitivity identified by the screening tool	No sensitivity afforded at the time of scoping but social sensitivity at this stage is presumed to be low, to be confirmed at impact assessment stage. Appendix G.7	Yes
Geotechnical Impact Assessment	Site Sensitivity Verification Requirements where a specialist Assessment is required but no Specific Assessment Protocol has been prescribed	No sensitivity identified by the screening tool	Confirmed to be Low . Appendix G.1	No
Air Quality Impact Assessment	Site Sensitivity Verification Requirements where a specialist Assessment is required but no Specific Assessment Protocol has been prescribed	No sensitivity identified by the screening tool	Medium Sensitivity Appendix G.4	Yes

5.5 CONSOLIDATED SITE SENSITIVITY

The sensitivity input provided by specialists was utilised to compile a site sensitivity map (**Figure 5-26**). The aquatic environments associated with the pipeline routing have been identified as “highly sensitive”. The terrestrial habitat on the eastern side of the proposed LNG pipeline route has been afforded a “Medium sensitivity”. The map provides a “snap-shot” of the consolidated site sensitivities for the scoping phase, with the Secunda GtP Facility overlain. The desktop sensitivity inputs and findings from all of the appointed specialists have been combined and utilised to prepare this preliminary layout.

These sensitive areas identified will be utilised going forward into the EIA phase in order to plan and further refine the layout development to assess all sensitive areas and minimise the impacts of the proposed project.

Figure 5-26 – Secunda Gas to Power Facility Sensitivity map with proposed layout

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6 POTENTIAL IMPACTS

6.1 IDENTIFICATION OF POTENTIAL IMPACTS

The scoping phase of a S&EIR process is aimed to identify potential impacts that are most likely to be significant and which need to be assessed. The determination of anticipated impacts associated with the proposed development is a key component to the S&EIR process. This Chapter identifies the anticipated environmental and social impacts associated with the proposed project.

The issues identified stem from those aspects presented in Section 5: Description of Baseline Environment and the description of project components and phases as outlined in Section 3: Project Description. Each significant issue identified is to be investigated further during the S&EIR process. Non-significant issues will be scoped out of the study with reasonable consideration given within the Scoping Report.

6.1.1 SOILS, LAND CAPABILITY AND AGRICULTURAL POTENTIAL

The site has no current agricultural production potential due to the limitations of its location. The occupation of the site by the development cannot change its agricultural production potential. The development will therefore have zero agricultural impact⁷ and no further impact assessment of the soil or agricultural potential will be undertaken in the impact assessment phase.

6.1.2 TERRESTRIAL BIODIVERSITY

The following potential impacts have been identified for assessment:

Table 6-1 – Potential Terrestrial Impacts for further assessment

Impact	Description
Pre-construction phase	<ul style="list-style-type: none"> • Site surveys, • walkdowns, • movement of personnel and vehicles • Minor soil disturbance during surveys and investigations
Construction Phase Impacts	<ul style="list-style-type: none"> • Vegetation clearing <ul style="list-style-type: none"> • Associated with the LNG pipeline construction through natural habitat, • Associated with construction activities like vehicle and plant movement in natural areas, trench excavation, noise and vibration and increased human activity, • Grading and earth works in natural areas,
Operational Phase Impacts	<ul style="list-style-type: none"> • Spread of alien invasive species, through: <ul style="list-style-type: none"> • Disturbed soils • Routine operational inspection, associated with: <ul style="list-style-type: none"> • Maintenance activities,

Impact	Description
	<ul style="list-style-type: none"> Gas leaks, and Maintenance of the pipeline servitude.
Cumulative Impacts	<ul style="list-style-type: none"> No cumulative impacts were anticipated.
Mitigation Considerations	<ul style="list-style-type: none"> Mitigation measures will be presented at EIA phase.
Recommended EIA Phase Studies	<ul style="list-style-type: none"> Full Terrestrial Biodiversity study

Further assessment of the terrestrial biodiversity will be undertaken in the impact assessment phase.

6.1.3 VISUAL AND LANDSCAPE

The following potential impacts of the proposed Secunda GtP Facility on the visual landscape were identified for further assessment:

Table 6-2 – Potential Visual impacts identified for further assessment

Construction Phase Impacts	<ul style="list-style-type: none"> Presence of visually intrusive construction/decommissioning related activities and equipment in the landscape Airborne dust due to construction/decommissioning activities and resultant dust settling onto surrounding landscape
Operational Phase Impacts	<ul style="list-style-type: none"> Nominal reduction in visual resource value due presence of additional visually intrusive industrial project infrastructure in the landscape Minor additional light pollution at night due to safety and security lighting
Cumulative Impacts	<ul style="list-style-type: none"> No cumulative impacts are anticipated.
Mitigation Considerations	<ul style="list-style-type: none"> Reduction or avoidance of significant visual impacts
Recommended EIA Phase Studies	<ul style="list-style-type: none"> Desktop Visual Impact Assessment

6.1.4 HERITAGE

No potential impact to Cultural Heritage was identified³¹ and therefore, no further archaeological or cultural impact assessment will be undertaken in the impact assessment phase. A chance find protocol will be implemented as precaution for unplanned archaeological discovery during the construction phase.

6.1.5 PALAEOLOGY

No potential impact to Cultural Palaeontology was identified³² and therefore, no further palaeontological impact assessment will be undertaken in the impact assessment phase. A chance find protocol will be implemented as precaution for unexpected palaeontological discovery during the construction phase.

6.1.6 AQUATIC BIODIVERSITY

The following Aquatic Biodiversity impacts have been identified for assessment:

Figure 6-1 – Potential Aquatic Biodiversity impacts for further assessment

Impact	Description
Pre-construction phase	<ul style="list-style-type: none"> • Site surveys, walkdowns, movement of personnel and vehicles • Minor soil disturbance during surveys and investigations
Construction Phase Impacts	<ul style="list-style-type: none"> • Initial vegetation removal and surface disturbance may expose soils before stormwater controls are implemented. This could result in soil loss and sediment mobilisation into nearby wetlands or drainage systems. • Sedimentation and erosion from vegetation clearance, soil disturbance, excavation, stockpiling and stormwater runoff. • Water quality deterioration due to accidental spills, leaks, contaminated runoff, cementitious materials, or other construction-related pollutants entering nearby watercourses or wetlands. • Loss or disturbance of aquatic and riparian habitat through construction activities near wetlands, riparian zones or watercourse margins. • Impacts on aquatic biota, including macroinvertebrates and fish, through reduced habitat quality, altered water quality, sedimentation or flow changes
Operational Phase Impacts	<ul style="list-style-type: none"> • Ineffective stormwater management from operational areas may transport chemicals and sediments into adjacent drainage systems, resulting in water quality degradation in the Groot-Bossiespruit.

³¹ Artifactual Heritage Consulting, 2026.

³² Bamford, 2026

Impact	Description
	<ul style="list-style-type: none"> Increased impermeable surfaces associated with the facility may reduce infiltration and alter natural hydrological regimes by increasing runoff volumes. Routine maintenance activities may result in periodic disturbance to soils and vegetation and potentially lead to the establishment and spread of invasive plant species Accidental spills of chemicals may occur during operations, potentially contaminating soils, groundwater, and surface water systems
Cumulative Impacts	<ul style="list-style-type: none"> No cumulative impacts are anticipated.
Mitigation Considerations	<ul style="list-style-type: none"> Mitigation measures will be presented at EIA phase.
Recommended EIA Phase Studies	<ul style="list-style-type: none"> Full Aquatic Biodiversity study

6.1.7 TRAFFIC

The following traffic related impacts have been identified for assessment:

Figure 6-2 - Potential Traffic Impacts for Further assessment

Impact	Description
Construction Phase Impacts	<ul style="list-style-type: none"> Construction traffic
Operational Phase Impacts	<ul style="list-style-type: none"> Operational traffic
Cumulative impacts	<ul style="list-style-type: none"> No cumulative impacts are anticipated.
Mitigation Considerations	<ul style="list-style-type: none"> Mitigation measures will be presented at EIA phase.
Recommended EIA Phase Studies	<ul style="list-style-type: none"> Full Traffic impact assessment

6.1.8 CLIMATE CHANGE

The following climate change impacts have been identified for assessment:

Figure 6-2 - Potential Climate Change Impacts for further Assessment

Impact	Description
Construction Phase Impacts	<ul style="list-style-type: none"> Consideration of both acute and chronic climate risks, such as extreme weather events, temperature increases and changes in precipitation patterns, and their potential implications for Project infrastructure, operations and performance
Operational Phase Impacts	<ul style="list-style-type: none"> Consideration of both acute and chronic climate risks, such as extreme weather events, temperature increases and changes in precipitation patterns, and their potential implications for Project infrastructure, operations and performance
Cumulative Impacts	<ul style="list-style-type: none"> Potential cumulative climate-related impacts and risks will be evaluated during the detailed CCIA.
Mitigation Considerations	<ul style="list-style-type: none"> Adaptation and resilience measures will be developed during the detailed CCIA following assessment of climate-related risks.
Recommended EIA Phase Studies	<ul style="list-style-type: none"> Full Climate Change Impact Assessment

6.1.9 HEALTH

The following Health impacts have been identified for assessment:

Table 6-3 - Potential Health impacts identified for further assessment

Impact	Description
Construction Phase Impacts	<ul style="list-style-type: none"> Impacts of air emissions during construction phase
Operational Phase Impacts	<ul style="list-style-type: none"> Impacts of air emissions during operation for communities potentially affected by ambient air exposure to the criteria pollutants sulfur dioxide (SO₂), particulate matter (PM_{2.5}), carbon monoxide (CO) and nitrogen dioxide (NO₂).
Mitigation Considerations	<ul style="list-style-type: none"> Reduce anticipated air emissions to a level that won't contribute to significant air pollution and with resultant health effects.
Recommended EIA Phase Studies	<ul style="list-style-type: none"> Full Rapid Appraisal Health Impact Assessment

6.1.10 SOCIO-ECONOMIC

The following social impacts have been identified for assessment:

Table 6-4 - Potential Social impacts identified for further assessment

Impact	Description
Construction Phase Impacts	<ul style="list-style-type: none"> • Worker-community interaction and community cohesion • Dust and noise impacts • Employment and income generation • Traffic and road safety
Operational Phase Impacts	<ul style="list-style-type: none"> • Employment opportunity/ risk • Traffic impacts • Air quality and environmental perceptions
Cumulative Impacts	<ul style="list-style-type: none"> • Any cumulative impacts that are anticipated.
Mitigation Considerations	<ul style="list-style-type: none"> • Utilising local labour and skilled employment.
Recommended EIA Phase Studies	<ul style="list-style-type: none"> • Full Social impact assessment

6.1.11 GEOTECH

Based on WSP's SSVR geotechnical desktop study, the proposed Sasol GtP Facility site is suitable for the development of the proposed development. No geological sensitive areas are present within or around the site. No fatal flaws were identified during the site sensitivity verification reporting. A verified "Negative Very Low to Negative Low" impact was assessed, from a geotechnical perspective, for the pre-mitigation situation for the proposed facility. It is recommended that a detailed intrusive geotechnical investigation must be undertaken before construction to ascertain the subsurface horizons and the subsoil properties³³.

Therefore, no further desktop impact assessment will be undertaken in the impact phase of this S&EIA.

³³ Geotechnical Desktop Assessment. WSP, 2026

6.1.12 AIR QUALITY

The Air Quality Impact assessment will assess the following:

Figure 6-3 - Potential Air Quality impacts identified for further assessment

Impact	Description
Construction Phase Impacts	<ul style="list-style-type: none"> Impact the construction phase may have on the surrounding sensitive receptors
Operational Phase Impacts	<ul style="list-style-type: none"> Air Quality impact on surrounding sensitive receptors Forecasted modelling of air quality impacts from the proposed GtP Facility
Cumulative Impacts	<ul style="list-style-type: none"> Cumulative emission impact/ conditions.
Mitigation Considerations	<p>Construction Phase:</p> <ul style="list-style-type: none"> Modifying or ceasing loading activities during dry and high wind conditions. Avoid double handling of material, where possible. Using water carts with boom sprayers or wet suppression systems. When working near a potential sensitive receptor, limit the number of simultaneous activities to a minimum as far as possible. Implement dust management plan. Wet suppression and wind speed reduction are common methods used to control open dust sources at construction sites. <p>Operational phase:</p> <ul style="list-style-type: none"> Install low-NOx combustion technology where feasible. Conduct routine maintenance and inspection of combustion equipment. Ensure stack heights are designed to facilitate adequate dispersion. Implement operational monitoring and maintenance programmes. Ensure compliance with applicable emission standards and permit requirements. Optimise combustion efficiency through appropriate operational controls and maintenance practices. Minimise unplanned shutdowns, start-ups, and upset conditions that may result in elevated emissions. Ensure rapid detection and repair of gas leaks through regular inspection and leak detection programmes.
Recommended EIA Phase Studies	Full Air Quality Impact Assessment

Further impact assessment of the Air Quality impacts will be undertaken in the impact assessment phase

6.2 CUMULATIVE IMPACT ASSESSMENT

Although the objective of the NEMA S&EIR process is to undertake an impact and risk assessment process, inclusive of cumulative impacts, which is essential to assessing and managing the environmental and social impacts of projects, it may be insufficient for identifying and managing the incremental impacts on areas or resources used or directly affected by a given development from other existing, planned, or reasonably defined developments at the time the risks and impacts are identified.

IFC PS 1 recognizes that, in some instances, cumulative effects need to be considered in the identification and management of environmental and social impacts and risks. For private sector management of cumulative impacts, IFC considers good practice to be two pronged:

- Effective application of and adherence to the mitigation hierarchy in environmental and social management of the specific contributions by the project to the expected cumulative impacts; and
- Best efforts to engage in, enhance, and/or contribute to a multi-stakeholder, collaborative approach to implementing management actions that are beyond the capacity of an individual project proponent.

Even though Performance Standard 1 does not expressly require, or put the sole onus on, private sector clients to undertake a cumulative impact assessment (CIA), in paragraph 11 it states that the impact and risk identification process *“will take into account the findings and conclusions of related and applicable plans, studies, or assessments prepared by relevant government authorities or other parties that are directly related to the project and its area of influence” including “master economic development plans, country or regional plans, feasibility studies, alternatives analyses, and cumulative, regional, sectoral, or strategic environmental assessments where relevant.”*

Cumulative impacts are those that result from the successive, incremental, and/or combined effects of an action, project, or activity when added to other existing, planned, and/or reasonably anticipated future ones. For practical reasons, the identification and management of cumulative impacts are limited to those effects generally recognized as important on the basis of scientific concerns and/or concerns of affected communities (IFC GPH).

Evaluation of potential cumulative impacts is an integral element of an impact assessment. In reference to the scope for an impact assessment, IFC's Performance Standards specify that *“Risks and impacts will be analysed in the context of the project's area of influence. This area of influence encompasses...areas potentially impacted by cumulative impacts from further planned development of the project, any existing project or condition, and other project-related developments that are realistically defined at the time the Social and Environmental Assessment is undertaken; and (iv) areas potentially affected by impacts from unplanned but predictable developments caused by the project that may occur later or at a different location.”* (IFC 2006).

A cumulative impact assessment is the process of (a) analysing the potential impacts and risks of proposed developments in the context of the potential effects of other human activities and natural environmental and social external drivers on the chosen Valued Environmental and Social Components (VECs) over time, and (b) proposing concrete measures to avoid, reduce, or mitigate such cumulative impacts and risk to the extent possible (IFC GPH).

Cumulative impacts with existing and planned facilities may occur during construction and operation of the proposed Secunda GtP Facility. While one project may not have a significant negative impact on sensitive resources or receptors, the collective impact of the projects may increase the severity of the potential impacts. It is important to note that the existence of an approved EA does not directly equate to actual development of the project.

Potential cumulative impacts have been identified in Section 6.1 and summarised in **Table 6-3** below. Other planned or existing projects that can interact with the Project will be identified during stakeholder engagement and finalisation of the S&EIA process.

6.3 SUMMARY OF IMPACT SIGNIFICANCE SCREENING

This section presents an overview of the anticipated significance of the anticipated impacts (refer to Table 6-5). This has been used as a guide to determine whether additional assessment may be required in the EIA phase.

Table 6-5: Impacts that require no further impact assessment

Aspect	Impact	Significance (Before Mitigation)	Further Assessment Required
Soils, Land Capability and Agricultural Potential	None		
Heritage and Cultural Resources	None		
Palaeontology	None		
Geotech	None		

The impacts that require further assessment have been provided below:

Table 6-6 – Impacts that require further assessment

Aspect	Impact	Significance (Before Mitigation)	Further Assessment Required
Visual and Landscape	Presence of visually intrusive construction/decommissioning related activities and equipment in the landscape Airborne dust due to construction/decommissioning activities and resultant dust settling onto surrounding landscape Nominal reduction in visual resource value due presence of additional visually intrusive industrial project infrastructure in the landscape Minor additional light pollution at night due to safety and security lighting	Low	Yes
Terrestrial Biodiversity	Vegetation clearing associated with the pipeline construction	Medium	Yes
	Alien Invasive species establishment	Low	
	Operational maintenance	Low	
Aquatic Systems	Soil loss and sediment mobilisation	High	Yes
	Sedimentation and erosion	High	
	Water quality deterioration	High	
	Loss or disturbance of aquatic and riparian habitat	Medium	
	Gas leaks and impacts on aquatic biota	High	
Traffic	Traffic impact on the current traffic conditions in and around this area	Low	Yes
Climate Change	Consideration of both acute and chronic and cumulative climate risks, such as extreme weather events, temperature increases and changes in precipitation patterns, and their potential implications for Project infrastructure, operations and performance.	Medium	Yes

Aspect	Impact	Significance (Before Mitigation)	Further Assessment Required
Health	Potential cumulative climate-related impacts and risks will be evaluated during the detailed CCIA.	Medium	Yes
Social	Employment	27 Low (+)	Yes
Air Quality	Air Quality impact on surrounding sensitive receptors	27 Low	Yes

7 PLAN OF STUDY FOR EIA

7.1 PLAN OF STUDY FOR EIA - TERMS OF REFERENCE

Table 7-1: outlines the structure of the plan of study as required in terms of Annexure 2 of GNR 982.

Table 7-1: Plan of Study Requirements

Plan of Study Chapter	Information requirement as per GNR 982
Description of EIA Tasks	A description of the tasks that will be undertaken as part of the environmental impact assessment process.
Description of Alternatives	A description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity.
Aspects to be Assessed in the EIA Process	A description of the aspects to be assessed as part of the environmental impact assessment report process.
Specialist Studies	Aspects to be assessed by specialists.
Impact Assessment Methodology	A description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists. A description of the proposed method of assessing duration and significance.
Environmental Impact Report	Contents of EIAR as specified in GNR 982 (as amended) Annexure 2
Stakeholder and Authority Engagement	An indication of the stages at which the competent authority will be consulted. Particulars of the public participation process that will be conducted during the environmental impact assessment process.

7.2 OVERVIEW OF THE EIA PHASE TASKS

The Impact assessment phase will consist of a number of tasks; each of these tasks is detailed separately in the following sub-sections:

- Specialist studies;
- Continuation of authority and stakeholder engagement;
- Assessment of the significance of potential impacts (including cumulative impacts); and
- Preparation of the EIA Report.

7.3 DESCRIPTION OF ALTERNATIVES

The EIA process identifies two types of project alternatives:

- Concept Level Alternatives, which relate to the site, technology and process alternatives
- Detailed Level Alternatives, which relate to working methods and mitigation measures

The concept level alternatives will be assessed in the impact assessment phase of this assessment.

The feasibility of the higher-level concept alternatives have been considered and assessed within Section 3.5 of the DSR. The Detailed Level Alternatives will be addressed within the EIA Report.

7.4 SPECIALIST STUDIES TO BE UNDERTAKEN

The following specialist assessments are to be commissioned for the EIA Phase:

- Visual (including Landscape Impact Assessment)
- Terrestrial biodiversity Impact Assessment (Including Animal and Plant Species Themes);
- Aquatic Impact Assessment;
- Traffic Impact Assessment;
- Climate Change Impact Assessment
- Health Impact Assessment
- Social Impact Assessment
- Air Quality Impact Assessment

It should be noted that the specialist studies will be undertaken according to the procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of Sections 24(5)(a) and (h) and Section 44 of the NEMA (GNR 320, dated 20 March 2020 and GNR 1150, 30 October 2020), where applicable.

7.4.1 AGRICULTURE IMPACT STATEMENT

In compliance with NEMA's agricultural protocol, a soil and agricultural specialist has undertaken an assessment of the cropping potential based on a desktop investigation of the soils and agricultural conditions and informed by existing climate, soil, and agricultural potential data for the site. A site visit was not considered necessary. The significance of an agricultural impact was determined based on the three factors- agricultural production potential, particularly cropping potential, size of footprint, and duration of impact.

The proposed project **is not** anticipated to have any impact on the soil and agricultural potential in this area and therefore no further assessment is considered necessary to inform the impact phase⁷.

7.4.2 VISUAL IMPACT ASSESSMENT

The visual impact assessment (VIA) for the proposed Secunda Gas-to-Power (GtP) infrastructure will verify which project elements are likely to have the most prominent visual impact using layout plans, drawings, topographic maps and aerial imagery. It will undertake a high-level desktop visual baseline study of the site and surrounding area to understand existing biophysical and land-use

characteristics, identifying visual constraints and opportunities by classifying areas of very high/no-go, high, medium and low visual sensitivity.

The VIA will identify potentially affected visual receptors, review applicable legislation, policies and guidelines relevant to the VIA, evaluate the likely visual impacts of the proposed project components and activities within the existing industrial context and recommend appropriate mitigation measures where necessary.

7.4.3 HERITAGE AND PALAEOLOGY IMPACT ASSESSMENT

Using existing information sourced from various databases including the South African Heritage Resources Information System (SAHRIS), the PalaeoBio Database, historic aerial imagery from the NGI as well as available historic maps, a desktop analysis (conducted by a heritage and palaeontology specialist) has summarised the history of the subject area. This information has been used to describe the heritage significance of the subject area, and to identify and map heritage informants and constraints. The results of the desktop analysis were used to inform a site sensitivity report to determine if further study and assessment will be required.

Based on the “low” sensitivity of this site from desktop review, no further heritage or palaeontological impact assessment is foreseen to further inform the impact phase.

7.4.4 TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT

The terrestrial environment is deemed to have moderate sensitivity and significance (by a qualified terrestrial specialist). The following methodology will be undertaken to inform the impact assessment and S&EIR process. The baseline assessment will be followed by seasonally appropriate field surveys for both flora and fauna, including vegetation sampling in representative habitat units, habitat descriptions based on dominant species and disturbance patterns, and targeted field searches for species of conservation concern (SCC). For flora, the assessment would focus on identifying habitat units, mapping them, evaluating their ecological importance, and determining the likelihood of occurrence of SCC. For fauna, surveys will include opportunistic sightings, tracks, scats, burrows and active searches for reptiles and amphibians to understand on-site communities and identify or infer the likely presence of SCC. The findings from the desktop and field investigations will then be analysed and used to prepare baseline descriptions for the terrestrial biodiversity, plant species and animal species themes, which will inform the impact assessment. If the site is confirmed to have low sensitivity, the outputs will take the form of a combined Site Sensitivity Verification and compliance statement; however, if high or very high sensitivity habitats or species are confirmed, then further surveys and more detailed impact assessment and mitigation provision will be provided.

7.4.5 AQUATIC IMPACT ASSESSMENT

Based on the findings of the desktop assessment, site sensitivity verification and wet-season field survey, the project area is confirmed to be of Very High sensitivity for aquatic biodiversity. This includes wetlands, riparian zones and riverine ecosystems associated with the Groot-Bossiespruit. In accordance with the National Web-based Environmental Screening Tool and GN 320 protocols, a full Aquatic Biodiversity Specialist Assessment, inclusive of wetland and riverine components and suitable mitigation measures will be undertaken to support the environmental authorisation process.

7.4.6 DESKTOP TRAFFIC IMPACT ASSESSMENT

A detailed TIA will be undertaken to evaluate the traffic impact significance of the proposed project and mitigation of traffic in the different phases of this project.

7.4.7 CLIMATE CHANGE IMPACT ASSESSMENT

The baseline findings will inform the next phase of the CCIA, which will undertake a detailed evaluation of climate-related risks and associated adaptation measures for the Sasol GtP facility. The subsequent assessment will focus on:

- Evaluating the potential impacts of future climate conditions on facility design, operations, and performance.
- Identifying and assessing existing and planned adaptation measures to address key climate risks, including flooding, extreme heat, and other relevant hazards.
- Quantifying anticipated GHG emissions associated with the facility, limited to Scope 1 and Scope 2 emissions.
- Identifying and evaluating feasible GHG mitigation measures to support emissions management and improved operational efficiency.

7.4.8 HEALTH IMPACT ASSESSMENT

A comprehensive health risk assessment will be commissioned to assess and quantify the human health risk that the proposed project may have on the surrounding environment and communities. It will comprise of the following:

- Obtain modelled air concentrations of the pollutants of interest, expected in the identified receptor communities, from the final Air Quality Impact Assessment (“AQIA”).
- Conduct the human health risk assessment (“HHRA”) for the health effects associated with the pollutants of interest, based on the methods presented in Sections 5 and 7 of the specialist report (**Appendix G.11**).
- Conduct the health impact assessment by integrating the health baseline vulnerability assessment (see Section 3.3 of the specialist report) and the health risk results to be obtained from the planned HHRA.

7.4.9 SOCIO-ECONOMIC IMPACT ASSESSMENT

As an important “pillar” in environmental assessment, a social impact assessment will be undertaken to inform the impact phase of the S&EIR.

7.4.10 AIR QUALITY IMPACT ASSESSMENT

An Air Quality impact assessment inclusive of dispersion modelling and cumulative impact assessment, will be undertaken to inform the impact assessment phase of this S&EIR process.

7.5 IMPACT ASSESSMENT METHODOLOGY

The assessment of impacts and mitigation evaluates the likely extent and significance of the potential impacts on identified receptors and resources against defined assessment criteria, to develop and describe measures that will be taken to avoid, minimise or compensate for any adverse environmental impacts, to enhance positive impacts, and to report the significance of residual impacts that occur following mitigation.

The key objectives of the risk assessment methodology are to identify any additional potential environmental issues and associated impacts likely to arise from the proposed project, and to propose a significance ranking. Issues / aspects will be reviewed and ranked against a series of significance criteria to identify and record interactions between activities and aspects, and resources and receptors to provide a detailed discussion of impacts. The assessment considers direct,³⁴ indirect,³⁵ secondary³⁶ as well as cumulative³⁷ impacts.

A standard risk assessment methodology is used for the ranking of the identified environmental impacts pre-and post-mitigation (i.e., residual impact). The significance of environmental aspects is determined and ranked by considering the criteria³⁸ presented in **Table 7-2**.

Table 7-2: Impact Assessment Criteria and Scoring System

CRITERIA	SCORE 1	SCORE 2	SCORE 3	SCORE 4	SCORE 5
Impact Magnitude (M) The degree of alteration of the affected environmental receptor	Very low: No impact on processes	Low: Slight impact on processes	Medium: Processes continue but in a modified way	High: Processes temporarily cease	Very High: Permanent cessation of processes
Impact Extent (E) The geographical extent of the impact on a given environmental receptor	Site: Site only	Local: Inside activity area	Regional: Outside activity area	National: National scope or level	International: Across borders or boundaries
Impact Reversibility (R)	Reversible: Recovery		Recoverable: Recovery		Irreversible: Not possible

³⁴ Impacts that arise directly from activities that form an integral part of the Project.

³⁵ Impacts that arise indirectly from activities not explicitly forming part of the Project.

³⁶ Secondary or induced impacts caused by a change in the Project environment.

³⁷ Impacts are those impacts arising from the combination of multiple impacts from existing projects, the Project and/or future projects.

³⁸ The definitions given are for guidance only, and not all the definitions will apply to all the environmental receptors and resources being assessed. Impact significance was assessed with and without mitigation measures in place.

The ability of the environmental receptor to rehabilitate or restore after the activity has caused environmental change	without rehabilitation		with rehabilitation		despite action
Impact Duration (D) The length of permanence of the impact on the environmental receptor	Immediate: On impact	Short term: 0-5 years	Medium term: 5-15 years	Long term: Project life	Permanent: Indefinite
Probability of Occurrence (P) The likelihood of an impact occurring in the absence of pertinent environmental management measures or mitigation	Improbable	Low Probability	Probable	Highly Probability	Definite
Significance (S) is determined by combining the above criteria in the following formula:	$[S = (E + D + R + M) \times P]$ <i>Significance = (Extent + Duration + Reversibility + Magnitude) × Probability</i>				
IMPACT SIGNIFICANCE RATING					
Total Score	4-16	16-30	31-60	61-80	81-100
Significance Rating (Negative (-))	Very Low	Low	Moderate	High	Very high
Significance Rating (Positive (+))	Very low	Low	Moderate	High	Very high

7.5.1 IMPACT MITIGATION

The impact significance without mitigation measures will be assessed with the design controls in place. Impacts without mitigation measures in place are not representative of the proposed development's actual extent of impact and are included to facilitate understanding of how and why mitigation measures were identified. The residual impact is what remains following the application of mitigation and management measures and is thus the final level of impact associated with the development. Residual impacts also serve as the focus of management and monitoring activities during Project implementation to verify that actual impacts are the same as those predicted in this report.

The mitigation measures chosen are based on the mitigation sequence/hierarchy which allows for consideration of five (5) different levels, which include avoid/prevent, minimise, rehabilitate/restore, offset and no-go in that order. The mitigation sequence/hierarchy is shown in **Figure 7-1** below.

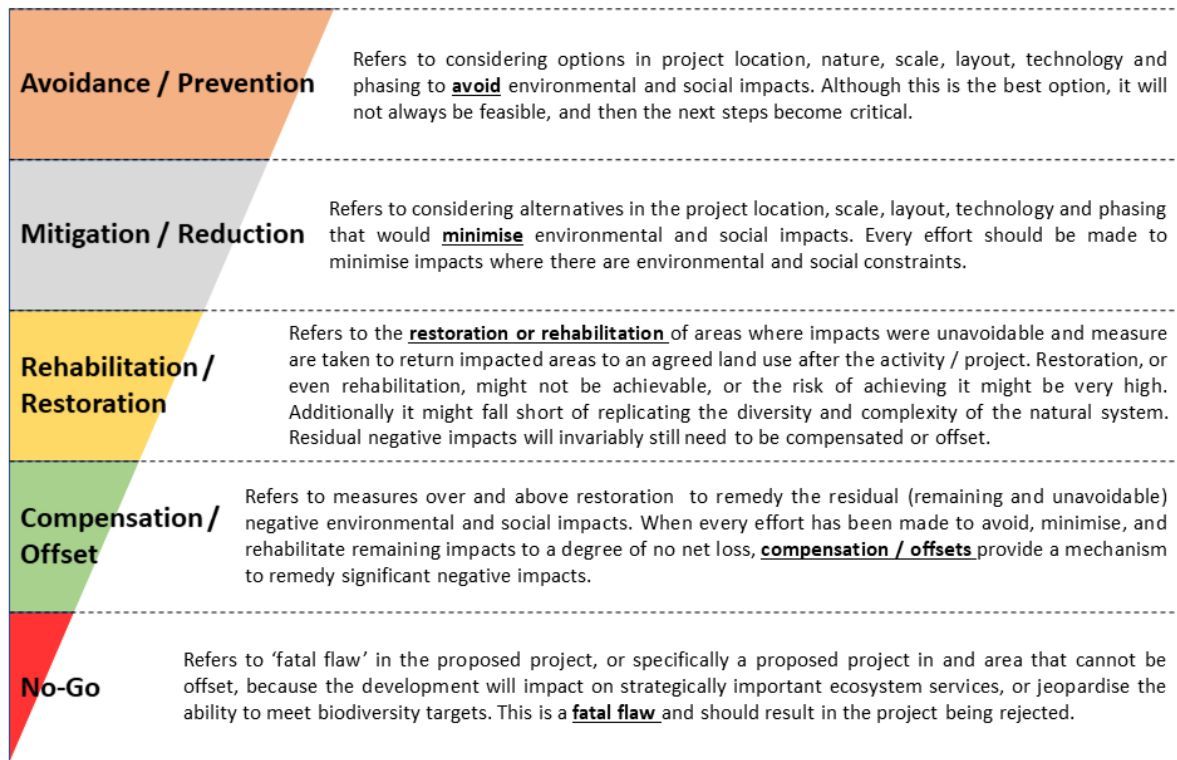


Figure 7-1: Mitigation Sequence/Hierarchy

The idea is that when project impacts are considered, the first option should be to avoid or prevent the impacts from occurring in the first place if possible, however, this is not always feasible. If this is not attainable, the impacts can be allowed, however they must be minimised as far as possible by considering reducing the footprint of the development for example so that little damage is encountered. If impacts are unavoidable, the next goal is to rehabilitate or restore the areas impacted back to their original form after project completion. Offsets are then considered if all the other measures described above fail to remedy high/significant residual negative impacts. If no offsets can be achieved on a potential impact, which results in full destruction of any ecosystem for example, the no-go option is considered so that another activity or location is considered in place of the original plan.

7.6 ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Once the FSR has been approved by the CA, the proposed project will proceed into detailed EIA phase, which involves the detailed specialist investigations.

WSP will produce a Draft EIAR after the completion of the required specialist studies. The Draft EIAR will provide an assessment of all the identified key issues and associated impacts from the Scoping phase. All requirements as contemplated in the EIA Regulations, 2014 (GNR 982, as amended) will be included in the Draft EIAR.

The Draft EIAR will contain, inter alia, the following:

- Details of the EAP who prepared the report and the expertise of the EAP to carry out the S&EIR process, including a curriculum vitae;
- The location of the activity, including the 21-digit Surveyor General code of each cadastral land parcel, where available, the physical address and farm name; and the coordinates of the boundary of the property or properties;
- A plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale;
- A description of the scope of the proposed activity, including all listed and specified activities triggered and being applied for; and a description of the associated structures and infrastructure related to the proposed project;
- A description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context;
- A motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred location;
- A motivation for the preferred development footprint within the approved site;
- A full description of the process followed to reach the proposed development footprint within the approved site;
- Details of the public participation process undertaken;
- A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;
- The environmental attributes associated with the development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;
- The impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts;
- The methodology used in determining and ranking of potential environmental impacts and risks;
- Positive and negative impacts;
- An assessment of each identified potentially significant impact and risk;
- The possible mitigation measures that could be applied;
- An environmental impact statement;
- A description of any assumptions, uncertainties and gaps in knowledge;
- A reasoned opinion as to whether the proposed activity should or should not be authorised;
- An undertaking under oath or affirmation by the EAP; and
- An EMP.

7.7 STAKEHOLDER AND AUTHORITY ENGAGEMENT

Stakeholder engagement during the EIA phase will focus on consultation with key stakeholders identified during the scoping phase which include amongst others, the DFFE, MDARDLEA and MTPA to address the issues raised during the scoping phase.

Thereafter the public participation will revolve around the review of the environmental impact assessment findings, which will be presented in the Draft EIA Report. All stakeholders will be notified of the progress to date and availability of the Draft EIA Report, via mail, email and/or SMS. A

legislated period of 30 consecutive days will be allowed for public comment. Reports will be made available in the following way:

- Distribution for comment at central public places, which were used during the Scoping phase;
- The document will be made available to download from the WSP Data free website; and

The EIA phase will provide the following information to I&APs:

- Initial Site Plan;
- Alternatives;
- A description of activities and operations to be undertaken;
- Baseline information;
- Specialist studies;
- Impact assessment;
- Management measures;
- Monitoring and measuring plan; and
- Rehabilitation requirements.

The information outlined above will be presented in one or more of the following:

- Notification emails, sms, adverts, and sign boards;
- Draft Scoping Report in hard and soft copy for public review;
- Draft EIA Report in hard and soft copy for public review; and
- EMPr.

All comments received during the EIA phase will be recorded in the comments and response section of the SER, which will be included in the draft and final EIA Reports. The final EIA Report will incorporate public comment received on the Draft EIA Report and will be made available for public review with hard copies distributed mainly to the authorities and key stakeholders.

All stakeholders will receive a letter notifying them of the authority's decision.

8 WAY FORWARD

This DSR contains:

- A description of the existing and proposed activities;
- A description of the alternatives considered to date;
- An outline of the proposed process to be followed;
- Information on the EAP and stakeholders who have chosen to participate in the project;
- An outline of the environment in which the project falls;
- Information on the potential environmental impacts to be studied in more detail during the EIAR phase of the project; and
- Information on the proposed specialist studies to be undertaken.

A number of environmental impacts have been identified as requiring some more in-depth investigation and the identification of detailed mitigation measures. Therefore, a detailed EIA is required to be undertaken in order to provide an assessment of these potential impacts and recommend appropriate mitigation measures.

WSP is of the opinion that the scoping report does not include sufficient information for the Competent Authority to make an informed decision at this stage.

The EAP's recommendation is that the DFFE accept the scoping report such that the EAP and specialists can further assess and mitigate the potential impacts, through consideration of biodiversity offsets, reducing the number of turbines and considering the addition of alternative technologies as well as through engaging with the relevant officials.

The recommendation of this report is that detailed specialist studies as outlined in Section 7.4 are undertaken.

This DSR will be available for review from **14 October 2026 to 16 November 2026**. All issues and comments submitted to WSP will be incorporated in the SER of the FSR.

The FSR will be submitted to the delegated competent authorities responsible for authorising this project.

If you have any further enquiries, please feel free to contact:

WSP Group Africa (Pty) Ltd

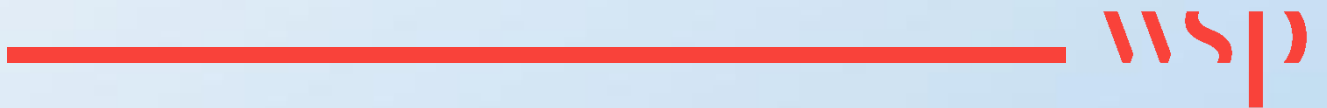
Attention: Rob Rowles

Tel: 011 361 1300

E-mail: pp@wsp.com

Appendix A

EAP CV





Appendix B

EAP DECLARATION





Appendix C

SPECIALIST DECLARATIONS





Appendix D

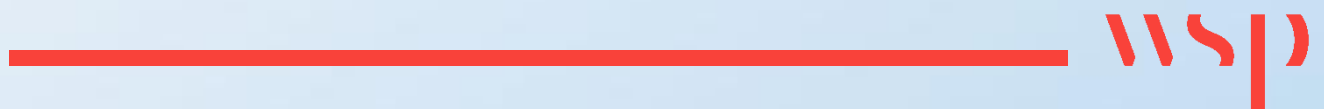
DFFE SCREENING REPORT





Appendix E

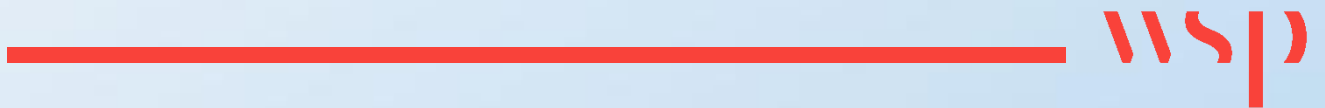
APPROVED PRE-APPLICATION MEETING MINUTES





Appendix F

PUBLIC PARTICIPATION DOCUMENTS





Appendix F.1

NEWSPAPER ADVERTS



Appendix F.2

SITE NOTICES



Appendix F.3

NOTIFICATION LETTERS



Appendix G

SPECIALIST REPORTS





Appendix G.1

GEOTECHNICAL SCOPING REPORT





Appendix G.2

AQUATIC SCOPING REPORT





Appendix G.3

TERRESTRIAL BIODIVERSITY (INCLUDING PLANT AND ANIMAL SPECIES) SCOPING REPORT





Appendix G.4

AIR QUALITY SCOPING REPORT



Appendix G.5

CLIMATE CHANGE SCOPING REPORT



Appendix G.6

VISUAL SCOPING REPORT





Appendix G.7

SOCIAL SCOPING REPORT





Appendix G.8

AGRICULTURAL SCOPING REPORT





Appendix G.9

ARCHAEOLOGY AND CULTURAL HERITAGE SCOPING REPORT





Appendix G.10

PALAEONTOLOGY SCOPING REPORT





Appendix G.11

HEALTH SCOPING REPORT



Appendix H

SITE SENSITIVITY VERIFICATION







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