

DRAFT

SCOPING REPORT FOR THE PROPOSED
DEVELOPMENT OF DNG ENERGY (PTY) LTD
BUSISIWE (COEGA 1- ALOE) GAS TO POWER
FACILITY AND ASSOCIATED
INFRASTRUCTURE IN COEGA SPECIAL
ECONOMIC ZONE WITHIN THE
JURISDICTION OF THE NELSON MANDELA
BAY METROPOLITAN MUNICIPALITY,
EASTERN CAPE PROVINCE

NSOVO REF: F010 - 20 – E

DEFF REF NO: 14/12/16/3/3/2/2061

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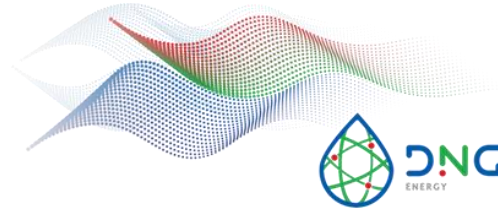
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PROVINCE**

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“From the world we live to the world we seek”

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"From the world we live to the world we seek "

DOCUMENT CONTROL

PROJECT TITLE:

DRAFT SCOPING REPORT FOR THE PROPOSED DEVELOPMENT OF DNG ENERGY (PTY) LTD BUSISIWE (COEGA 1- ALOE) GAS TO POWER FACILITY AND ASSOCIATED INFRASTRUCTURE IN COEGA WITHIN THE JURISDICTION OF NELSON MANDELA BAY METROPOLITAN MUNICIPALITY, EASTERN CAPE PROVINCE

QUALITY CONTROL:

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EXECUTIVE SUMMARY

The Department of Mineral Resources and Energy (DMRE) launched a Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP) on the 23rd of August 2020. The objective of the RMIPPPP is to fill the current short-term supply gap, alleviate the existing electricity supply constraints, and reduce the extensive utilisation of diesel-based peaking electrical generators. The Determination for the RMIPPPP was gazetted on the 7th of July 2020.

DNG Power Holdings Ltd proposes 1000MW Open Cycle Gas Turbine (OCGT) and/ or Reciprocating Engine power facility and associated infrastructure within the existing Coega Special Economic Zone (SEZ), which is situated approximately ± 10 km away from the Motherwell town and falls within the jurisdiction of Nelson Mandela Bay Metropolitan Municipality in the Eastern Cape province. The project shall be referred to as Busisiwe (Aloe) gas-to-power station and will operate at 1000 MW maximum capacity.

DNG Power has appointed Nsovo Environmental Consulting (hereafter referred to as Nsovo), as the independent environmental consultant, to undertake an Environmental Impact Assessment (EIA). The EIA process is being undertaken in accordance with the requirements of Appendix 2 of the NEMA EIA Regulations of 2014, as amended.

The proposed project entails development of the gas to power infrastructure (Generation) that will eventually connect to the Eskom Grid. DNG proposes the following activities and infrastructure:

- The development of a single point mooring with a Floating Storage Regasification Unit (FSRU).
- The undersea and inland gas pipe to connect to the power station.
- The construction of aboveground regasification and storage tanks with a capacity of 15X 20 tons (a total of 300 tons) in ISO containers and a bulk storage facility will be constructed
- Access road wider than 8 m to the development site will be used as both an access road during construction and a service road during the operational phase.
- The construction of approximately 4km 132 kV overhead powerline from the proposed power plant to the existing Delisa substation.
- A new 132/400kV step-up substation will also be required to connect the Busisiwe power station to the grid.

As indicated above, the proposed project activities include generation and transmission activities, i.e., energy generated at the proposed gas-to-power plant will eventually connect to the Eskom grid. Therefore, as per the grid agreements, the Customer (DNG Energy) shall, after successful commissioning, transfer full ownership of the self-built connection assets to the NTC, including all relevant environmental authorisations, approvals, and approved permits. Subsequently, the issue of the environmental authorisation will be according to Regulation 25 (2) of the EIA Regulation of 2014 as amended. Accordingly, DNG will be responsible constructing all activities listed above, while Eskom will be responsible for the operation and maintenance of the proposed grid connection infrastructure (400 kV powerlines and 132/400 kV step-up substation). In this case, a multiple environmental authorisation is required in the name of DNG Energy (Pty) Ltd and Eskom Holdings SOC Limited, covering all aspects for which authorisation is granted.

The Objective of the Scoping process as indicated in the EIA Regulations process is to, through a consultative process—

- (a) identify the relevant policies and legislation relevant to the activity;
- (b) motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- (c) identify and confirm the preferred activity and technology alternative through an identification of impacts and risks and ranking process of such impacts and risks;
- (d) identify and confirm the preferred site, through a detailed site selection process, which includes an identification of impacts and risks inclusive of identification 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
- (e) identify the key issues to be addressed in the assessment phase;
- (f) 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
- (g) 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.

Accordingly, the Scoping Report will be prepared in accordance with the requirements of Appendix 2 of the National Environmental Management Act (NEMA) EIA Regulations of 2014 as amended and it contains the following information:

- (a) The details and expertise of the Environmental Assessment Practitioner (EAP) who prepared the report;
- (b) The location of the proposed activities;

- (c) A plan which locates the proposed activities to be undertaken;
- (d) Description of the scope of the proposed project including the listed activities and the associated structures and infrastructures;
- (e) Description of policy and legislative content within which the development is located and an explanation of how the development complies with and responds to the legislation and policy context;
- (f) A motivation for the need and desirability of the proposed development;
- (g) A full description of the process followed to reach the proposed preferred activities, site, and proposed location of the development footprint within the site;
- (h) A plan of study for undertaking the EIA process to be undertaken; and
- (i) An undertaking under oath or affirmation by the EAP.

The Scoping phase entailed a detailed description of the baseline environment, which would form the backdrop of the impact assessment phase. Further, it allowed for the identification of critical issues and concerns based on input from the relevant stakeholders, interested and affected parties (I&APs), and the EAP's professional judgment based on experience and expertise in the field. Various alternatives for the gas-to-power facility and associated infrastructure, i.e., gas pipeline, transmission powerline, and the gas storage tanks on the preferred site were identified and assessed. The proposed construction of a gas-to-power facility will be undertaken as detailed in the DMRE IPPPP minimum requirements and the locations ide deemed preferable and most feasible for projects of this nature.

In considering the alternatives, various aspects are considered, and this may include the degree of sensitivity of the site, technical viability, and to a certain extent, the economic viability. The following alternatives associated with the proposed Busisiwe (Aloe) gas-to-power station have been identified for consideration within the EIA phase:

- **Storage and Regasification alternatives:** Three alternative have been identified and they include: Floating Storage and Regasification Unit (FSRU); Land based storage and regasification; and Gravity Float Unit. None of the above options are dismissed given that the gas space in South Africa is still in its teething stages, therefore as more information becomes available any of the options can become viable or be more lucrative compared to the other. Nonetheless, the process is considering the FSRU as the preferred for the purpose of this studies.
- **Technical**
 - **Power Generation technology:** DNG Power has considered various technology options including OCGT and Reciprocating Engine. From higher efficiency and lower costs to faster, cleaner, higher quality power generation, gas turbines have many advantages over reciprocating engines. Nonetheless, bot the alternatives will be assessed further during the EIA phase;
 - **Underground and above ground powerline:** Two technical alternatives have been identified for the proposed project, i.e., the overhead powerline and underground cabling. The use of underground

powerline alternative would not be the most feasible owing to the nature of the soil (sandy). Technically, underground cables need to be insulated against the surrounding soil. On low voltage reticulation networks (11kV & 22kV), the heat generated by the cable is low enough for standard insulation to be used; however, on larger power lines (i.e., 132kV as proposed), the method of electrical and heat insulation becomes more burdensome. As such, the use of the underground cabling therefore will not be assessed further during the EIA phase.

- **Structural alternatives:** The use Cross-Rope suspension type; Self-supporting type; and Guyed V towers. None of the above options have been dismissed and remain alternatives depending on the terrain and topography. Taking into consideration aspects such as visual; the selection of the pylons to be used for the proposed powerline will take the potential impacts into consideration.

Consequently, the EIA phase will assess the following alternatives:

- Floating Storage and Regasification Unit (FSRU)
- Open Cycle Gas Turbine
- Approximately 4km 132kV aboveground powerline
- A new 132/400kV step-up substation
- Structural alternatives (Cross-Rope suspension type; Self-supporting type; and Guyed V towers); and
- No Go Option.

The Draft Scoping Report will be made available to the Interested and Affected Parties (I&APs) as well as Organs of State for thirty (30) days for review and comment. All comments received will be included in the Comments and Response Report, which forms part of this report. The Plan of Study for the EIA is also incorporated in this report and will be submitted to the Competent Authority (CA) (the Department of Environment, Forestry and Fisheries (DEFF)) in terms of section 24C of the National Environmental Management Act (NEMA). The Scoping Report has been prepared as dictated by the Regulations and thus achieved the primary objectives as detailed above.

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LIST OF ACRONYMS AND ABBREVIATIONS

AEL	: Atmospheric Emission License
CARA	: Conservation of Agricultural Resources Act (43 of 1983)
CBA	: Critical Biodiversity Area
CCGT	: Combined Cycle Gas Turbines
CSEZ	: Coega Special Economic Zone
DEDEAT	: Department of Economic Development, Environmental Affairs and Tourism
DEFF	: Department of Environment, Forestry, and Fisheries
DHSWS	: Department of Human Settlement, Water, and Sanitation
DMRE	: Department of Mineral Resources and Energy
EA	: Environmental Authorisation
EAP	: Environmental Assessment Practitioner
EIA	: Environmental Impact Assessment
EIR	: Environmental Impact Report
EMPr	: Environmental Management Programme
ERA	: Electricity Regulation Act (4 of 2006)
FSRU	: Floating Storage Regasification Unit
GHG	: Greenhouse Gas Emissions
GNR	: Government Notice Regulations
GSA	: Gas Supply Agreement
HSA	: Hazardous Substances Act (56 of 1973)
I&APs	: Interested and Affected Parties
IDP	: Integrated Development Plan
SESEZ	: Special Economic Zone
IEA	: International Energy Agency

IEP	: Integrated Energy Plan
IPPPP	: Independent Power Producers Procurement Programme
IRP	: Integrated Resource Plan
LNG	: Liquefied Natural Gas
MW	: Megawatt
NDP	: National Development Plan
NEMA	: National Environmental Management Act, 1998 (Act 107 of 1998)
NEMAQA	: National Environmental Management: Air Quality Act (No. 39 of 2004)
NEMBA	: National Environmental Management: Biodiversity Act (No. 10 of 2004)
NEMICMA	: National Environmental Management: Integrated Coastal Management Act (No. 24 of 2008)
NEMPA	: National Environmental Management: Protected Areas Act (57 of 2003)
NEMWA	: National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NHRA	: National Heritage Resources Act (No. 25 of 1999)
NMBM	: Nelson Mandela Bay Municipality
NO2	: Nitrogen Oxides
NPA	: National Ports Act (12 of 2005)
NWA	: National Water Act, 1998 (Act No. 36 of 1998)
OCGE	: Open Cycle Gas Engine
OCGT	: Open Cycle Gas-Turbine
OHSA	: Occupational Health and Safety Act 85 of 1993
PPP	: Public Participation Process
RMIPPPP	: Risk Mitigation Independent Power Producer Procurement Programme
SAHRA	: South African Heritage Resources Agency
SANBI	: South African National Biodiversity Institute
ToR	: Terms of Reference
WULA	: Water Use Licence Application

1 INTRODUCTION AND BACKGROUND

According to the World Energy Outlook 2002, the International Energy Agency has projected that fossil fuels will remain the primary energy source, meeting more than 90% of the increase in energy demand by the year 2030. However, the demand for natural gas will rise more strongly than for any other fossil fuel; this is in concert with the increasing part that natural gas will play in South Africa (Independent EP, 2003). Natural gas is expected to play a central role in supporting Africa's drive to achieve electricity connection for nearly 600 million people without access to the grid, to reduce widespread reliance on coal for power generation, and to fast-track the continent's slowed industrial expansion. In support of the vision for the South African Gas to Power Programme, the Department of Mineral Resources and Energy (DMRE) has developed a Liquid Natural Gas (LNG) to Power Independent Power Producer Procurement Programme (IPPPP), which will serve as an anchor for the gas infrastructure required for the establishment of a gas market in the country.

The DMRE ("the Department") has proposed a 20-year Integrated Resource Plan (IRP) outlining a new power generation program to 2030. The program will use various renewable energies and natural gas to produce electricity. With 91.2% or 46,776 MW of its generation coming from coal-fired thermal power stations, South Africa has included in the IRP gas technology to generate 3,000 MW. The promulgation of the IRP 2019 and associated ministerial determinations guide the Independent Power Producers Procurement Programme (IPPPP).

The DMRE launched a Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP). The objective of the RMIPPPP is to fill the current short-term supply gap, alleviate the existing electricity supply constraints, and reduce the extensive utilisation of diesel-based peaking electrical generators.

DNG Energy proposes the development of the Busisiwe (Aloe) gas-to-power facility and associated infrastructure in Coega 1, within the jurisdiction of the Nelson Mandela Bay Metropolitan Municipality in the Eastern Cape Province. The project will be undertaken in line with the requirements of the National Environmental Management Act, 1998 (Act 107 of 1998 and associated EIA Regulations of 2014 as amended). The scope of the projects for the earmarked areas will include:

- LNG procurement and delivery;
- LNG storage and regasification facilities via a Floating Storage Regasification Unit (FSRU) (or equivalent LNG regasification and storage technology);
- Port infrastructure, including fixed maritime structures and modifications;
- Gas transmission pipelines to connect the FSRU (or equivalent LNG regasification and storage technology) with the new power generation facility;
- LNG and or gas distribution hub(s) for the third party off-take;

- Power plant, including the high voltage connection to the electrical grid; and
- Arrangements for independent delivery of LNG, and the sale of a modest percentage of gas and LNG to external users.

1.1 PROJECT OVERVIEW

It is envisaged that LNG will be supplied by ship to the Port of Ngqura, where it will likely be offloaded to a Floating Storage Regasification Unit (FSRU). The FSRU will regasify the LNG and pump it via a subsea pipeline to the proposed 1000 MV power station, where it will be transported via a pipeline on land to the Gas-to-Power Station (GPS). From the power station, it will be transmitted via a 4km 132kV transmission powerline to the existing 400/132kV Dedisa substation, further, a new 132/400kV step-up substation will also be required from the Busisiwe power station.

Based on the scope of work, the technology options of the proposed development entail using a gas turbine. DNG Power proposes to commence operation at 1000 MW capacity using an Open Cycle Gas Turbine (OCGT), reciprocating engine as well as a Closed Cycle Gas Turbine (CCGT). The difference between OCGT and CCGT is that the latter uses a cycle configuration of combustion turbines, heat recovery steam generators, and steam turbines, to produce electricity. Another technology such as the reciprocating engine is also being considered.

The proposed project entails development of the gas to power infrastructure (Generation) that will eventually connect to the Eskom Grid. DNG proposes the following activities and infrastructure:

- The development of a single point mooring with a Floating Storage Regasification Unit (FSRU).
- The undersea and inland gas pipe to connect to the power station.
- The construction of aboveground regasification and storage tanks with a capacity of (a total of 24000m³) in ISO containers and a bulk storage facility will be constructed
- Access road wider than 8 m to the development site will be used as both an access road during construction and a service road during the operational phase.
- The construction of approximately 4km 132 kV overhead powerline from the proposed power plant to the existing Delisa substation.
- A new 132/400kV step-up substation to connect the Busisiwe power station to the grid.

This scope of work entails the construction of infrastructure to connect to the Eskom. In line with Eskom's minimum requirements, DNG will be responsible for the construction and Eskom will be responsible for operation and maintenance of the proposed infrastructure.

There is a similar project proposed (namely, DNG Energy Coega Site 2) within the same study area by the same applicant. These two projects will share the FSRU and subsea pipeline to transport natural gas to their different proposed power stations as they are proposed close to each other. They will also share the powerline to transfer power to the Dedisa substation. The main reason for sharing such infrastructure is to avoid the development of the same infrastructure which will increase the environmental impacts in the same area.

The proposed development triggers listed activities and an Environmental Impact Assessment (EIA) process must be undertaken in accordance with the EIA Regulations, 2014 (promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), as amended in April 2017. Further, a Water Use Licence Application (WULA) in terms of the National Water Act, 1998 (Act No. 36 of 1998) (NWA) will be obtained from the Department of Human Settlement, Water and Sanitation (DHSWS). Subsequently, Nsovo is the independent consultant appointed by DNG Power responsible for the necessary authorisation and licencing processes to comply with the requirement of the legislation. The project proponent is DNG Power Holdings Ltd., whereas the Competent Authority is the Department of Environment, Forestry, and Fisheries (DEFF).

The proposed project also triggers the listed activities in terms of Section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (NEM: AQA) as amended and Section 21 listed activities in terms of the National Water Act, 1998 (Act 36 of 1998) (NWA). The AEL and WUL application processes are underway, and their licences will be obtained from the DEFF and DHSWS, respectively.

2 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

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

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

Table 1 below provides Details of the EAP and relevant experience. A detailed CV and Qualifications are attached as **Appendix C**.

Table 1: Details of the Environmental Assessment Practitioner (EAP)

Name of Company	Nsovo Environmental Consulting
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Person Responsible	Munyadziwa Rikhotso
Professional Registration	South African Council for Natural Scientific Professions (SACNASP)
Postal Address	Private Bag x29 Postnet Suite 697 Gallo Manor 2052
Telephone Number	011 041 3689
Fax Number	086 602 8821
Email	munyadzi@nsovo.co.za
Qualifications & Experience	B.Sc. Honours Geography 17 years of experience
Project Related Expertise	<p>In terms of project related expertise, the Environmental Assessment Practitioner has completed the following projects:</p> <ul style="list-style-type: none"> • EIA for the proposed Maphutha-Witkop powerline in Limpopo Province. • EIA for the proposed Shongweni substation and Hector - Shongweni 400kV powerline in Kwazulu Natal Province. • EIA for the proposed Inyaninga substation and Inyaninga – Mbewu 400kV powerline in Kwazulu Natal Province. • EIA for the proposed Tubatse strengthening phase 1 – Senakangwedi B integration within the jurisdiction of Greater Tubatse Local Municipality in Limpopo Province. • EMPr, WULA and EA amendment for the proposed Juno Gromis 400kV power line • Basic Assessment for the proposed Decommissioning and Demolition of Verwoedberg Substation and 275kV power. • Basic Assessment for Bloemendal Substation and loop in and out lines.

2.1 DETAILS OF THE APPLICANT

DNG Power is a company that operates in the renewable energy space and has been operating since 2013. It has been responsible for bringing Liquefied Natural Gas (LNG) to South Africa, and in doing so, is producing a cleaner, more affordable fuel alternative available to the market. The client details are included in Table 2 below.

Table 2: Details of the Applicant

Name of Company	DNG Power Holdings Ltd
Project Name	Aloe (Busisiwe)
Project Reference	D—1157
Physical Address	27 Fricker Rd Illovo 2196
Postal Address	P O Box 783451 Sandton 2146
Contact Person	Aldworth Mbalati
Email	aldworth@dng.energy
Project Manager	Elmar Keusgen
Email	elmar@dng.energy
Telephone Number	010 880 2935

3 DESCRIPTION OF LOCALITY AND THE PROPERTY ON WHICH THE ACTIVITY IS TO BE UNDERTAKEN AND LOCATION OF ACTIVITY ON THE PROPERTY

This section provides detailed information on the location of the proposed project which aims at providing the environmental aspects found within the area of the proposed development and provide the baseline description of the surroundings.

3.1 LOCALITY OF THE PROPOSED PROJECT

The proposed site is located within the integrated Port of Ngqura and Coega Special Economic Zone (SEZ) situated approximately 10km east of Motherwell and 12.6km north-west of Port Elizabeth within Nelson Mandela Bay Metropolitan Municipality in the Eastern Cape Province. The Coega Industrial Development Area is divided into different

zones, and the proposed project will be undertaken within Zone 7, 8, and 10, which will host the gas to power facility. The project will also traverse Zone 9 through the development of the powerline to the existing Dedisa substation. Figure 1 below is a locality map that depicts the proposed study area at a scale of 1:50 000. Refer to **Appendix A** for the A3 locality and sensitivity map

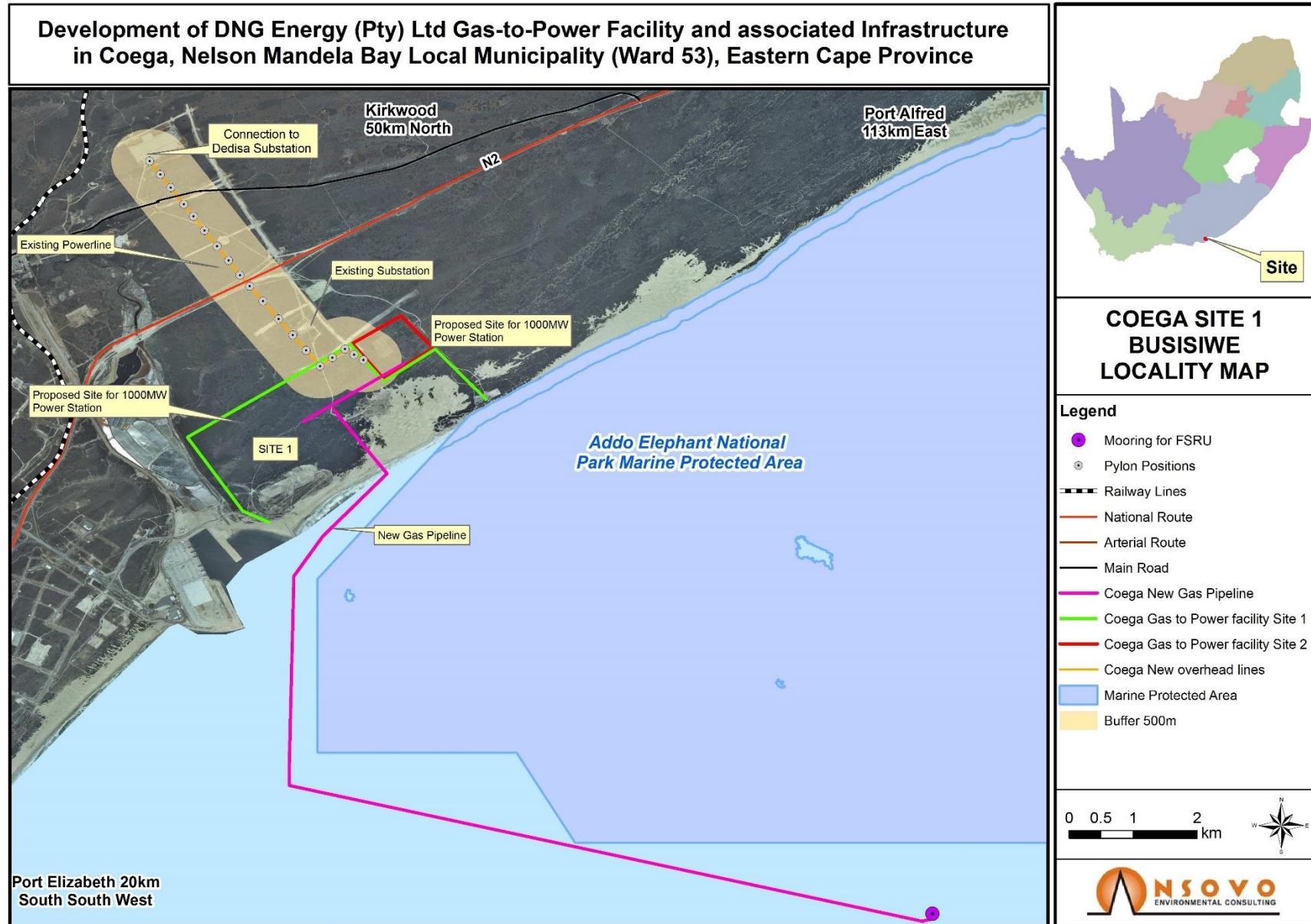


Figure 1: Locality map showing the proposed DNG Power Proposed activities within the Study Area

3.1.1 PROVINCE AND PROVINCIAL BOUNDARIES

The proposed development is in the Eastern Cape Province in the east coast of South Africa between the Western Cape and KwaZulu-Natal provinces.

3.1.2 MUNICIPALITY AND WARD

The proposed development is located within Municipal Ward Number 53 of the Nelson Mandela Bay Metropolitan Municipality (NMBA), which is a Category A municipality in the Eastern Cape Province. This municipality is located on the south-eastern coast of Africa. It is the economic powerhouse of the Eastern Cape Province and one of eight metropolitan areas in the country. Its boundaries are formed by Cassie Mountain View in the north, Cape Recife in the south, Sundays River Mouth in the east, and Van Stadens River Mouth in the west.

3.2 DESCRIPTION OF THE AFFECTED PROPERTIES

The proposed development of the Coega 1 Busisiwe (Aloe) GPS and associated infrastructure will be within the properties listed in Table 3.

Table 3: Details of the affected site properties

Farm name	Parcel Number	SG Codes
Coega River Mouth 303	251	C07600230000025100000
	255	C07600230000025500000
	302	C07600230000030200000
	312	C07600230000031200000
Hougham Park 304	351	C07600230000035100000
Swart Koppen 302	342	C07600230000034200000
	344	C07600230000034400000
The Aloes 220	329	C07600230000032900000

3.3 LAND USES WITHIN AND AROUND THE SITE

This section describes the land uses within and around the Coega SEZ, which includes infrastructure, harbour facilities, industrial, and commercially developed land.

3.3.1 RESIDENTIAL

The residential communities located close to the proposed development includes semi-suburban (i.e., Motherwell township), as well as suburban households. Motherwell is the nearest town situated approximately 10km east of the

study area. Motherwell has several public schools, both at the primary and secondary levels. It also has a clinic, a day hospital, a library, numerous public parks, and community centres.

Table 4: Residential around the study area

Community	Description
Motherwell	Motherwell is a sprawling and underdeveloped urban settlement located approximately 8 kilometres from the proposed site. It has been in existence since the 1980s to accommodate mostly isi-Xhosa-speaking people from informal and illegal dwellings built on the flood plains in Soweto-on-Sea.
Port Elizabeth	The proposed site is situated 10km northwest of Port Elizabeth (PE). PE is located on the southeastern coast of South Africa and the western portion of Algoa Bay, adjacent to the Indian Ocean. Further, PE is a major seaport city and the most populous city in the Eastern Cape province of South Africa.

3.3.2 COMMERCIAL AND INDUSTRIAL

The main economic sectors within the Nelson Mandela Bay Metropolitan Municipality are presented in **Table 5** below. These include community services, finance, manufacturing, transport, and trade.

Table 5: Main economic sectors (Integrated Development Plan (IDP), 2017)

Sector	Percentage Contribution
Community services	23%
Finance and business	23%
Manufacturing	25.0%
Transport	13%
Trade	13%

3.3.3 SURFACE INFRASTRUCTURE

This section describes the surface infrastructures within the study area, including the description of the road network, existing substations, and powerlines.

3.3.3.1 Road Network

The site is bordering the N2, a national route in South Africa that runs from Cape Town through Port Elizabeth, East London, and Durban to Ermelo. It is the main highway along the Indian Ocean coast of the country. Its total distance of 2,255 km (1,401 mi) makes it the longest numbered route in South Africa.

The proposed site is accessed through Regional Road (R335) from Motherwell and Port Elizabeth, which joins the N2 towards the eastern direction to Coega Special Economic Zone that can also be accessed through the Neptune Road from the N2.

However, where there is no access, roads may need to be established. Further, the proposed project will require secondary access that will be developed as part of the project scope, and this will include:

- Service road for construction and maintenance of the 132 kV powerline, the gas pipeline, and access to the power plant.
- The proposed service road will be approximately 6-8m wide alongside the proposed infrastructure.

3.3.3.2 Powerlines and associated Infrastructure

Table 6: Start, middle and end point of the proposed powerline

Coordinates Points	Proposed 132kV powerline	
	Latitude	Longitude
Start point	33°46'25.23"S	25°41'57.11"E
Middle point	33°45'29.95"S	25°41'12.88"E
End	33°44'38.04"S	25°40'32.88"E

During the site visit, it was noted that there is an existing Eskom 400kV powerline traversing proposed zones of interest and a wind farm near the study area. Figure 2. Shows the existing powerline.



Figure 2: Existing 400kV powerline within the proposed location (Zone 7, 8 and 10) (Nsovo Site visit, 2020)

3.3.3.3 Harbour facility

The proposed site is situated within the Coega Special Economic Zone (CSEZ). There is the Port of Ngqura situated on the western part of the proposed site and is being used for commercial purposes. The CSEZ provides the back-of-port facilities and infrastructure to the deep-water Port of Ngqura. This makes for seamless integration between landside and marine infrastructure resulting in logistical and operational efficiency. The Deepwater Port of Ngqura provides a vital conduit to international markets. This Deepwater port offers global container shipping and other world-class port facilities to businesses situated in the adjacent Coega Special Economic Zone and beyond.

4 A PLAN WHICH LOCATES THE PROPOSED ACTIVITY OR ACTIVITIES APPLIED FOR AT AN APPROPRIATE SCALE

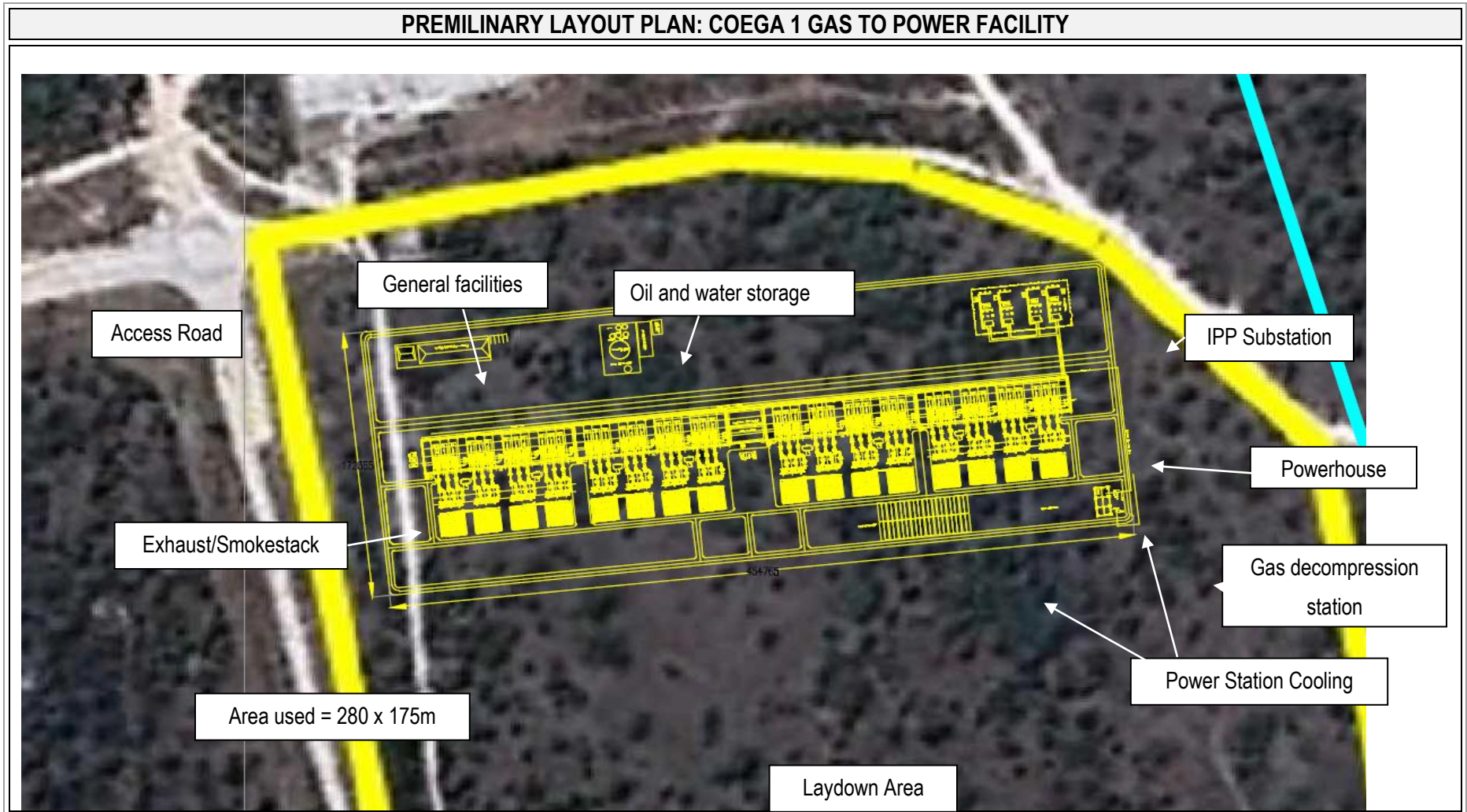


Figure 3: The layout plan with the proposed activities

5 DESCRIPTION OF THE PROPOSED ACTIVITIES

This section describes the proposed activities, which include the scope of the proposed project, mainly focusing on the listed activities which trigger the EIA process.

5.1 BACKGROUND AND THE PROPOSED SCOPE OF WORK

DNG Energy proposes to undertake the following activities:

- The development of a single point mooring with a Floating Storage Regasification Unit (FSRU).
- The undersea and inland gas pipe to connect to the power station.
- The construction of aboveground regasification and storage tanks with a capacity of 15X 20 tons (a total of 300 tons) in ISO containers and a bulk storage facility will be constructed
- Access road wider than 8 m to the development site will be used as both an access road during construction and a service road during the operational phase.
- The construction of approximately 4km 132 kV overhead powerline from the proposed power plant to the existing Delisa substation.

5.1.1 ACTIVITIES ASSOCIATED WITH THE PROJECT

The construction phase of the proposed project would take approximately 18 months, and the activities to be undertaken are indicated on the map below and discussed hereunder. The general surface areas for the project components listed in Table 8 below

Table 7: The general surface for the project components

Project component	Area/length/Size	Servitude	Purpose
FSRU	Unknown	Unknown	A modified LNG vessel that combines LNG shipping, storage, and regasification on one ocean going vessel. It includes all the components needed to offload gas (storage, regasification, offloading terminal, buoy, and

Project component	Area/length/Size	Servitude	Purpose
			mooring System) using a subsea pipeline.
Power Plant	5.2 km ²	N/A	Generation of electricity using the OCGT, CCGT or Reciprocating Engines
Subsea Gas pipeline	10km	36 m	Transportation of gas from the FSRU to the power plant.
Underground pipeline	1.5	36 m	Transportation of gas from the FSRU to the power plant.
132kV overhead transmission line	4 km	31m	For connection to the existing Dedisa substation.
132/400 kV step up substation	Unknown	Unknown	To connect proposed gas-to-power facility to the grid.
Access/Service road	5 km	8 m	To access the site during construction and as a service road during the operational phase.

Table 8: Activities of the construction phase

Activity	FSRU	Gas Pipeline	Power Plant Facility	Distribution Powerline	Access road
Site Walk down	Detailed marine and submarine specialist assessments to determine sensitivities.	Site walk down along the pipeline corridor to determine sensitivities and mark areas of sensitivity as no go.	Site walk about to determine sensitivities and create buffers around sensitive environments.	Site walk down along the pipeline to determine sensitivities and create buffers.	Site walk down along the route alignment to determine sensitivities and mark areas of sensitivity as no go.
Vegetation clearance	Consideration of marine sensitive species by a marine biodiversity specialist.	Vegetation clearance of the 36 m wide servitude over a 2km distance.	Vegetation clearance of a 41125 m ² footprint.	Vegetation clearance of tower foundation footings along the 31 m wide servitude over a 4km distance.	Vegetation clearance of the 8m wide corridor
Excavation of foundations	Preparation of the FSRU via infilling and depositing of material or dredging to Moore the barge.	Excavation of trenches via directional drilling or alternative technologies and concrete work.	Excavation of foundations for the plant and concrete work.	Excavation of foundations for the towers and minor amendment at the substation.	
Civil works	Construction of the FSRU	Installation and laying the pipeline.	Associated civil works for the power plant.	Construction of the steel structures.	The civil works will entail the preparation of drainage channels on the access road(s).
Technical /Mechanical	Mechanical activities to prepare for the operation.	Mechanical activities to prepare for the operation.	Mechanical activities to prepare for the operation.	Stringing and energizing the powerline.	

Activity	FSRU	Gas Pipeline	Power Plant Facility	Distribution Powerline	Access road
Rehabilitation	Rehabilitation and removal of excess material post construction.	Rehabilitation of servitude and encouraging plant growth.	-	Rehabilitation of servitude and encouraging plant growth.	Rehabilitation and removal of excess material post construction and continuous maintenance of the service road.

The proposed development will ultimately include the construction and assembly of the following associated infrastructure as indicated in the flow diagram below (Figure 4):

- Gas turbines and Reciprocating Engines;
- Heat recovery steam generators;
- Dry cooling radiator systems;
- Water tanks for water required for the cooling process;
- Building infrastructure which will include, but not limited to plant operational and maintenance building, ablution facilities, and offices;
- Transmission powerline from the proposed Busisiwe (Aloe) gas-to-power facility to the existing Delisa substation, and
- Fencing to maximize the security of the plant.

The section below presents grammatic photographs of the proposed infrastructure and further provide the flow diagram of the proposed activities. The activities in the sea will include the following:

- 1 – Receiving LNG stored in an LNG carrier
- 2 – Storage of LNG in a Floating Storage Regasification Unit Vessel
- 3 – Regasified natural gas will be sent through a subsea pipeline to the power station

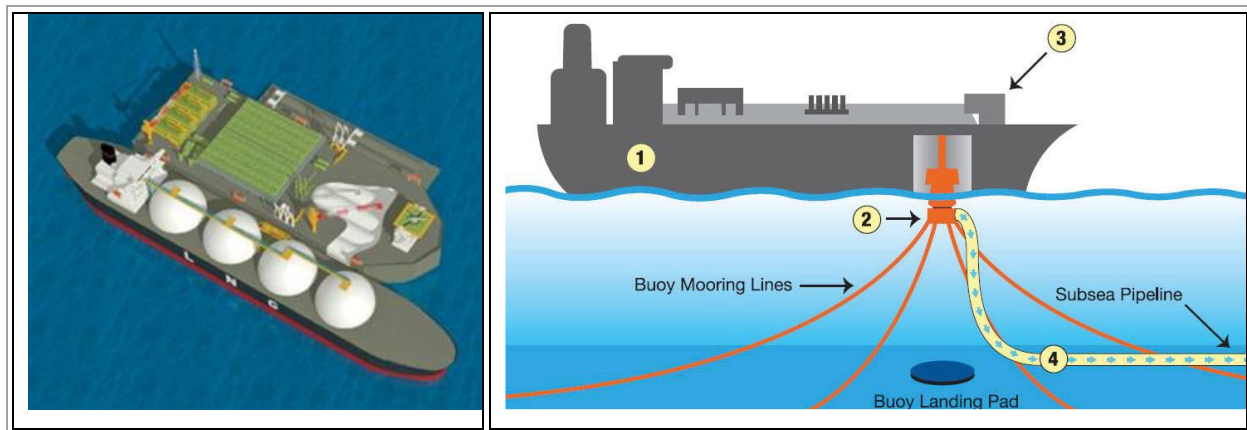


Figure 4: Grammatic representation of the FSRU and the subsea pipeline (<https://www.marineinsight.com/types-of-ships/what-is-floating-storage-regasification-unit-fsru/>, accessed on the 03 December 2020 at 20:06)

5.1.1.1 Site walk-down

The primary aim of the walk-down survey is to ensure that identified sensitive areas are avoided, and buffer zones are created for conservation purposes. This exercise will ensure that the development poses the least impact on sensitive environments.

5.1.1.2 Access roads

The proposed development site is accessed through Regional Road (R335) from the Motherwell and Port Elizabeth, which joins the N2 towards the eastern direction to Coega Special Economic Zone. The Coega Special Economic Zone can also be accessed through Neptune Road from the N2.

However, where there is no access, roads may need to be established. Further, the proposed project will require secondary access that will be developed as part of the project scope, and this will include:

- Service road for construction and maintenance of the 132kV powerline, the gas pipeline as well as access to the power plant.
- The proposed service road will be approximately 6-8m wide alongside the proposed infrastructure (i.e., gas pipeline).

There are activities already taking place within the SEZ, as seen from Figures 6 and 7.



Figure 5: Access road (N2) to the Coega Special Economic Zone (SEZ) (site visit, 2020)



Figure 6: Existing road within the proposed study area

5.1.1.3 Vegetation clearance

Approximately **41125m²** footprint is required for the proposed gas-to-power facility and associated infrastructure, and only the immediate footprint within the study area will be cleared for construction. Further, clearance will be required for the proposed powerline (31m wide servitude) and pipeline (36m wide servitude) and it will be undertaken in accordance with the approved Environmental Management Programme (EMPr), permits, licences, Municipal by-laws, as well as DNG Energy's policies and guidelines.

5.1.2 CONSTRUCTION OF THE BUSISIWE (ALOE) GAS-TO-POWER FACILITY AND ASSOCIATED INFRASTRUCTURE

The applicant proposes to commence operation at 1000 MW using OCTG and/ or reciprocating engine. The proposed project will ultimately include the development of the following associated infrastructure:

- A gas pipeline which will connect with the proposed Busisiwe gas-to-power plant;
- Building infrastructure which will include, but not limited to plant operations and maintenance building, ablution facilities, and offices;
- The development of a subsea gas pipeline from FSRU to the power plant;
- Development of 132kV powerline from the power plant to the existing Delisa substation; and
- Above ground gas storage tanks.

5.1.3 REHABILITATION

Upon completion of construction work, the site will be rehabilitated as per the specifications of the EMP, approved Method Statements, and will meet the requirements of the Closure and Rehabilitation Plan. The rehabilitation activities will include:

- Removal of excess building material and waste;
- Repairing any damage caused by construction activities;
- Rehabilitating any area affected by engineering activities undertaken during construction of the proposed facility and its associated infrastructure;
- Reinstating damaged roads as the result of either construction vehicles, or any construction work related to the development of the Busisiwe (Aloe) gas-to-power plant; and
- Replacing topsoil and planting indigenous vegetation where necessary.

The proposed activities are activities that may not commence without Environmental Authorisation from the Competent Authorities as they trigger listed activities under NEMA, EIA Regulations of 2014 as amended. The listed activities are detailed.

5.2 LISTED ACTIVITIES APPLICABLE TO THE PROJECT

The proposed development triggers listed activities in terms of 2014 EIA Regulations as amended, National Environmental Management: Waste Act, 2008 (Act 59 of 2008), and National Water Act, 1998 (Act 36 of 1998). The listed activities applicable are briefly described in Table 10 below:

Table 9: Listed activities applicable to the project

Listed activity (No)	Listed activities	Activity/Project description
Applicable Activities Listed Under Environmental Impact Assessment Regulations, 2014 as amended Listing Notice 1		
GNR 983 Activity 11	<i>The development of facilities or infrastructure for the transmission and distribution of electricity— (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.</i>	The proposed project entails the development of the new 132/400kV step-up substation.
GNR 983 Activity 19A	<i>“The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from— (i) the seashore; (ii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater”.</i>	The proposed gas to power station will have a footprint of approximately 41125 m ² and associated infrastructure, i.e., the gas pipeline will have a 36m servitude while the powerline will have a 31 m servitude. This development will either be within or traverse some identified watercourses.
GNR 983 Activity 24	<i>The development of a road: (ii) A road with a reserve wider than 13, 5 meters, or where no reserve exists where the road is wider than 8 metres.”</i>	The proposed project will require the development of an access road to the power plant site and along the pipeline and powerline, which will also serve as a service road during the operational phase.
Applicable Activities Listed Under Environmental Impact Assessment Regulations, 2014 as amended Listing Notice 2		
GNR 984 Activity 2	<i>“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”.</i>	The proposed project entails the development of the Busisiwe (Aloe) gas-to-power station with 1000 MW maximum output.
GNR 984 Activity 4	<i>“The development of facilities or infrastructure, for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres”.</i>	The proposed projects entail the development of aboveground storage of LNG and hydrocarbons. The site will store a maximum of 24000 m ³ LNG in ISO Containers.

<p><u>GNR 984</u></p> <p>Activity 6</p>	<p><i>“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”.</i></p>	<p>The proposed development of the power plant will require an Atmospheric Emission License (AEL) in terms of as NEM: AQA (Act 39 of 2004) as it triggers Section 21 listed activities.</p>
<p><u>GNR 984</u></p> <p>Activity 14</p>	<p><i>“The development and related operation of-</i></p> <p>(iii) <i>any other structure or infrastructure on, below or along the seabed.”</i></p>	<p>The proposed project entails the development of a subsea gas pipeline which will run from the FSRU to the proposed power plant.</p>
<p><u>GNR 984</u></p> <p>Activity 15</p>	<p><i>“The clearance of an area of 20 hectares or more of indigenous vegetation”</i></p>	<p>The proposed development of a power plant and 132kV powerline will require clearance of more than 20 hectares of indigenous vegetation.</p>
Applicable Activities Listed Under Environmental Impact Assessment Regulations, 2014 as amended Listing Notice 3		
<p><u>GNR 985</u></p> <p>Activity 12 a (iii) (iv)</p>	<p><i>“The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of Indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</i></p> <p>a. <u>Eastern Cape</u></p> <p>iii. <i>Within critical biodiversity areas identified in bioregional plans</i></p> <p>iv. <i>Within the littoral active zone or 100 metres inland from the high-water mark of the sea, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas;</i></p> <p>v. <i>Outside urban areas, within 100 metres inland from an estuarine functional zone.”</i></p>	<p>The proposed development of a gas to power plant, gas pipeline (inland and subsea), and powerline that will require clearance of more than 20 hectares of indigenous vegetation.</p>

<p><u>GNR 985</u></p> <p>Activity 14 a (i) (dd)</p>	<p><i>“The development of-</i></p> <p><i>(ii) infrastructure or structures with a physical footprint of 10 square metres or more.</i></p> <p>a. <u>Eastern Cape</u></p> <p><i>i. <u>Outside urban areas</u></i></p> <p><i>dd. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority.</i></p> <p><i>(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.”</i></p>	<p>The proposed project entails the development of the Coega1 Busisiwe Aloe) Gas-to-power plant with a physical footprint of 41125m² outside urban areas, within environments.</p>
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The DEFF is the Licencing Authority for the proposed project as per Section 36(5)(d) of the National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004), which highlights that the Minister is the licensing Authority and must perform the functions of the licencing authority. Subsequently, in terms of the application for an Atmospheric Emission Licence (AEL), are running concurrently. The AEL application has been lodged.

Table 10: Listed activities of AEL application

Listed Activity	Description
Category 1.4: Gas Combustion Installations, namely gas combustion used primarily for steam raising or electricity generation with a design capacity equal or greater than 50MW heat input per unit, based on the lower calorific value of the fuel used.	The proposed gas plant will operate at a maximum of 1000MW.
Category 1.5: Reciprocating Engines	The proposed project proposed the use of reciprocating engines and alternatively CCGT technology.
Category 2.4: Storage of Petroleum Products	The proposed project entails bulk storage of oil in above ground storage tanks.
The National Water Act, 1998 (Act 36 of 1998) Activities	
Section 21 (c) <i>21(c) Impeding or diverting the flow of water in a watercourse.</i>	The proposed development is within a watercourse, including that it is near a stream and artificial wetland.
Section 21 (i) <i>21(i) Altering the Bed, Banks, Course or Characteristics of a Water Course</i>	The proposed development is within a watercourse and the proposed gas pipeline will traverse water resources.

6 APPLICABLE LEGISLATION AND GUIDELINES

The EIA Regulations of 2014, as amended, under Appendix 2 Section 1(e), requires a description of applicable legislations in the Scoping Report. This section lists and describes the acts and legislation relevant to the proposed development and associated infrastructure. A list of the current South African environmental law, which is considered pertinent to the proposed development, is described in Table 11 below.

Municipal policies, plans, and by-laws and DNG Energy policies and world best practices were considered during the undertaking of the EIA process. In general, although the table is not an exhaustive analysis of the legislation, it provides a guideline to the relevant aspects of the applicable legislation.

Table 11: Legislation pertaining to the proposed project

Aspect	Relevant Legislation	Brief Description
Environment	<ul style="list-style-type: none"> • National Environmental Management: Act 1998, (Act No. 107 of 1998) as amended. • Environmental Impact Assessment Regulations, December 2014 as amended 	<p>The overarching principles of sound environmental responsibility as reflected in the National Environmental Management Act, 1998 (Act No. 107 of 1998) apply to all listed projects. Construction and operation of activities must be conducted according to the generally accepted principles of sustainable development, integrating social, economic, and environmental factors.</p> <p>The EIA process followed complies with the NEMA and the EIA Regulations of December 2014 as amended. The proposed development involves “listed activities,” as defined by NEMA. Listed activities are activities that, if not mitigated, pose detrimental impacts on the environment, and therefore require an EA from the relevant Competent Authority, in this case, the DEFF.</p>
Coastal Management	National Environmental Management: Integrated Coastal Management Act 2008, (Act No. 24 of 2008) (NEMICMA)	<p>The main aim of this act is to establish a system of integrated coastal and estuarine management in the Republic of South Africa, including norms, standards, and policies, to promote the conservation of the coastal environment, and maintain the natural attributes of coastal landscapes and seascapes, and to ensure that development initiatives and the use of natural resources within the coastal zones remain socially and economically justifiable and ecologically sustainable. According to Section 2 of the NEM: ICMA, the objects of this Act are:</p> <ul style="list-style-type: none"> • To determine the coastal zone of the Republic; • To provide, within the framework of the National Environmental Management Act, for the co-ordinated and integrated management of the coastal zone by all spheres of government in accordance with the principles of co-operative governance;

Aspect	Relevant Legislation	Brief Description
		<ul style="list-style-type: none"> To preserve, protect, extend, and enhance the status of coastal public property as being held in trust by the State on behalf of all South Africans, including future generations; To secure equitable access to the opportunities and benefits of coastal public property; and To give effect to the Republic's obligations in terms of international law regarding coastal management and the marine environment. <p>Section 13 of the NEM: ICMA states that any natural person in the Republic:</p> <ul style="list-style-type: none"> Has a right of reasonable access to coastal public property; and Is entitled to use and enjoy the coastal public property. <p>Section 69(1) of the Act states that no person may discharge effluent that originates from a source on land into coastal waters, except in terms of a general discharge permit or a coastal waters discharge permit issued under this section by the Minister after consultation with the Minister responsible for water affairs in instances of discharge of effluent into an estuary.</p>
Biodiversity	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	The purpose of the National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed.
Protected Areas	National Environmental Management: Protected	The purpose of this Act is to provide for the protection, conservation, and management of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.

Aspect	Relevant Legislation	Brief Description
	Areas Act, 2003 (Act No. 57 of 2003)	
Heritage Resources	National Heritage Resources Act, 1999 (Act No. 25 of 1999)	The National Heritage Resources Act, 1999 (Act No. 25 of 1999), legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 ha. The Act provides for potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits for this specific project would be administered by the Mpumalanga Heritage Agency or South African Heritage Resources Agency (SAHRA).
Air quality management and control	National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004)	The objective of the Act is to protect the environment by providing reasonable measures for the protection and enhancement of air quality and to prevent air pollution. The Act makes provision for measures to control dust, noise, and offensive odours. Section 32 of The National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) deals with dust control measures regarding dust control. The Minister or MEC may prescribe measures for the control of dust in specified places or areas, either in general or by specified machinery or in specified instances, the steps to be taken to prevent nuisance or other measures aimed at controlling dust. The National Dust Control Regulations (2013) provides for the management and monitoring of dust.
Noise Management and Control	Noise Control Regulations in terms of the Environmental Conservation, 1989 (Act 73 of 1989)	The assessment of impacts relating to noise pollution management and control, where appropriate, must form part of the EMPr. Applicable laws regarding noise management and control refer to the National Noise Control Regulations issued in the Environment Conservation, 1989 (Act 73 of 1989).

Aspect	Relevant Legislation	Brief Description
Water Resources Management	National Water Act, 1998 (Act 36 of 1998)	<p>This Act provides for fundamental reform of the law relating to water resources and use. The preamble to the Act recognises that water resource management aims to achieve sustainable use of water for the benefit of all users and that the protection of the quality of water resources is necessary to ensure the sustainability of the nation's water resources in the interests of all water users.</p> <p>The proposed activities will encroach on watercourses close to the study area. Therefore, the Water Use Licence Application has been lodged with the DHSWS.</p>
Agricultural Resources	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)	<p>The Act aims to provide for control over the utilization of natural agricultural resources to promote the conservation of the soil, water resources, and vegetation and to combat weeds and invasive plants. Section 6 of the Act makes provision for control measures to be applied to achieve the objectives of the Act.</p>
Agricultural land	Subdivision of Agricultural Land Act (Act No 70 of 1970)	<p>Details the subdivision of agricultural land and provisions under which the Act is triggered. It also provides for the approval of such division by the Minister of Agriculture. Applies for subdivision of all agricultural land and long-term leasing of portions of agricultural land.</p> <p>Long-term leases on portions or subdivisions of the site properties will require the approval of the Minister of Agriculture. An application to DEFF will need to be submitted, detailing the areas to be subdivided or leased for the proposed development. An application in terms of SALA will need to be undertaken and submitted following an environmental authorisation for the proposed project.</p>
Human	The Constitution of South Africa, 1996 (Act No. 108 of 1996)	<p>The Constitution provides for an environmental right (section 24). The State is obliged "to respect, protect,</p>

Aspect	Relevant Legislation	Brief Description
		<p>promote and fulfil the social, economic and environmental rights of everyone...”</p> <p>The environmental right states that:</p> <p>“Everyone has the right -</p> <p>a) To an environment that is not harmful to their health or well-being; and</p> <p>b) To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -</p> <ul style="list-style-type: none"> • Prevent pollution and ecological degradation; • Promote conservation; and • Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”
Waste	National Environmental Management: Waste Act, 2008 (Act 59 of 2008) and MARPOL protocol	<p>This Act provides fundamental reform of the law regulating waste management to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development. This Act also ensures national norms and standards for regulating the management of waste by all spheres of government. Further, it provides specific waste management measures, licensing and control of waste management activities, remediation of contaminated land; compliance and enforcement; and matters connected to that.</p>
Hazardous Substance	Hazardous Substance Act, 1973 (Act 15 of 1973)	<p>This Act regulates the control of substances that may cause injury, or ill health, or death due to their toxic, corrosive, irritant, strongly sensitizing or inflammable nature of the generation of pressure thereby in certain instances and for the control of certain electronic products. To provide for the rating of such substances or products about the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use,</p>

Aspect	Relevant Legislation	Brief Description
		<p>operation, modification, disposal or dumping of such substances and products.</p> <ul style="list-style-type: none"> • Group I and II: Any substance or mixture of a substance that might by reason of its toxic, corrosive, etc., nature or because it generates pressure through decomposition, heat, or other means, cause extreme risk of injury etc., can be declared as Group I or Group II substance • Group IV: any electronic product; and • Group V: any radioactive material. <p>The use, conveyance, or storage of any hazardous substance (such as distillate fuel) is prohibited without an appropriate license being in force.</p> <p>It is necessary to identify and list all the Group I, II, III, and IV hazardous substances that may be on the site and in what operational context they are used, stored, or handled. If applicable, a license is required to be obtained from the Department of Health.</p>
Gas	Gas Act, 2001 (Act 48 of 2001)	<p>The Gas Act 48 of 2001 intends:</p> <ul style="list-style-type: none"> • to promote the orderly development of the piped gas industry; • to establish a national regulatory framework; • to establish a National Gas Regulator as the custodian and enforcer of the national regulatory framework; and • to provide for matters connected therewith. <p>The objects of this Act are to-</p> <p>(a) promote the efficient, effective, sustainable, and orderly development and operation of gas transmission, storage, distribution, liquefaction and regasification facilities and the provision of efficient, effective, and</p>

Aspect	Relevant Legislation	Brief Description
		<p>sustainable gas transmission, storage, distribution, liquefaction, re-gasification, and trading services;</p> <p>(b) facilitate investment in the gas industry;</p> <p>(c) ensure the safe, efficient. economic and environmentally responsible transmission, distribution, storage, liquefaction, and re-gasification of gas;</p> <p>(d) promote companies in the gas industry that are owned or controlled by historically disadvantaged South Africans by means of licence conditions so as to enable them to become competitive;</p> <p>(e) ensure that gas transmission, storage, distribution, trading, liquefaction and re-gasification services are provided on an equitable basis and that the interests and needs of all parties concerned are taken into consideration;</p> <p>(f) promote skills among employees in the gas industry;</p> <p>(g) promote employment equity in the gas industry;</p> <p>(h) promote the development of competitive markets for gas and gas services;</p> <p>(i) facilitate gas trade between the Republic and other countries; and</p> <p>(j) promote access to gas in an affordable and safe manner.</p>
Electricity	Electricity Regulation, 2006 (Act 4 of 2006)	This act provides the national regulatory framework for the electricity supply industry; to make the National Energy Regulator the custodian and enforcer of the national

Aspect	Relevant Legislation	Brief Description
		<p>electricity regulatory framework; to provide for licenses and registration as how generation, transmission, distribution, reticulation, trading, and the import and export of electricity are regulated; to regulate the reticulation of electricity by municipalities, and to provide for matters connected to it.</p> <p>The objectives of this Act are 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.
Ports	National Ports Act, 2005 (Act 12 of 2005)	<p>The objects of this Act are to-</p> <p>(a) promote the development of an effective and productive South African ports industry that can contribute to the economic growth and development of our country;</p>

Aspect	Relevant Legislation	Brief Description
		<ul style="list-style-type: none"> (b) establish appropriate institutional arrangements to support the governance of ports; (c) promote and improve efficiency and performance in the management and operation of ports; (d) enhance transparency in the management of ports; (e) (e) strengthen the State's capacity to- <ul style="list-style-type: none"> (i) separate operations from the landlord function within ports; (ii) encourage employee participation, to motivate management and workers (iii) facilitate the development of technology, information systems and managerial expertise through private sector involvement and participation; and (f) promote the development of an integrated regional production and distribution system in support of government's policies.
Transportation	National Road Traffic Act (Act No. 93 of 1996)	<p>An abnormal load vehicle permit will be required to transport the various OCGT and power line components to the site for construction. These include:</p> <ul style="list-style-type: none"> • Route clearance and permits will be required for vehicles carrying abnormal heavy or abnormally dimensional loads. • Transport vehicles exceeding the dimensional limitation (length) of 22m.
Health and Safety	Occupational Health and Safety Act (OHS Act	<p>The Major Hazard Installation (MHI) regulations (July 2001) published under Section 43 of the Occupational Health and Safety Act (OHS Act) requires employers, self-employed persons, and users who have on their premises, either permanently or temporarily, a major hazard installation or a quantity of a substance which may pose a</p>

Aspect	Relevant Legislation	Brief Description
		risk (our emphasis) that could affect the health and safety of workers and the public to conduct a risk assessment in accordance with the legislation. Following legislation, the risk assessment must be done by an approved inspection authority (AIA) registered with the Department of Labour and accredited by the South African Accreditation Systems (SANAS) before construction of the facility.
Climate Change		The National Greenhouse Gas Emission Reporting Regulations have been promulgated in terms of NEM: AQA to introduce a single national reporting system for the transparent reporting of greenhouse gas emissions. The regulations apply to the categories of emission sources listed in Annexure 1 to the regulations and include electricity production exceeding 10 MW. Tier 1 reporting is required as a minimum, with a five-year grace period applicable before reporting the lower tiers.

6.1 ISSUE OF ENVIRONMENTAL AUTHORISATION

As indicated above, the proposed project activities include generation and transmission activities, i.e., energy generated at the proposed gas-to-power plant will eventually connect to the Eskom grid. Therefore, as per the grid agreements, the Customer (DNG Energy) shall, after successful commissioning, transfer full ownership of the self-built connection assets to the NTC, including all relevant environmental authorisations, approvals, and approved permits. Subsequently, the issue of the environmental authorisation will be according to Regulation 25 (2) of the EIA Regulation of 2014 as amended. Accordingly, DNG will be responsible constructing all activities listed above, while Eskom will be responsible for the operation and maintenance of the proposed grid connection infrastructure (132/400kV step-up substation will also be required from the Busisiwe power station.). In this case, a multiple environmental authorisation is required in the name of DNG Energy (Pty) Ltd and Eskom Holdings SOC Limited, covering all aspects for which authorisation is granted.

6.2 OTHER POLICIES AND GUIDELINES

The following Guideline documents have been considered in the preparation of this report:

- National Web based Environmental Screening Tool

- Department of Environmental Affairs (DEA) Integrated Environmental Management Guideline Series 7, Public Participation in the EIA Process as published in Government Gazette No. 33308, 18 June 2010; and
- Implementation Guidelines (published for comment) in Government Notice 603 of 2010
- Integrated Environmental Management Information Series (Booklets 0 to 23) (DEAT, 2002 – 2005)
- Western Cape Department of Environmental Affairs & Development Planning (DEA&DP Guideline on Transitional Arrangements, August 2010)
- DEA&DP Guideline on Alternatives (August 2010)
- DEA&DP Guideline on Public Participation (August 2010)
- DEA&DP Guideline on Need and Desirability (August 2010)
- Guidelines for Involving Specialists in the EIA Processes Series (DEA&DP; CSIR and Tony Barbour, 2005 – 2007)

The DEFF screening tool was consulted from the project onset. The tool was also used to guide the specialist studies required; thus, the list corresponds with the specialist studies identified in the screening tool report submitted to the DEFF is included as **Appendix H** of this report.

7 DESCRIPTION OF THE NEED AND DESIRABILITY OF THE PROPOSED ACTIVITY

This section justifies the need and desirability of the proposed development with a focus on its associated benefits and importance to both the locals and the region at large.

7.1 MOTIVATION FOR THE DEVELOPMENT

In 2012, the Minister of the Department of Mineral Resources and Energy emphasised the need for new energy generation capacity that should be procured from hydro, coal, and gas sources to support the South Africa's base load energy mix and generation from gas and cogeneration. The determinations require that 3126MW of baseload and/or mid-merit energy generation capacity is needed from gas-fired power generation to contribute towards energy security. The gas required for such power generation will be from both imported and domestic gas resources.

In the absence of available natural gas within the country and to ensure new capacity is delivered in timescales corresponding with the objectives of the medium-term risk mitigation project, it is recognised that it will be necessary to import gas, in the form of either LNG or compressed natural gas. Consequently, the Gas to Power Programme is designed as a potential means to catalyse the importation of such gas. It is anticipated that Eskom Holdings (SOC) Limited, in its capacity as the single buyer of electrical energy, will be the sole buyer of electrical capacity and energy generated under the Gas to Power Programme.

The initial period of the development of South Africa's gas industry could be anchored on demand provided by the Gas-to-Power Programme. In support of the vision for the South African gas programme, the DMRE is developing an LNG to Power Independent Power Producer Procurement Programme (IPPPP). Therefore, Third Party Access will be a fundamental aspect of the LNG to Power IPP Programme. This will enable the development of gas demand by third parties and the associated economic development.

DNG Power is creating a pan African LNG supply network and championing the use of LNG for road and maritime transport, specifically for mini-bus taxis, trucks, buses, and shipping, as a first step in contributing to sustainable development. Over the next five years, the company will be investing around USD 5 billion to bring this affordable energy alternative to the market. The environmental, social, and economic benefits that come with the use of LNG include ensuring that the country meet its targets in reducing greenhouse gas emissions, driving economic growth, and improving the lives of all citizens.

With development and expansion infrastructure programmes planned for South Africa, Mozambique, and Nigeria in the first instance, DNG Energy is looking at the LNG value chain from source to consumption holistically. The transport of the LNG from the exporting countries to South Africa will happen predominantly via sea. DNG Energy has commissioned South African Shipyards to build an 8,000 tons LNG barge, the largest vessel by weight ever built on the African continent and will come into service in the future.

At a national level, South Africa is facing significant electricity shortages as well as water scarcity. The proposed project aims to supply additional electricity to the national grid, without intensive use of water, while also being approximately 40% less CO₂ intensive than conventional coal-fired electricity generation. The proposed maximum project generation capacity at 1000 MW, will potentially reduce the risk of rolling electricity blackouts. The benefit of the proposed facility and its location and contribution will allow for the increased focus on developing the desired industrial capabilities, "host region's" development, and comprehensive planning and design to accommodate the diverse regional development needs and frameworks.

Gas-to-power generation has increased significantly in the past few years, with gas overtaking coal as the primary energy source in some countries. Electricity generation from natural gas offers greater efficiency and lower CO₂ emissions than coal and other operational advantages such as compact generators and lower water use.

Furthermore, the natural gas discoveries in southern Africa have increased the potential for gas-to-power generation in this country. The development of the gas-powered sector will likely accelerate in the ~~near~~ future.

7.2 BENEFITS OF THE PROJECT

Further, natural gas is expected to play a central role in supporting Africa's drive to achieve electricity connection for nearly 600 million people without access to the grid, to reduce widespread reliance on coal for power generation, and to fast-track the continent's slowed industrial expansion.

Consequently, this project aims to respond to the government initiative, which is driven by the need to diversify the country's energy sources and create a balanced and more sustainable energy mix. The proposed project will ensure the following:

- Create opportunities within the gas space;
- Reduce greenhouse gas emission;
- Ensure a balanced and cleaner energy supply; and
- Improvement of South Africa's socio-economic status.

The socioeconomic benefits expected from the development include the following:

- Nominal job opportunities in the short term, there will be minimal job opportunities during the construction of the proposed infrastructure. These include skilled, semi-skilled, and under-skilled labours, which could consist of locals as well as regional and national communities.
- Natural gas can provide more than just electrical power, it will also provide direct heat and chemical feedstock for industrial processes, commercial and residential cooking, and heating applications, as well as an alternative fuel source for transport. South Africa has already seen a partial reduction in electricity demand because of trends such as the increasing use of LPG for cooking and space heating.

There are several advantages of Gas-to-Power for the Eastern Cape and South African energy supply:

- A gas power plant is far less complex than a coal fired power plant and hence has shorter construction times, which is crucial in addressing South Africa's current short-term electricity demands.
- In terms of environmental impacts, a gas-powered plant has approximately 40% less CO₂ emissions per unit of power than coal, due partly to greater efficiency, but mainly due to the hydrogen content. Rapid start-up, ramp-up and ramp-down times enable gas power systems to follow variable and rapidly changing generation patterns of renewable energy sources.
- New gas field discoveries on the east and west coasts of Southern Africa, as well as the development of stranded reserves, have opened the possibility of increased imports of gas, either via pipeline or in the form of Liquefied Natural Gas (LNG).
- Gas-fired power plants are the first choice to balance the variability of renewables and co-location of gas-to-power and Renewable Energy (RE) would seem to be a logical step and may provide leverage for the

development of shale gas power. The co-location of Gas power plants with RE seems to be a logical conclusion.

7.3 SUPPORTING STRATEGIES

At the regional level, the project would contribute to improving the socioeconomic status of the adjacent communities and the region at large. At the national level, the project would contribute to implementing South Africa's new energy policy as embodied in the White Paper on Energy (Department of Minerals and Energy, 1998), which highlights that amongst others, coal plays a central role in the socio-economic development of our country, while simultaneously providing the necessary infrastructural economic base for the country to become an attractive host for foreign investments in the energy sector. The priorities to which this project would contribute are laying the groundwork for enhancing cleaner energy supply. Several national policy documents, including the White Paper on the Energy Policy of South Africa, approved in 1998; the National Development Plan ("NDP"); the draft Integrated Energy Plan; and the Integrated Resources Plan 2010–2030 present the case for natural gas as a significant contributor to South Africa's energy mix.

8 DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED, SITE AND LOCATION WITHIN THE SITE

The identification of alternatives is a crucial component of the EIA process. The identified alternatives are assessed in terms of environmental acceptability, technical as well as economic feasibility during the EIA process, wherein the preferred alternative is highlighted and presented to the Authorities.

South Africa has proposed a 20-year Integrated Resource Plan (IRP) outlining a new power generation program to 2030. The program will use various renewable energies and natural gas to produce electricity. The site selection process focused on reviewing the IRP and associated documents that address current and future development in and around the area. The selection of project alternatives was primarily based on the DMRE's pre-feasibility study that technically determined the broad location based on the need of the project. Subsequent, site visit and Integrated Environmental (IE) tools such as Geographic Information System (GIS) and Screening Tool were used by the EAP and specialist teams to identify and assess the sensitive areas and no-go areas. Further, a detailed public consultation has been undertaken to assess the viability of the selected locations to meet the need and desirability of the project. Within the larger area, other technical alternatives will be assessed to ensure that the most feasible options are considered in consideration of their functionality and the environment. Public participation will also enhance the selection of alternatives in that it will allow the various stakeholders to meaningfully comment on the proposed options and make recommendations.

8.1 DETAILS OF ALTERNATIVES CONSIDERED

This section describes the alternatives/options considered and include the location, route alignment and technical options as well as no-go alternatives, which are discussed below.

8.1.1 SITE ALTERNATIVE

The site location of the proposed development is within the Coega Special Economic Zone (SEZ) and Coega Development Cooperation (CDC). The CDC developed an open space management plan, Environmental Impact Assessment rezoning as well as the framework plan for developments for Coega SEZ. The main aim of the above-mentioned documentation was to identify the feasible and no-go areas within the Coega SEZ. There is one site location for the proposed developments; however, the developments will consider the open space management and development framework plans developed for the area. The site location for the developments falls within the Coega development demarcated zones (Zone 7, 8 and 10), which are suitable for the development of the gas-to-power facility and associated infrastructure, and it was selected based on the following motivation:

- The site (Zone 7, 8 and 10) is situated close to the sea where the gas will be collected through a pipeline from the Floating Storage Regasification Unit (FSRU) to the proposed 1000 MV power station.
- The proposed site is also located close to the existing substation where the power will be transmitted to through a 132kV powerline.
- Is the most viable location for a gas-to-power due to their proximity to the port and proposed related infrastructure; and
- Further, the identified site location will also cater for additional space for expansions of the gas-to-power facility if required.

The proposed development will be undertaken within the area where there are other activities such as the construction of bulk infrastructure in Zone 10 as per Figure 8 below. There is also an EA application lodged within the SEZ for the proposed Coega 1000MV development of a gas-to-power station but not within the exact site location.



Figure 7: The construction of bulk infrastructure within the SEZ

8.1.2 TECHNICAL ALTERNATIVES

8.1.2.1 Power generation technology

DNG Energy has considered various technology options including OCGT, CCGT, and Reciprocating Engine. Several aspects including technical, economic, and environmental are considered in selecting the most suitable technology. However, of the many technologies available the project is considering the OCGT and CCGT or reciprocating engines.

Reciprocating internal combustion engines, which are typically used for backup, standby, or emergency power, are now becoming increasingly popular for larger utility-scale power generation applications, especially in areas with high levels of electricity generation from intermittent sources such as wind and solar. The recent increase in natural gas or dual-fuel capable reciprocating internal combustion engine units has been driven in part by advancements in engine technology that increase operational flexibility and by changes in natural gas markets that have generally provided ample supply and relatively stable fuel prices.

8.1.2.2 Open Cycle Gas Turbine (OCGT)

- Cheaper, cleaner, faster power –turbines provide cheaper power, a better-quality grid and cleaner power with lower emissions, when compared to reciprocating engines. They can be installed quickly (in as little as a few weeks) to help alleviate frequent outages, making them especially well-suited for utility and industrial applications.

- Higher efficiency with lower costs - A highly efficient turbine in the combined cycle can consume only about 2 mL/MWh of lube oil per year—200 times less than a reciprocating engine.
- Higher efficiency with lower costs - Gas turbines need maintenance only once a year, or when they have been in operation for 4,000 hours. These engines can save more than 13,000 man-hours over a 3-year maintenance cycle.
- Plant availability and fuel flexibility - Gas turbines have the highest availability of any thermal power technology. It can be replaced in a power plant, such as a utility or power plant, within a few days for a major inspection, which translates to higher availability—98.2%
- Getting power to the grid, wherever it is needed - Because they are small and modular, turbine engines can be transported, installed, and commissioned in as little as 3 months. They can be installed outdoors with minimal foundation requirements, making them an advantageous energy solution for any region across Africa that needs fast, clean, reliable power.
- Getting power to the grid, wherever it is needed - gas turbines feature a power turbine and high-pressure shaft that work together to respond quickly to grid frequency fluctuations, helping create a more stable and reliable grid.
- Smaller and more stable - Because they have about 22 times more power output per unit than comparable high-speed diesel reciprocating engines, gas power plants take up less space.

8.1.2.3 Reciprocating Engine

- High-speed reciprocating engines—can require up to 50 times more maintenance events per year.
- The power generated by reciprocating engines, average to about 93% availability.
- In comparison, it can take up to 12-18 months for reciprocating engines.
- Then that of reciprocating engines.
- Require a bigger space for similar energy output.

8.1.3 STORAGE AND REGASIFICATION ALTERNATIVES

Table 12: Storage and regasification alternatives

Alternative	Description
Floating Storage and Regasification Unit (FSRU):	A modified LNG vessel that combines LNG shipping, storage, and regasification on one ocean going vessel. This alternative is widely used internationally and includes all the components needed to offload gas (storage, regasification, offloading terminal, buoy, and mooring system) using a subsea pipeline.

Land based storage and regasification	This is another long-term option that can be state-owned, however, it is not financially feasibly without a developed downstream gas market.
Gravity Float Unit	This is a concrete based modular structure that acts as an artificial island for ships to dock and offload LNG.

None of the above options is dismissed given that the gas space in South Africa is still in its teething stages, therefore as more information becomes available any of the options can become viable or be more lucrative compared to the other. Nonetheless, the process is considering the FSRU as the preferred for this study.

8.1.3.1 No-go alternative

Under GN R.982, consideration must be given to the option not to act, in which an alternative is usually considered when the proposed development is envisaged to have significant adverse environmental impacts that mitigation measures cannot ameliorate effectively. There would be no economic benefits, i.e., employment opportunities for local communities. The proposed project will undoubtedly require both skilled and unskilled labour, which is expected to yield positive spinoffs for the locals, the province, and the country at large. The development of a gas-to-power facility and SEZ in Coega will promote the area for further investment, stimulate and contribute towards the economy and create several much-needed blue-collar jobs within the area. However, this could be hindered if the no-go option is adopted. The gas industry is growing and will soon be part of the country's socioeconomic anchor within the immediate communities and more so for the country.

9 PUBLIC PARTICIPATION PROCESS

The NEMA EIA Regulations require that during the EIA process, the Organs of State together with Interested and Affected Parties (I&APs) be informed of the application and allowed to comment on the application.

Public Participation Process (PPP) is any process that involves the public in problem-solving and decision-making; it forms an integral part of the Scoping and EIA process. The PPP provides I&APs with an opportunity to provide comments and raise issues of concern or to make suggestions that may result in enhanced benefits for the project.

The primary purpose of the PPP report is as follows:

- To outline the PPP that was undertaken;
- To synthesise the comments and issues raised by the key stakeholders, I&APs; and
- To ensure that the EIA process fully address the issues and concerns raised.

Chapter 6, Regulation 39 through 44 of the EIA Regulations stipulates the minimum requirements for a compliant Public Participation Process (PPP) process. Therefore, Nsovo considered relevant guidelines applicable to public participation as contemplated in section 24J of the Act and give notice to all potential interested and affected parties throughout the EIA process.

9.1 PUBLIC PARTICIPATION PRINCIPLES

Public Participation principles hold that those affected by a decision have the right to be involved in the decision-making process. The principles of public participation are to ensure that the PPP:

- Communicates the interests of and meet the process needs of all participants;
- Seek to facilitate the involvement of those potentially affected;
- Involves participants in defining how they participate; and
- Is as inclusive and transparent as possible; it must be conducted in line with the requirements of Regulations.

9.2 APPROACH AND METHODOLOGY

The public participation approach adopted in this process is in line with the process contemplated in Regulation 39 through 44 of the EIA Regulations as amended, in terms of NEMA and Annexures 2 and 3 of Government Notice No 43412 of 5th of June 2020. The process followed the approved PPP plan submitted on the 05th of March 2021 and approval email attached as **Appendix H**.

9.2.1 IDENTIFICATION OF INTERESTED AND AFFECTED PARTIES

The I&APs identified parties include pre identified stakeholders (government department and landowners). Further, an opportunity will be given to the I&APs to register. Notification and request for comments will be submitted to but not limited to the following key stakeholders via email:

Table 13: List of Stakeholders

- Eastern Cape Department of Economic Development, Environmental Affairs and Tourism;
- Eastern Cape Department of Transport and Public Works;
- Eastern Cape Department of Human Settlement, Water and Sanitation;
- South African Heritage Resources Agency;
- Nelson Mandela Bay Metropolitan Municipality;
- South African Heritage Resource Agency;

- Wildlife and Environmental Society of South Africa;
- Eskom SOC Limited – Transmission;
- South African National Roads Agency (SANRAL) SOC Limited;
- Coega Development Corporation;
- Transnet SOC Limited;
- South African National Parks.

9.2.2 PUBLIC PARTICIPATION DATABASE

In accordance with the requirements of the EIA Regulations, Section 42 requires that a Register of I&APs be kept by the public participation practitioner. In fulfilment of this requirement, such a register is in place, and the details of I&APs, including their comments, will be updated throughout the project cycle. The public participation database is attached included in the Final Scoping Report.

9.2.3 SITE NOTICES

A2 size notices will be fixed at different conspicuous locations within and around the proposed project study area, and the identified locations include but not limited to the Coega Development Corporation Business Centre, Motherwell and Walmer Libraries, (nearest town from the proposed site), Ward Councillor office, Recruiting Zone in Coega, Daily Coega Zone and Dedisa substation (where the proposed powerline will be connected to), boundary of the property as well as other public amenities and photographic evidence will be included in the FSR.

9.2.4 PLACEMENT OF AN ADVERTISEMENT IN THE LOCAL NEWSPAPER

An advertisement will be placed on the Herald Newspaper to inform I&APs of the proposed project, availability of the Scoping Report, and public meetings. The advertisement will also be placed on the second local newspaper i.e., The Weekend Post to inform the I&APs of the Atmospheric Emission Licence applications and proof of newspaper will be included in the FSR.

9.2.5 PLACEMENT OF THE SCOPING REPORT FOR REVIEW COMMENTS

The Draft Scoping Reports will be placed for review and comment at the Motherwell Public library from the 16th of April 2021 and Nsovo website at www.nsovo.co.za for 30 days and the Interested and Affected Parties (I&APs) will be notified of the availability of the draft Scoping Report for review and comment through newspaper advertisement. Email proof of notification of identified stakeholders will be included in the FSR.

9.2.6 PUBLIC MEETINGS

In line with the requirements of the COVID-19 Regulations and in the interest of the community health and safety the public and stakeholder meetings will be conducted virtually via Zoom platform on the 25th of April 2021 at 11:00, and the login details are provided below.

Table 14: Public meeting log in details

Host	Meeting ID	Password
Rofhiwa Magodi	462 632 8225	811371

9.3 A SUMMARY OF ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Comments, and concerns raised together with the responses provided by the Environmental Assessment Practitioner (EAP) will be included in the FSR.

10 DESCRIPTION OF THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES FOCUSING ON THE GEOGRAPHICAL, PHYSICAL, BIOLOGICAL, SOCIAL, HERITAGE AND CULTURAL ASPECTS

This section outlines parts of the socio-economic and biophysical environment that could be affected by the proposed development. Using the project description and knowledge of the existing environment, potential interactions between the project and the environment are identified below. The potential effects of the project on the human environment, socio-economic conditions, physical and cultural resources are included.

10.1.1 SOCIO-ECONOMIC DESCRIPTION

This section presents the socio-economic aspects focusing on the Province and Municipalities within which the proposed study area is located.

10.1.1.1 Provincial Description of the Proposed Project

The proposed development will be undertaken within the Eastern Cape Province, located on the east coast of South Africa between the Western Cape and KwaZulu-Natal provinces. Inland, borders the Northern Cape and Free State provinces, as well as Lesotho. The Eastern Cape's main feature is its spectacular coastline bordering the Indian Ocean. It is the second-largest province in South Africa by surface area and has the third-largest population. The capital is Bhisho, and other major cities and towns include Port Elizabeth, East London, Makhanda (previously Grahamstown), Mthatha (previously Umtata), Graaf Reinet, Cradock, and Port St Johns.

The metropolitan economies of Port Elizabeth and East London are based primarily on manufacturing, the most important industry being motor manufacturing. The Province is the hub of South Africa's automotive industry. The Eastern Cape is divided into two metropolitan municipalities (Buffalo City Metropolitan Municipality and Nelson Mandela Bay Metropolitan Municipality) and six district municipalities, which are further subdivided into 31 local municipalities.

10.1.1.2 Municipality within which the proposed study area is located

The proposed project will be undertaken within the Coega Industrial Development Area situated within the Nelson Mandela Bay Metropolitan Municipality (NWA), a Category A municipality. Nelson Mandela Bay is a major seaport and automotive manufacturing center located on the south-eastern coast of Africa. Further, it is the economic powerhouse of the Eastern Cape Province and one of eight metropolitan areas in South Africa. It borders with the Cassie Mountain View in the north, Cape Recife in the south, Sundays River Mouth in the east, and Van Stadens River Mouth in the west.

The major towns and cities include Motherwell (the nearest town from the study area), Port Elizabeth, Bethelsdorp, Bloemendal, Blue Horizon Bay, Clarendon Marine, Despatch, KwaNobuhle, Summerstrand, Swartkops, and Uitenhage. Economic sectors within the Municipality include manufacturing, community services, finance, trade, and transport.

10.1.2 CLIMATIC CONDITION OF THE PROPOSED AREA

The Eastern Cape has a composite climate due to its location at the confluence of several climatic regimes, the most important of which are temperate and subtropical. There are wide variations in temperature, rainfall, and wind patterns, largely due to movements of air masses, altitude, mountain orientation, and distance from the Indian Ocean. Winters are cold but mild, and summers are warm but considerably less humid with a maximum temperature of 27°C, an average temperature of 24°C and a minimum temperature of 2°C (Figure 9). The average rainfall amount in Coega is 106mm a year. The Coega area is subject to strong winds with a maximum of wind of 32kmph and an average of 27.5 kmph throughout the year (Figure 17).

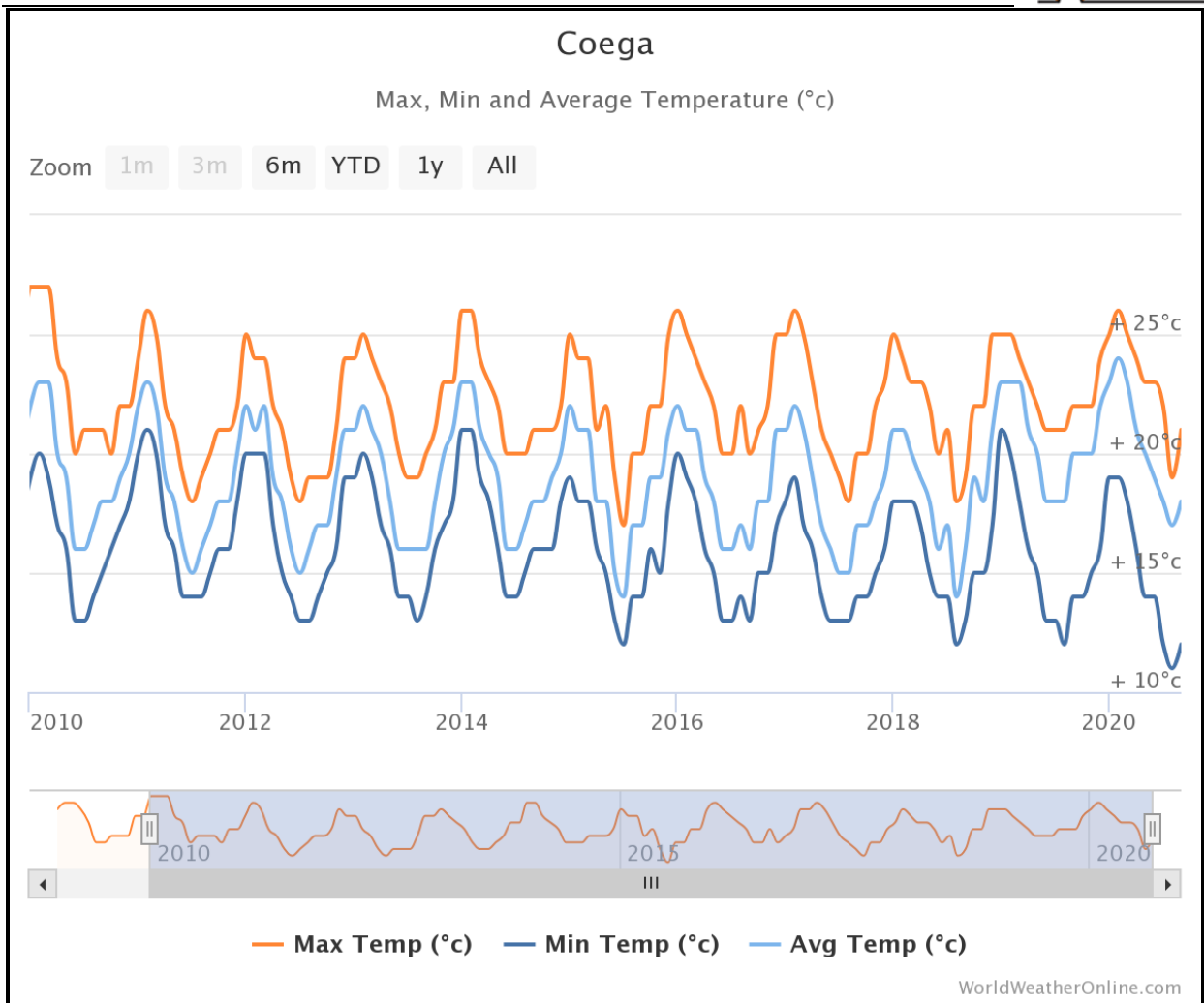


Figure 8: Maximum, minimum, and average temperature of Coega from 2010 – 2020
(www.worldweatheronline.com)

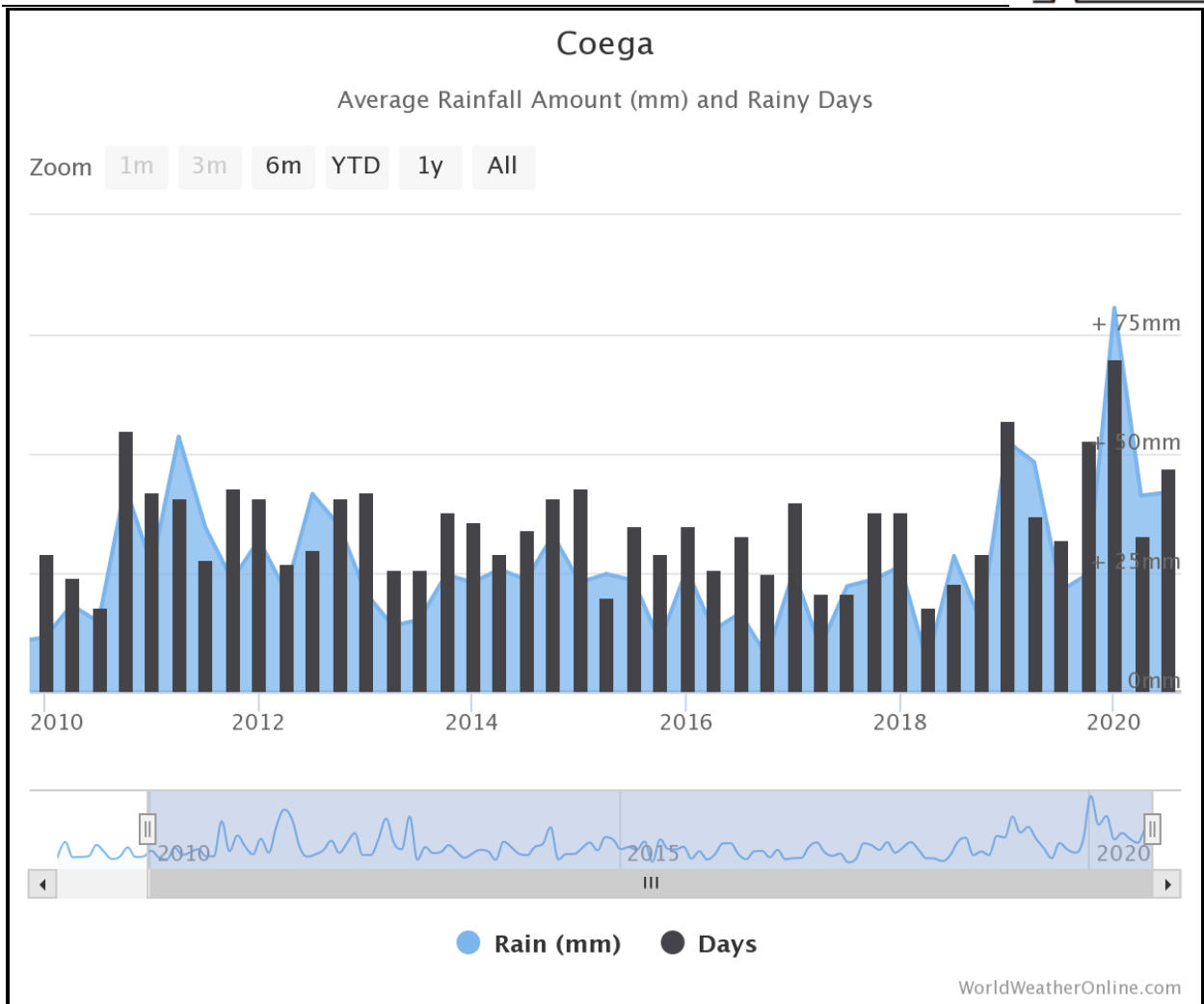


Figure 9: Average rainfall and rain days of Coega from 2010 – 2020 (www.worldweatheronline.com)

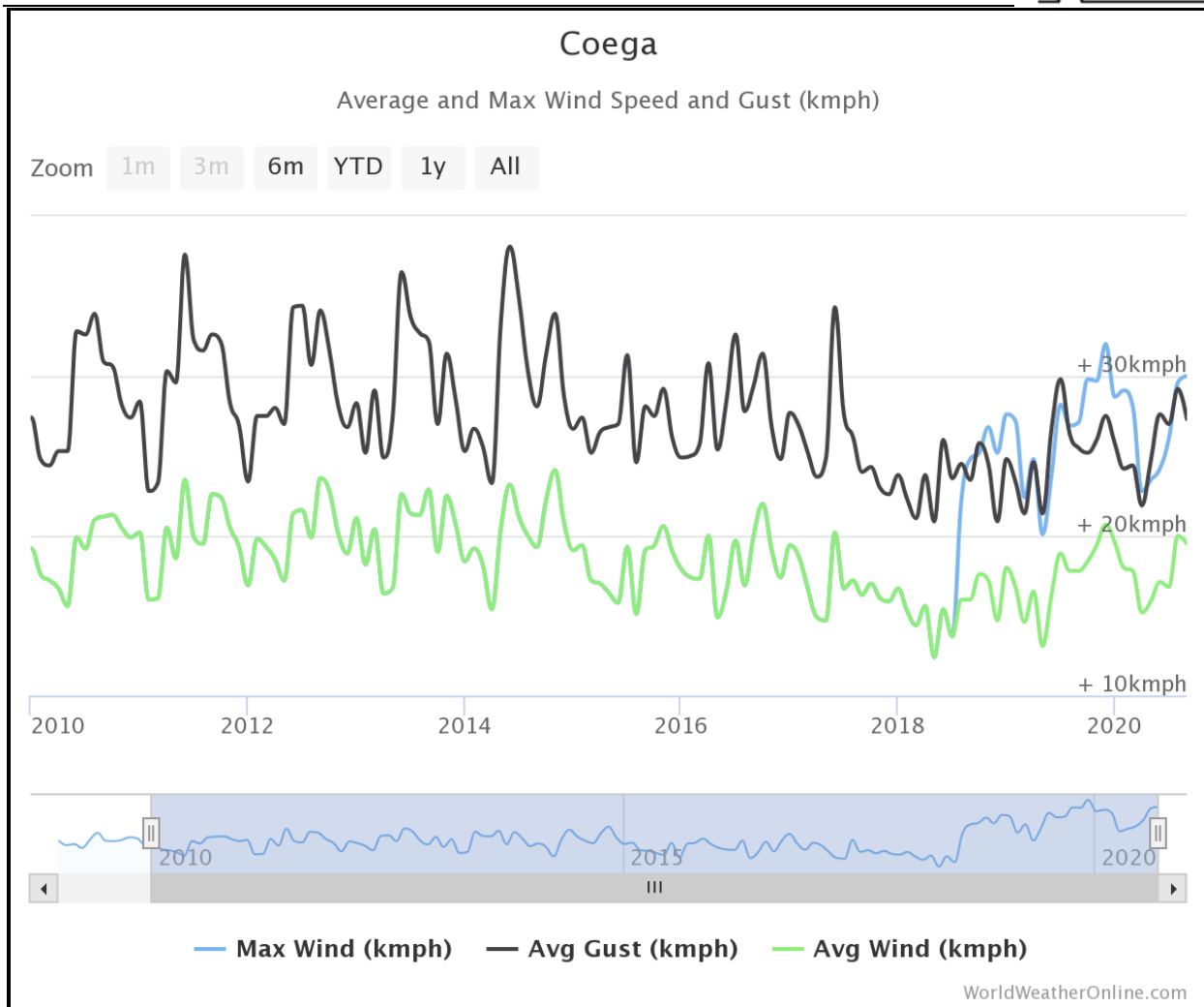


Figure 10: Average and maximum wind speed of Coega from 2010 – 2020 (www.worldweatheronline.com)

10.1.3 GEOLOGY WITHIN THE STUDY AREA

The bedrock around Port Elizabeth is characterised by the Peninsula Formation sandstones of the Table Mountain Group. This formation consists of coarse-grained super-mature quartzitic sandstone and is relatively resistant to erosion. It forms the bedrock of Algoa Bay and emerges as outcrops in the bay as the islands of St Croix, Jahleel, Bird and Brenton. The areas between these islands are filled with recent marine deposits (Alexandria Formation), which directly overlie the mudstones of the Kirkwood Formation. The geology of the Coega SEZ is characterised by coastal limestone, overlaid by calcareous sands blown onshore.

The Coega SEZ is underlain by a wide spectrum of sedimentary rocks spanning an age range of some 470 million years. These sediments are assigned to the Palaeozoic Table Mountain Group, the Mesozoic Uitenhage Group, and the Caenozoic Algoa Group. Levels of bedrock exposure within the Coega SEZ are generally very low due to extensive cover by superficial drift (e.g., soil, alluvium, in situ weathering products) as well as by surface calcrete (pedogenic

limestone) (Almond 2010). The Coega Fault extends west of the Groendal dam eastwards towards the coast, dipping at between 30° and 60° for about 120 km. It is a normal tensional fault with a vertical southward throw of 500m to 100m.

According to the site-specific geotechnical scoping input the site is underlain by alluvial sheets comprised of sand and gravel. Expected constraints of the above mention geology include:

- Excavatability / undulated soil profile with possible trench & excavation collapse
- Collapsible soils
- Compressible soil

No boreholes, Seismic refraction lines noted.

10.1.4 TOPOGRAPHY OF THE STUDY AREA

The site is situated within the Coega Special Economic Zone which is situated on a coastal platform that descends towards the sea in a series of gentle steps parallel to the existing coastline. This platform has been incised by the Coega River, which flows towards the sea across the western and south-western parts of the SEZ. Zone 10 is largely covered by dunes and rises to approximately 60 m above sea level. According to the geotechnical input of the site, the following must be considered:

- To create a level platform 455 m long buy 172m wide approximately 129 129 m³ of balance cut to fill would need to take place.
- No nearby rivers and flood plain levels would need to be taken into consideration in determining the platform level.
- The soil is still in its natural form and will potentially have the necessary ground bearing capacity. Excess soil could be incorporated into “environmental” features such as water runoff berms, noise attenuation berms and flood diversion berms.
- There are no suitable “ad hoc” open excavation near the proposed platform to be able to view the in-situ soil profile.
- This then leads to the conundrum to achieve better founding soil and “environmental” features you would need to lower the platform level this will thus increase the cut to fill quantity. To raise the platform level, which in term may result in worse founding soil and “environmental” features.

10.1.5 GEOHYDROLOGY

The proposed development will be undertaken within the Coega SEZ. The Coega River valley represents the only major incision into the coastal landform in the area between the Swartkops and Sunday's rivers. Over time, the river has created a floodplain valley between 400 and 1000m wide. It is a relatively small sand-bed river and is the most significant surface water feature associated with the proposed Coega SEZ. The river and estuary are currently used by commercial salt works for industrial purposes, and to a limited degree, the estuarine beach area is used for recreational purposes (shore angling). The incised river valley forms a natural route through which a transportation corridor can be constructed linking the port with the industrial hinterland. It also provides a location for a harbour basin with reduced earthworks and dredging costs.

The southern portion of the designated SEZ is underlain at depth by an artesian aquifer formed by sandstones and quartzites of the Table Mountain Group. They configure this aquifer area succession of eastward-thickening Cretaceous formations (Uitenhage Group) up to 1 200m thick near the coast.

10.1.6 HYDROLOGY

The study area is situated in Swartkops Quaternary catchments M30B with an average rainfall of 434.41 mm per annum. There is NFEPA Wetland (Estuarine) situated approximately 3km west from the site and an artificial wetland approximately 1080m south-east of the site.

10.1.7 SITES OF ARCHAEOLOGICAL AND CULTURAL SIGNIFICANCE

The heritage impact assessment was conducted within the proposed study area and findings are described as follows:

10.1.7.1 Archaeological finds

There are established associated infrastructure development, roads and other associated infrastructures across the entire project receiving area. The proposed project will be undertaken in Zone 7, 8 and 10. The desktop survey conducted by Mulaifa Developments and CDC Archaeological Report did not identify any cultural heritage resources or archaeological resources within Zone 7, 8 and 10 earmarked for the proposed development, this might be due to dense grass, bush, and alien vegetation in the area (Figure 20).

10.1.7.2 Historical and Built Environment

In general, historic sites are associated with colonial-era white settlers, colonial wars, industrialization, recent and contemporary African population settlements, and contemporary ritual sites dating to the last hundred years. However, recent historic period sites and features associated with the African communities, settler and commercial farming communities are on record in the project area environment. The affected general landscape is associated with historical

events such as white settler migration, this is confirmed by the predominant of commercial farming by white farmers. No listed specific historical sites are on the proposed development sites.

10.1.7.3 Burial grounds and graves

Whether burial sites are known or not on record, from a heritage perspective, burial grounds and gravesites are accorded the highest social significance threshold. They have both historical and social significance and are considered sacred. Wherever they exist they may not be tampered with or interfered with during any proposed development. It is important to note that the possibility of encountering human remains during subsurface earthmoving works anywhere on the landscape is ever-present. Although the possibility of encountering previously unidentified burial sites is low along the area earmarked for development due to the nature of the environment, should such sites be identified during subsurface construction work, they are still protected by applicable legislation and should be protected.

10.1.7.4 Historical Monuments

There is no listed monument on the National Heritage List.

10.1.7.5 Cultural landscapes

The project area is part of established farming with varying associated infrastructure in place.

10.1.8 PROTECTED AREA WITHIN THE STUDY AREA

The project is proposed within the integrated Port of Ngqura and Coega Special Economic Zone which is situated close to the Addo Elephant National Park Marine Protected Area. Addo Elephant National Park is the third-largest national park in South Africa and is renowned for its exceptional elephant viewing, currently the primary attraction and reason for inclusion in most itineraries for visitors to the Garden Route or Eastern Cape. The park stretches from the semi-arid plains around Darlington Dam, south and east over the Zuurberg Mountain range and into the Sundays River Valley (South African National Park Management Plan, 2012 – 2025).

Addo Elephant National Park includes the Bird and St Croix Islands group in Algoa Bay as well as the Jahleel Island. The proposed project entails the development of the Single Point Mooring, Floating Storage Regasification Unit (FRSU) and submarine pipeline to the proposed power stations. During the public participation process and engagement with various stakeholders and I&APs, it was discovered that the activities are within the restricted zone of the Marine Protected Area (MPA) and any activities within the MPA are prohibited in terms of Section 48A of the National Environmental Management: Protected Areas Act 53 of 2003. Therefore, such activities will be relocated inside the Port of Ngqura as recommended by the SANParks. This will be addressed adequately during the EIA phase.

Further, the excavation of marine foundation activities will take into consideration the gazetted MPA restrictions, or prevailing oceanography, wave, current, ocean floor substrate etc. the EIA phase.

10.1.9 AIR QUALITY AND POLLUTION

There are few sources of air pollutants within the immediate proposed area. The motor vehicles along with the N2 result in elevated ambient concentrations of particulates and Nitrogen Oxides (NO₂). Sources identified near the study area and proposed project area have been listed below:

- Vehicle Exhaust Gases;
- Veld Fires;
- Loading and Offloading Raw Materials;
- Wind Erosion
- Material Handling (and
- Other fugitive dust sources such as wind erosion of exposed areas.

The theoretical flue emissions expected from the proposed project are detailed in the table below. However, more detail on the impacts of the proposed project on air quality will be provided in detail in the EIR phase.

Table 15: Theoretical Flue Gas Emissions for the Busisiwe (Aloe) Gas Plant

Flue Gas Components		Flow Rate (kmol/h)	Mol %
Carbon dioxide	CO ₂	4'160.83	9.75
Water	H ₂ O	7'909.57	18.53
Nitrogen	N ₂	30'584.19	71.68
Carbonyl Sulfide	COS	-	-
Methyl Mercaptan	CH ₄ S	-	-
Unknown VOX	VOX	-	-
Oxygen	O ₂	14.00	0.04
Total Flue GAS	Kmol/h	42'668.59	
	Nm ³ /H	955'776.34	

10.1.10 SENSITIVE AREAS, VEGETATION STRUCTURE AND COMPOSITION

The proposed area is situated within sixty-five percentage coverage of the Terrestrial Critical Biodiversity Area (CBA) while the entire site is covered with Aquatic CBA (Figure 21). There are no conservation or protected areas within and

in proximity to the site. However, there is Important Bird Habitat, such as Algoa Bay Islands, which entail the Addo Elephant National Park. The vegetation of the Eastern Cape is complex and is transitional between the Cape and subtropical floras. The vegetation within the site can be broadly divided into four categories, as follows:

- Dune vegetation (Figure 20);
- Inland vegetation (Figure 21);
- Saltmarsh vegetation (Figure 22); and
- Secondary vegetation (Figure 23)



Figure 11: Dune vegetation within the site



Figure 12: Inland vegetation within the site



Figure 13: Secondary vegetation within the site



Figure 14: Saltmarsh vegetation within the site

10.1.11 SOIL AND LAND CAPABILITY

The proposed site is situated in the south-eastern coastal region where sandy soils with variable depth and deep red sandy clay loams overlying limestone are common. The southern coastal belt is characterised by coastal sands, sandy soils, lime-containing lithosols, and weakly developed soils on rock. The soils within the SEZ are relatively deep, red, lime-rich sandy clay loams, and soils within the proposed study area are suitable for forestry and grazing.

10.1.12 SENSORY ASPECTS

10.1.12.1 Noise

In terms of the Noise Regulations, noise disturbance is created when the prevailing ambient noise level is exceeded by 7.0dBA or more. Noise is part of our daily exposure to different sources, which is part of daily living, and some of these physical attributes, which may, at times, be part of the ambient levels that people get used to without noticing the higher levels. Two aspects that are important when considering the potential impacts of a project:

- The increase in the noise levels, and;
- The overall noise levels will be created by the rail yard activities.

There will be an upward shift in the immediate environmental noise levels during the construction phase temporarily and a more permanent basis during the operational phase in the area. According to Noise Impact Assessment Safetech Specialist conducted in 2020 within Coega SEZ, the ambient noise levels varied between 40-50dB (A) and 30-35dB(A) during the day and night, respectively. This means that the impact of noise on the surroundings will be of low – medium significance. The noise within the site is generated from various sources such as marine traffic (tugs and container ships), Vehicle noise within the SEZ and along the N2; Sea noise; and Wind noise. From the above-mentioned sources of noise in the area, the sea, wind, and vehicle noise are the main contributors to the ambient noise. There are currently no noise sources that are excessively dominant within the SEZ.

The level of marine noise of future operations will be to be assessed, and dispersion or travel distances and associated risk will be indicated during the EIA phase. According to Pichegru et al. (2017), Penguins are noise sensitive; thus, the EIA phase will consider the impacts on marine species and propose mitigation measures to ensure environmental management.

10.1.12.2 Visual Aspects

Visual appreciation or dislike is subjective, and thus, what is aesthetically pleasing to some can be displeasing to others. The visual analysis of a landscape, the impact of new developments and structures tends to be complicated. It is evident from previous experience that when dealing with the reaction to landscape changes, a large diversity of opinion exists. In this regard, the applicant must be sensitive from a visual impact perspective to the requirements of

the local people, notably rural communities, and farmers. Many topographical features influence this environment, and these features will need to be utilized when selecting an alignment to minimize visual impacts and intrusions. Within the receiving environment, specific viewers (visual receptors) may experience different views of the visual resource due to the proposed development (i.e., 132kV powerline and gas-to-power facility). The visual receptors included in this study are:

- Residents i.e., Motherwell;
- Tourists; and
- Motorists.

11 METHODOLOGY FOR ASSESSING THE SIGNIFICANCE OF POTENTIAL IMPACTS

The assessment of impacts is largely based on the Department of Environmental Affairs and Tourism's (1998) Guideline Document: Environmental Impact Assessment Regulations. The assessment will consider impacts arising from the proposed activities of the project both before and after the implementation of appropriate mitigation measures.

The impacts are assessed according to the criteria outlined in this section. Each issue is ranked according to an extent, duration, magnitude (intensity) and probability. From these criteria, a significance rating is obtained, the method and formula are described below. Where possible, mitigation recommendations have been made and are presented in tabular form.

The criteria given in the table below will be used to conduct the evaluation. The nature of each impact will be assessed and described concerning the extent, duration, intensity, significance, and probability of occurrence attached to it. This will be assessed in detail during the EIA phase.

Table 16: Methodology used in determining the significance of potential environmental impacts

<p>Status of Impact</p> <p>The impacts are assessed as either having a: negative effect (i.e., at a `cost' to the environment), positive effect (i.e., a `benefit' to the environment), or Neutral effect on the environment.</p> <p>Extent of the Impact</p> <p>(1) Site (site only), (2) Local (site boundary and immediate surrounds), (3) Regional (within the City of Johannesburg), (4) National, or (5) International.</p> <p>Duration of the Impact</p>
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The length that the impact will last for is described as either:

- (1) immediate (<1 year)
- (2) short term (1-5 years),
- (3) medium term (5-15 years),
- (4) long term (ceases after the operational life span of the project),
- (5) Permanent.

Magnitude of the Impact

The intensity or severity of the impacts is indicated as either:

- (0) none,
- (2) Minor,
- (4) Low,
- (6) Moderate (environmental functions altered but continue),
- (8) High (environmental functions temporarily cease), or
- (10) Very high / Unsure (environmental functions permanently cease).

Probability of Occurrence

The likelihood of the impact occurring is indicated as either:

- (0) None (the impact will not occur),
- (1) improbable (probability very low due to design or experience)
- (2) low probability (unlikely to occur),
- (3) medium probability (distinct probability that the impact will occur),
- (4) high probability (most likely to occur), or
- (5) Definite.

Significance of the Impact

Based on the information contained in the points above, the potential impacts are assigned a significance rating (**S**). This rating is formulated by adding the sum of the numbers assigned to extent (**E**), duration (**D**) and magnitude (**M**) and multiplying this sum by the probability (**P**) of the impact.

$$S=(E+D+M)P$$

The significance ratings are given below

- (<30) low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- (30-60) medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- (>60) high (i.e., where the impact must have an influence on the decision process to develop in the area).

12 DESCRIPTION OF THE ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS INCLUDING CUMULATIVE IMPACTS IDENTIFIED

This section describes the potential impacts that the proposed project may pose on the receiving environment. Impacts associated with the relevant environmental components within the study area as identified have been assessed based on the EAP's opinion as well as consultation with specialist studies. Refer to the Tables below for the potential impacts identified.

12.1 SUMMARY POTENTIAL ENVIRONMENTAL IMPACTS IDENTIFIED

Potential environmental impacts identified during the Scoping phase are described in Table 18 below. This is not an exhaustive list but insight into the potential impacts associated with the proposed project. It must be borne in mind that the EIA phase may identify more potential impacts and will assess them in more detail.

Table 17: Potential Environmental Impact Identified

Issue	Nature	Description	Mitigation measures
Employment	Positive	<p>The development of the gas-to-power facility within SEZ in Coega will promote the area for further investment, stimulate and contribute towards the economy as well as creating several jobs within the area, including:</p> <ul style="list-style-type: none"> • The opportunities for the skilled and semi-skilled personnel in the local community during the construction as well as operational phases. • The initiatives to contribute towards educating and developing necessary skills for the locals to take advantage of opportunities associated with the proposed construction of the proposed project. <p>Local businesses could be incubated and developed to be able to take opportunities which is highly technical.</p>	<p>This is a positive impact that will improve the standard of living of the surrounding communities through the generation of employment. However, DNG Energy must promote the creation of employment opportunities for women and youth. The positions reserved for the youth and women may only be filled with persons outside of these categories if it can be demonstrated that no suitable persons can be employed from these categories.</p>
Avifauna	Negative	<p>The proposed development of the gas-to-power facility and associated infrastructure (the proposed 132kV overhead powerline) will have an impact on avifauna. The avifaunal</p>	<p>The following mitigation and recommendations are proposed to prevent and/or reduce the identified impacts:</p> <ul style="list-style-type: none"> • Conduct avifaunal walkthrough to ground-truth alignment to identify the following:

Issue	Nature	Description	Mitigation measures
		<p>impacts associated with the proposed project include the following:</p> <ul style="list-style-type: none"> • Displacement of Red List species because of habitat loss or transformation • Displacement of Red List species because of the disturbance • Mortality of Red List species due to collision with powerline earth wire/conductor. 	<ul style="list-style-type: none"> ○ high-risk sections of the power line, ○ towers requiring Bird Guards breeding sites for sensitive species and habitat. • Installation of Bird Guards on high-risk towers to ensure that large birds cannot perch directly above the relevant live hardware. • Install line marking devices on high-risk sections to make cables more visible to birds and reduce the risk of collisions • Monitor line annually to measure how many birds are killed through collision. • Install Bird Guards on relevant towers as per Eskom Transmission Guidelines <p>Once the line is operational, and management of bird nests on the power line must be strictly according to Eskom Transmission guidelines for nest management and relevant legislation.</p>
Air Pollution	Neutral	The proposed development will entail potential air pollutants during construction which may be dust emanating from site preparation and excavations. During operation, air emissions to the receiving environment because of the 1000 MW CCGT	<ul style="list-style-type: none"> • Loads on vehicles carrying dusty construction materials should be covered

Issue	Nature	Description	Mitigation measures
		and/ reciprocating engines operation (gas-to-power) facility may include the following: <ul style="list-style-type: none"> • SO₂; • NO₂; • PM10; • Benzene; and • CO. 	<ul style="list-style-type: none"> • Loading and unloading bulk construction should be in areas protected from the wind in calm conditions. • Limit access to the construction site to construction vehicles only • Impose vehicle speed restrictions on the construction site • Maintain high moisture content on exposed surface and roads by spraying with water • Maintenance programme for construction vehicles to ensure optimum performance reduced emissions. • Mitigation measures such as dust suppression can reduce the impact to become site-specific.
Visual Impact	Negative	The visual impact of an object in the landscape decreases as the distance between the observer and the object increases. The visual impact at 1km is approximately a quarter of the impact viewed from 500m, and the visual impact at 2km is one-eighth of the impact viewed from 500m. Therefore, objects appear insignificant in any landscape beyond 5km.	The following are the recommendations and mitigation measures associated with identified impacts. <ul style="list-style-type: none"> • It is recommended that a permeable steel structure be used for the pylons of the powerline to create the lowest degree of visual obstruction; • Rehabilitate disturbed areas around pylons as soon as practically possible after construction to restrict extended periods of exposed soil.

Issue	Nature	Description	Mitigation measures
		<p>The visibility of the proposed infrastructure would be a function of several factors, including landform, vegetation, views and visibility, genius loci (or sense of place), visual quality, existing and future land use, landscape character, and scale.</p> <p>The proposed project will change the visual character of the site, particularly considering the development of an approximately 4km 132kV powerline to the existing substation. However, it must be noted that there are already existing infrastructure and structures located within and around the Coega Special Economic Zone, such as the existing substation. Local variations in topography and human-made structures could cause local obstruction of views in certain parts of the viewshed.</p>	<ul style="list-style-type: none"> • Plant fast-growing endemic trees along the service road. The trees will, with time, create a screen and increase the biodiversity of the area. • Locate access routes to limit modification to the topography and to avoid the removal of established vegetation. • Utilise existing screening features such as dense vegetation stands or topographical features to place the construction camps and lay-down yards out of the view of sensitivity visual receptors.
Biodiversity	Negative	<p>The impact of terrestrial biodiversity is more for the construction phase and are included as follow:</p> <ul style="list-style-type: none"> • Vegetation clearing for access roads, laydown areas and the towers may impact intact vegetation, and result in the following: <ul style="list-style-type: none"> ○ Loss if indigenous vegetation ○ Loss of exotic vegetation ○ Loss of or displacement of fauna 	<p>The proposed project will have impacts on the local biodiversity and the following recommendations must be considered:</p> <p>During construction, any fauna directly threatened by the construction activities should be removed to a safe location by the ECO or other suitably qualified person.</p>

Issue	Nature	Description	Mitigation measures
		<ul style="list-style-type: none"> ○ Increase in alien invasive vegetation ○ Loss of ecological function ● Increased erosion risk would occur due to the loss of plant cover and soil disturbance during the construction phase. ● Impact on Critical Biodiversity Area ● Temporary loss of artificial habitat (marine biodiversity). 	<ul style="list-style-type: none"> ● Any trenches or foundations must not be left open for extended periods as fauna might fall in and become trapped. Any open trenches must be checked regularly for trapped fauna. ● All construction vehicles must adhere to the speed limit (40km/h for cars and 30km/h for trucks) to avoid collisions with susceptible species such as reptiles and small animals. ● The illegal collection, hunting or harvesting of any plants or animals at the site must be strictly prohibited. Personnel must not be allowed to wander off the construction site. <p>Avoid or minimize loss of sensitive habitats.</p> <ul style="list-style-type: none"> ● Avoid any disturbance to the No-Go habitats ● Minimize the physical destruction of any remaining primary vegetation, especially in or near wetland areas ● In general, minimize clearing and operations in habitats with a high sensitivity rating and delineate and maintain a no-go buffer of at least 100m around such habitats

Issue	Nature	Description	Mitigation measures
			<p>Reduce fragmentation of natural habitat by keeping long-terms or permanently impacted areas as close as possible together.</p>
Noise	Negative	<p>In South Africa, the assessment of noise levels in the environment is governed by the South African Bureau of Standards (SABS) noise standard 0103 – ‘The measurement and rating of environmental noise concerning annoyance and to speech communication’ (SABS 1994). Additional SABS standards cover the measurement of noise over different distances from the source (SABS 0357 – ‘The calculation of sound propagation by the Concave method’), and standards for different sectors (e.g., industry).</p> <p>There will be an upwards shift in the immediate environmental noise levels during the construction phase temporarily and a more permanent basis during the operational phase in the vicinity of the proposed study area. During construction, operation, and decommissioning phases there will Noise emissions resulting from the proposed activities. According to Noise Impact Assessment Safetech Specialist conducted in 2020 within Coega SEZ, the ambient noise levels varied between 40-45dB (A) and 30-35dB(A) during the day and</p>	<p>The following are mitigation measures proposed for noise impacts:</p> <ul style="list-style-type: none"> • Ensure that all construction equipment is well serviced as per the manufacture’s manual throughout the construction phase. • Ensuring that all operators of construction equipment receive proper training in the use of the equipment and that the equipment is serviced regularly. • All reverse noise emitting warning devices on mobile vehicles should be set as low as possible. • An environmental noise monitoring survey should be conducted during the construction phase to assess the impact and recommend further actions if required. • Implementation of the noise mitigatory measures and the noise management plan. • Ensuring that all equipment that produces a high noise impact is placed inside buildings that have been designed to reduce noise emissions.

Issue	Nature	Description	Mitigation measures
		<p>night respectively and according to the SABS 0103 acceptable noise levels at daytime is 45dBA. This implies that noise impact for the proposed project will be insignificant and a noise intrusion is disturbing if it exceeds 7dBA or more.</p> <p>As part of the construction, operation, and decommissioning phase of the proposed development of the gas-to-power facility and associated infrastructure, the noise will be generated as follows:</p> <ul style="list-style-type: none"> • Noise from construction activities for example earthmoving vehicles, service vehicles, generators drilling etc. • Demolition of all infrastructure. • It is expected that this noise may have an impact on marine organisms adjacent to the sea • Noise emissions resulting from the operational activities. 	<ul style="list-style-type: none"> • All buildings containing high noise emissions should be housed in buildings that have solid walls.
Waste	Negative	<p>Naturally, the inhabitation of the land will result in the accumulation of various forms of waste in the area. The aesthetic value of the area will decrease if such waste is not collected and disposed of appropriately. Waste material will be generated during the construction phase. Such waste may</p>	<p>The wastes will be generated throughout all the phases of the project and the following mitigation measures are proposed:</p> <ul style="list-style-type: none"> • Inform all staff about sensitive marine species and the responsible disposal of construction waste.

Issue	Nature	Description	Mitigation measures
		<p>accumulate from the worker’s campsite or litter left around the work area by the construction staff. Other waste substances may accumulate from cement bags, amongst other construction materials.</p> <p>Waste could impact the marine environment as large numbers of marine organisms are killed or injured daily by becoming entangled in debris or the ingestion of foreign particles.</p>	<ul style="list-style-type: none"> • Suitable handling and disposal protocols must be clearly explained and signboard. • All domestic and general waste generated must be disposed of responsibly. • All reasonable measures must be implemented to ensure there is no littering and that construction waste is adequately managed. • Staff must be regularly reminded about the detrimental impacts of pollution on marine species and suitable handling and disposal protocols must be clearly explained and signboard • The ‘reduce, reuse, recycle’ policy must be implemented where possible. • Do not release any pollutants, including sediment, sewage, cement, fuel, oil, chemicals, hazardous substances, wastewater, etc., into the environment.
Soil	Negative	<p>The proposed development is anticipated to contribute to loss of topsoil because of erosion and possible contamination of soil resources by hydrocarbons due to the excavation activities. Soil compaction caused by heavy vehicles and machinery surrounding the gas-to-power facility areas is also</p>	<p>Following the identified potential impacts, the following is recommended:</p> <ul style="list-style-type: none"> • Excavation of soil must be limited within the demarcated areas as far as practically possible.

Issue	Nature	Description	Mitigation measures
		<p>anticipated to have effects on the soil, which also exacerbates erosion. The proposed development is anticipated to also contribute to the loss of arable land.</p> <p>Other impacts on soils will include:</p> <ul style="list-style-type: none"> • Change of soil surface and sub-surface hydrology, depleting or reducing replenishment of moisture of lower-lying habitats depending on hillslope seeps; • Change in soil chemistry of all lower-lying habitats affected by acid leachate, causing die-off of indigenous plants and loss of resources to fauna; and • Degradation of soil moisture reserves as well as water resources in more sensitive habitats, such as riparian areas. 	<ul style="list-style-type: none"> • Ensure that all stockpiles (especially topsoil) are clearly and permanently demarcated and located in defined no-go areas. • Soil stripping must be done in consultation with a soil specialist, and careful consideration of the pre-mining soil survey is essential. • This will ensure optimal soil availability for rehabilitation. • Stockpile height should be restricted to that which can be deposited without additional traversing by machinery. A Maximum height of 3m is therefore proposed, and the stockpile should be treated with temporary soil stabilisation methods such as the application of organic matter to promote soil aggregate formation, leading to an increased infiltration rate, thereby reducing soil erosion. • Any disturbance of high potential agricultural soils must be actively avoided, should this be not feasible, the footprint of the proposed activities must be demarcated to restrict the planned activities within the infrastructure footprint as far as possible, thus minimising edge effects and

Issue	Nature	Description	Mitigation measures
			<p>reducing the extent and overall significance of impact.</p>
Wetlands	Negative	<p>There is an artificial wetland situated within the proposed site and NFEPA Wetland (Estuarine) situated 100m from the west of the study area. The proposed project will not entail any disturbance of the wetland within and around the site. The wetland associated impacts may include:</p> <ul style="list-style-type: none"> • Loss of indigenous vegetation; • Removal of exotic and cultivated vegetation cover; • Loss of or displacement of fauna; • Loss of ecological structures and function of habitats; and • Increase in alien invasive plants. 	<p>Although the project will not impact any of the wetland within and around the proposed site, mitigation measures are proposed to reduce negative impacts and incorporate some potentially positive impacts of the proposed development. Some of the most pertinent recommendations include:</p> <ul style="list-style-type: none"> • Suitable wetland rehabilitation design and implementation must ensure that wetland functionality is restored. • For the powerline routing, it is highly recommended that any sections crossing a wetland should only be constructed during the winter months.
Hydrology (surface and groundwater pollution)	Negative	<p>The following hydrological impacts may arise from the project as follows:</p> <ul style="list-style-type: none"> • The proposed project will result in the siltation and/or contamination of the sea because of the following: • The footprint clearance will expose bare soil that could result in sheet wash into the nearby sea during a precipitation event. 	<p>The following recommendations associated with the hydrological impacts for the proposed project have been made as follows:</p> <ul style="list-style-type: none"> • The construction phase of the project must take place during the dry months to minimise pollutant runoff. • Ensure that clean and dirty water separation infrastructure is in place prior to the commencement of construction.

Issue	Nature	Description	Mitigation measures
		<ul style="list-style-type: none"> In addition, dust can further be transported into the sea thereby exacerbating the impact of siltation during rainfall events. Potential groundwater contamination caused by construction activities. 	<ul style="list-style-type: none"> Prevent spillage of fuel and oils by using drip trays and storing hazardous substances and vehicles in bunded areas Place drip trays under stationary machinery, only re-fuel machines at the temporary fuelling station, install temporary structures to trap fuel spills at the temporary fuelling station. Immediately clean oil and fuel spills and dispose of contaminated material (soil, etc.) at licensed sites only. An independent ECO must be appointed during construction to ensure environmental monitoring.
<p>Spillage of hazardous substances on marine biota and risk assessment</p>	<p>Negative</p>	<ul style="list-style-type: none"> The risk of spillage of a variety of hazardous substances may occur during the use of heavy machinery, construction vehicles and vessels because of fuel leaks, refuelling, or collision. Hazardous substances could impact negatively on soil and water resources thus affecting aquatic organisms due to their toxic nature. The risk associated with the proposed projects may include loss of containment of diesel, LNG, hydrogen, ammonia, and chlorine resulting in the formation of combustible Liquids/gases/toxic clouds that could result 	<ul style="list-style-type: none"> Ensure that stringent waste management practices are always in place. Maintain high safety standards and employ “good housekeeping” practise that incorporate plans for emergencies. Use drip trays where leaks are likely to occur. Accidental diesel and hydrocarbon spills must be cleaned up accordingly. Collect and dispose of polluted soil at a registered hazardous waste disposal site.

Issue	Nature	Description	Mitigation measures
		<p>in an explosion/fire which could destroy assets as well as injuring or killing people.</p>	
Traffic	Negative	<ul style="list-style-type: none"> • During the construction phase increased heavy vehicle traffic can negatively impact on existing traffic flow in N2 road along with the proposed site. • Construction vehicles may decrease road safety for other road users, and uncontrolled movement of construction vehicles may result in unnecessary impacts on the environment through vegetation and habitat destruction. 	<p>The proposed project will have impacts on traffic and the following is recommended:</p> <ul style="list-style-type: none"> • All legal authorizations and permits must be obtained for the transportation of abnormal loads and hazardous materials on public roads; • Measures should be taken to ensure that all health and safety requirements regarding transportation activities are complied with. This may include dust covers for hauling vehicles and dust control on all gravel roads; • It is proposed that flagmen and temporary warning signs be placed at all access points where heavy vehicles will access public roads during construction, and • Controls should be in place to ensure that vehicles exiting the site are not overloaded. • The delivery of construction material and equipment should be limited to hours outside peak traffic times (including weekends) prevailing on the surrounding roads where possible; • Existing access roads must be used; and

Issue	Nature	Description	Mitigation measures
			<ul style="list-style-type: none"> • Delivery vehicles must comply with all traffic laws and bylaws. <p>Inform communities of planned construction activities that would affect vehicle/ pedestrian traffic.</p>
Climate change	Negative	<ul style="list-style-type: none"> • Increased temperature and heatwaves may present a risk. • High wind speeds and gusts may result in increased dust generation. • Floods, cyclones, and storms may cause reduced accessibility due to flooding of roads. • Draught may result in increased dust generation and increased water requirements for dust suppression. 	<p>The following mitigation measures must be taken into consideration:</p> <ul style="list-style-type: none"> • Regular maintenance checks for wind-related damage should be performed. • Regular monitoring of water quality should be implemented. • A contingency response plan should be developed if water quality deteriorates. • To reduce GHG emissions from the power plant, which include basic mitigation strategies to specific tactics and actions. Basic mitigation strategies include: <ul style="list-style-type: none"> ○ Optimisation of operational activities and logistics. ○ Implementation of a fuel management strategy, which encourages more efficient use of plant and vehicles, planning, logistics, driver education, and maintenance.

Issue	Nature	Description	Mitigation measures
			<ul style="list-style-type: none"> ○ Reduction in the amount of waste disposed to landfill and reuse of waste, which will subsequently reduce the number of vehicle movements and fuel usage. ○ Procurement of generators, which use biodiesel. ○ Exploring alternative energy possibilities. ○ Regular monitoring of fuel and energy. ○ Identification of significant energy-consuming equipment and recognising opportunities where technical efficiencies in plant and equipment can be applied. ○ Annual GHGs emissions inventory review.
Heritage	Negative	<p>The entire site earmarked for the proposed development is degraded from current land uses such as access road and Eskom distribution power line. There is no evidence suggesting any potential of recovering archaeological remains during earthmoving activities. There is established associated infrastructure development, roads and other</p>	<p>The following recommendations must be adhered to:</p> <p>From a heritage perspective, the proposed development is feasible. However, the proposed development should be approved to proceed as planned under observation that proposed the dimension of the natural gas plant, proposed</p>

Issue	Nature	Description	Mitigation measures
		<p>associated infrastructures across the entire project receiving area. The desktop survey did not identify any cultural heritage resources or archaeological resources within an area earmarked for the proposed development.</p>	<p>gas pipeline and electricity powerline do not extend beyond the study area. The footprint impact of the proposed development and associated infrastructure should be kept to minimal to limit the possibility of encountering chance finds.</p> <p>There is no burial site (graves) identified. Furthermore, should unidentified graves and burial sites be discovered during the course of construction activities, all construction activities should cease, and the site must be barricaded and SAHRA/ECPHRA or the professional archaeologist must be informed.</p> <p>Should any unmarked burials be exposed during construction, affected families must be trekked and consulted, relevant rescue/relocation permits must be obtained from SAHRA and the Eastern Cape Department of Health before any grave relocation can take place. Furthermore, a professional archaeologist must be retained to oversee the relocation process under the National Heritage Resources Act 25 of 1999.</p>

Issue	Nature	Description	Mitigation measures
			<p>When the removal of topsoil and subsoil on the site earmarked for development commences, an archaeologist must be retained for monitoring.</p> <p>Should chance archaeological materials or human burials remains be exposed subsurface, construction work on any section of the development laydown sites, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in construction scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the PHRA and NHRA regulations.</p> <p>Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resources barriers to the proposed development. The Heritage authority may approve the proposed development to proceed as planned with recommendations to implement.</p>

12.2 CUMULATIVE IMPACTS

Cumulative impacts in relation to an activity mean the past, present, and reasonably foreseeable future impacts of an activity, considered together with the impacts of activities associated with that activity, that may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities (DEA, 2014 EIA Regulations).

It must be noted that the potential cumulative impacts resulting from the proposed project will be assessed in detail during the EIA phase of this project. However, the following cumulative impacts associated with the proposed gas-to-power facility and infrastructure have been identified and assessed through the literature review:

- Fire hazard;
- Traffic generation;
- Avifaunal collisions and mortalities;
- Habitat destruction and fragmentation;
- Loss of agricultural land;
- Removal of vegetation;
- Increase in stormwater run-off and erosion;
- Increase in water requirements;
- Impact on marine biodiversity
- Job creation;
- Increased air emissions;
- Increased noise disturbance; and
- Social upliftment.

13 PLAN OF STUDY FOR EIA

The Scoping phase is fundamental as it allows for the identification of potential impacts on the environment, as well as facilitation of the process of compiling the EIA and Environmental Management Programme (EMPr). This report incorporates information from the client, specialist studies, site visits, literature reviews as well as previous environmental studies conducted in the area; it, therefore, provides a comprehensive baseline of the environment of the study area.

This Scoping Process has followed the appropriate standards and procedure for the EIA application, as set out in the NEMA and the EIA Regulations of April 2017. The study includes a description of the various alternatives and indicates those alternatives, which should be pursued as part of the detailed assessment of the EIA process. Impact significance

of the proposed activity on the environment will be assessed in the EIA phase with the assistance of the various specialist studies.

The purpose of this section is to outline how the EIA for the proposed development will proceed during the EIA phase. The detailed assessment phase of the EIA process entails the integration of the specialist studies for those potential impacts evaluated to be of significance. Relevant mitigation measures will be included in the EMP. This section provides specific terms of reference and impacts assessment methodology for utilisation by the specialist team and EAP. The Plan of Study for EIA is intended to provide a summary of the key findings of the Scoping Phase and to describe the activities to be undertaken during impact assessment.

The Plan of Study describes the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity. The task that will be undertaken during the EIA phase include but not limited to the following:

- A description of the aspects to be assessed as part of the environmental impact assessment process;
- Aspects to be assessed by specialists;
- 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;
- 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 EIA process;
- A description of the tasks that will be undertaken as part of the environmental impact assessment process; and
- Identification of 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.

The specialist studies that will be undertaken during the EIA phase include the following:

- Biodiversity Impact Assessment (flora, fauna, marine and aquatic biodiversity);
- Soil, land use and land capability Impact Assessment;
- Heritage Impact Assessment (Including Marine Archaeology);
- Avifauna Impact Assessment;
- Wetland Impact Assessment ;
- Hydrological Impact Assessment;
- Traffic Impact Assessment;
- Air Quality and Climate Change Impact Assessment;
- Socio-economic assessment;

- Visual Impact Assessment;
- Quantitative Risk Assessment

Natural gas, like other energy sources, has an impact on the environment. Although the use of LNG has been instrumental in lowered emissions and improved air quality, natural gas does have an environmental footprint, including methane emissions and carbon emissions. Subsequently, the installation of the LNG facility can be classified as Major Hazard Installations. Subsequently, in response to the comments regarding MHI, the proposed installation of the FSRU, storage facilities as well as the gas plant are classified as such, thus a Quantitative Risk Assessment has been added as a specialist required to meet the minimum requirements. This specialist was also recommended by SANParks as one of the important studies for the proposed project. It must be noted that the potential cumulative impacts resulting from the proposed project will be assessed in detail during the EIA phase of this project. However, the following cumulative impacts associated with the proposed gas-to-power facility and infrastructure have been identified and assessed through the literature review:

There are CBAs within the proposed study area and the impacts will be detailed during the EIA phase with the input of the biodiversity specialist and the above-mentioned specialist will take into consideration the 1000MW capacity proposed during the EIA phase.

The preliminary layout maps were done indicating the proposed infrastructure within the study area; however, the detailed layout will be provided during the EIA phase taking into consideration the input from specialist to include the buffers and indicate other sensitive features in the area. The specialist will also include the locations and descriptions of the proposed infrastructure positions and detail the recommendations associated with the proposed project. During the EIA phase, the cumulative impacts will be detailed taking into consideration the other similar existing infrastructure of gas to power facilities.

13.1 A DESCRIPTION OF THE ALTERNATIVES TO BE CONSIDERED AND ASSESSED WITHIN THE PREFERRED SITE, INCLUDING THE OPTION OF NOT PROCEEDING WITH THE ACTIVITY

The scoping phase assessed site, route, and structural and technology alternatives. These alternatives will be assessed further during the EIA. The preferred site and route alternatives will be the alternative with the least environmental impacts as well as providing the most benefits to the socio-economy.

13.1.1 SITE LOCATION ALTERNATIVES

There is one site location for the proposed developments, however, the developments will take into consideration the open space management and development framework plans developed for the area. The site location for the

developments falls within the Coega development demarcated zones (Zone 7, 8 and 10) which were found to be suitable for the development of the gas-to-power facility and associated infrastructure and it was selected based on the following motivation:

- The site (Zone 8) is situated close to the sea where the gas will be collected through the pipeline from the Floating Storage Regasification Unit (FSRU) to the proposed 1000 MV power plant on green fields.
- The proposed site is also located close to the existing substation where the power will be transmitted to through 132kV powerline for distribution which will address the energy crisis in South Africa
- Is the most viable location for a gas to power due to their proximity to the port and proposed related infrastructure
- Further, the identified site location will also cater for additional space for expansions of the gas-to-power facility if required.

13.1.2 TECHNICAL ALTERNATIVES

Two technical alternatives have been identified for the proposed project i.e., the overhead powerline and underground cabling. Based on the comparative analysis described in Section 8.1.2.1 above, the underground option is not viable for this development, particularly given the length, voltage (132kV), and undulating nature of the terrain; it will not be assessed further during this phase.

13.2 A DESCRIPTION OF THE ASPECTS TO BE ASSESSED AS PART OF THE ENVIRONMENTAL IMPACT ASSESSMENT

The following are aspects that have been identified and briefly describes as part of the Scoping Report. A further detailed assessment will be undertaken during the EIA phase:

- Biodiversity (flora and fauna);
- Soil, land use and land capability
- Heritage;
- Wetland;
- Hydrogeology;
- Hydrology;
- Traffic;
- Air quality;
- Socio-economic;
- Visual impacts;
- Marine Biodiversity/Aquatic;

- Marine Archaeology;
- Avifauna; and
- Climate Change.

13.3 ASPECTS TO BE ASSESSED BY THE SPECIALISTS

The DEFF Screening tool Report (Appendix J) identified the following themes as highly sensitive and would thus require specialist input:

1. Agriculture
2. Aquatic Biodiversity
3. Archaeological and Cultural
4. Biodiversity (Terrestrial and Plant Species)
5. Floral Species Assessment
6. Faunal Species Assessment
7. Palaeontology
8. Geotechnical

The studies will be undertaken as per the gazetted requirements and protocols under GNR No. 320 of 20 March 2020.

Base on input from stakeholder and public engagement as well as the EAPs assessment of the site, other specialist studies to be included during the EIR phase are listed below. Studies that are required to inform the EIA phase of the project include but not limited to the following:

9. Climate Change Impact Assessment.
10. Air quality
11. Marine Archaeology
12. Wetland;
13. Hydropedology
14. Traffic;
15. Socio-economic
16. Visual impacts

Hydrology and Geohydrology will form part of the assessment with no detailed specialist input sought as the identified studies will provide sufficient information to address these themes.

Natural gas, like other energy sources, has an impact on the environment. Although the use of LNG has been instrumental in lowered emissions and improved air quality, natural gas does have an environmental footprint, including

methane emissions and carbon emissions. Subsequently, the installation of an LNG facility is classified as a Major Hazard Installation. Accordingly, legislation, requires that a Risk Assessment be done by an approved inspection authority (AIA) registered with the Department of Labour and accredited by the South African Accreditation Systems (SANAS) before construction of the facility. Thus, the EMPR will recommend the undertaking of a Quantitative Risk Assessment as a minimum requirement before project commencement.

All specialist studies will be prepared in line with Appendix 6 of the EIA Regulations of 2014 as amended and will be undertaken by qualified, experienced, and registered specialists with experience in the region. The specialist studies will take into consideration the Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Section 24(5) (a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation (“the Protocols”) promulgated in Government Notice (“GN”) No. 320 on 20 March 2020, which came into effect on 09 May 2020. All the recommended specialist studies will be initiated after 09 May 2020; therefore, the requirements apply.

During the Pre-application meeting, the DEFF indicated that Terms of Reference (ToR) for Climate Change and Air Quality specialist be made available to the Climate Change Directorate for comments. The ToR have been prepared and are included as **Appendix F-1 and F-2**, further proof of submission to the CCD is included as **Appendix G**. Engagements with the Climate directorate will commence and proof of such correspondence will be included in the PPP report in the next phase. The Term of reference will guide the undertaking of specialist studies in the EIA phase.

Further, the specialist studies will take into consideration the comments raised by DEFF as follows:

- Considering of the 1000MW capacity in the assessments;
- Full assessment of the impact on the identified CBA; and
- Seek comments from Biodiversity and Conservation.

The ToR for the identified specialists has been included, however, the specialist declaration forms will accompany their report as part of the Draft EIR.

13.4 A DESCRIPTION OF THE PROPOSED METHOD OF ASSESSING THE ENVIRONMENTAL IMPACTS

The description of the proposed method of assessing the duration and significance is included in **Table 17** above.

13.5 AN INDICATION OF THE STAGES AT WHICH THE COMPETENT AUTHORITY WILL BE CONSULTED

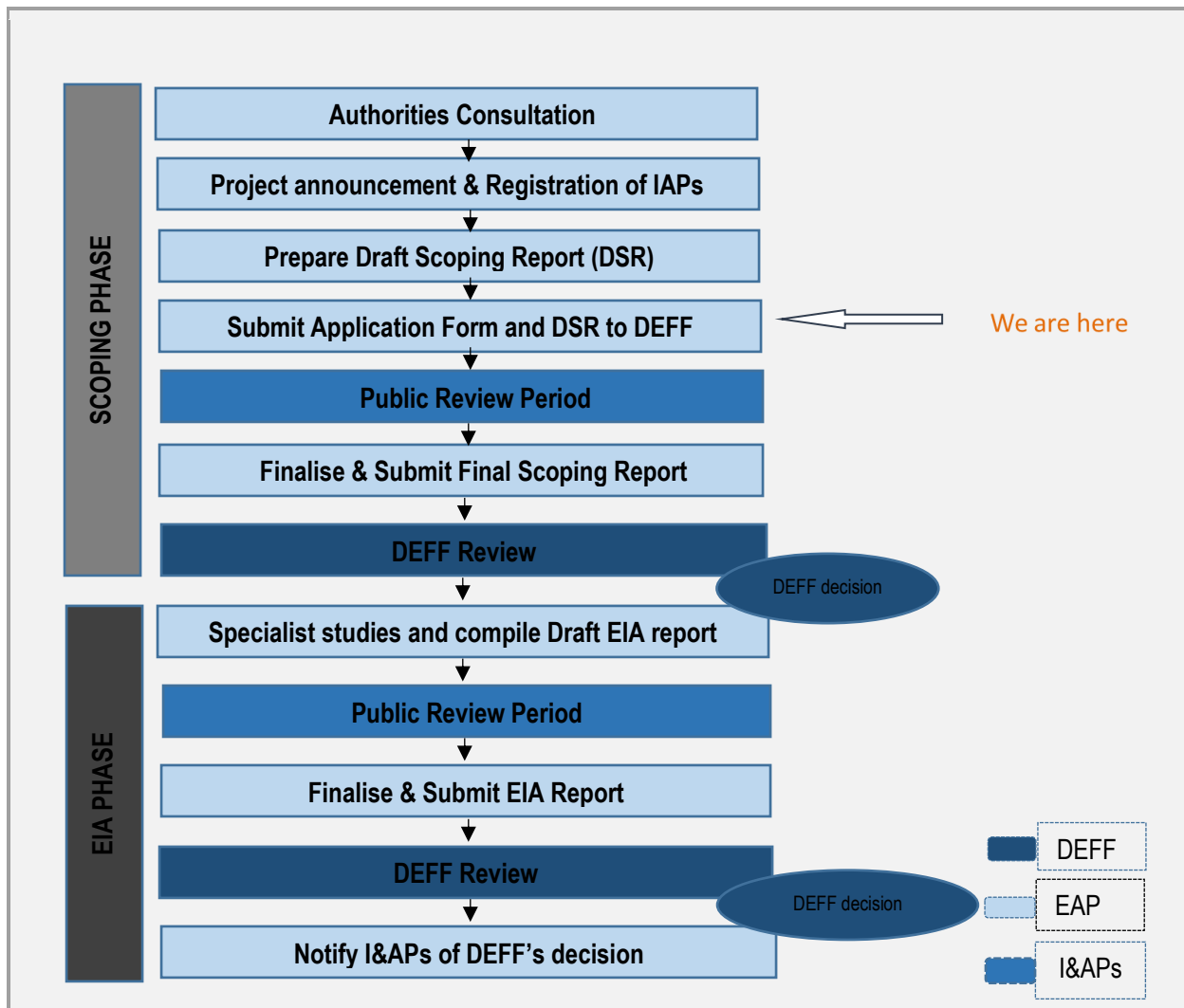


Figure 15: The different stages at which the Competent Authority will be consulted.

13.6 SCOPING PHASE

The Draft Scoping Report will be submitted to DEFF for review and comment. The EAP will consider the comments and prepare responses. Also, the report will be sent to stakeholders to review and comment for 30 days and comments or issues raised will be addressed accordingly.

13.7 ENVIRONMENTAL IMPACT ASSESSMENT PHASE

The draft Environmental Impact Report (EIR) will be prepared and distributed for public review and comments. Further, copies of the draft EIR will be submitted to the DEFF and stakeholders for comment. The final EIR which includes all comments received, specialist reports and recommendations will be submitted to DEFF for decision making.

The database of stakeholders developed during the scoping process will be used as a basis to ensure that those stakeholders involved in the Scoping Phase also participate in the EIA phase. The database will also be expanded to include I&APs that wish to be involved in the process. Registered I&APs will be informed of the availability of the draft EIR for review and will be given 30 days to provide their comments. The comments received will be incorporated into an updated Comments & Response Report (CRR).

13.8 PARTICULARS OF THE PUBLIC PARTICIPATION PROCESS THAT WILL BE CONDUCTED DURING THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The database of stakeholders developed during the scoping process will be used as a basis to ensure that those stakeholders involved in the Scoping Phase also participate in the EIA phase. The database will also be expanded to include I&APs that wish to be involved in the process. Registered I&APs will be informed of the availability of the draft EIR for review and will be given 30 days to provide their comment. The comments received during the review period will be incorporated into an updated Comments & Response Report.

Further public consultation will take place in the form of public meetings and focus group meetings as appropriate. The purpose of the public meetings would be to present the findings of the draft EIA Report as well as the alternatives considered to the relevant stakeholders, registered I&APs and the affected landowners. Nsovo will use this forum to provide more information about the proposed development including the specialist input and to provide the stakeholders with the opportunity to further comment on the proposed development. If the comments and issues raised highlight information that changes or influences the impact evaluation provided in the draft EIA Report, the necessary amendments will be made, and the final EIA Report will be compiled and submitted to the DEFF.

13.8.1 ADVERTISING

The commencement of the EIA process i.e., the Scoping Phase will be advertised in a local newspaper (The Herald Newspaper) in English on the 16th of April 2021. The newspaper advert described the proposed development and location, as well as contact details of where more information can be obtained and announcing the availability of the Draft EIR for review and comment.

Further, advertising will take place during the EIA phase and will relate to the availability of the reports for public review and announcement of public meetings that will be held at strategically located sites, which will allow for maximum attendance.

13.8.2 INTERACTION WITH DEFF AND PROVINCIAL DEPARTMENTS

Interaction with DEFF and other provincial authorities with jurisdiction on the proposed development undertaken during the Scoping Phase include the pre-application meeting presented in table below:

Type of the meeting	Authority	Date	Minutes of the meeting
Pre-application meeting	Department of Environment, Forestry and Fisheries	23 rd of February 2021	Attached as Appendix C9

The interaction will continue into the EIA Phase of the project. Further interaction will occur in the following manner:

- Submission of the final Scoping Report to DEFF;
- A consultation meeting with various stakeholders and I&APs as appropriate, to discuss the findings of the Draft EIR;
- Submission of the Draft EIRs following a public review period; and
- Notification of registered I&APs of the EA once it is issued.

The draft EIR will be reviewed by I&AP's, authorities, and key stakeholders. Furthermore, the report will also be published and the made available on Nsovo (EAP) website for public review. The **Table 19** below shows some of the key stakeholders to be consulted:

Table 18 : I&AP's, authorities, and key stakeholders to review draft EIR.

<ul style="list-style-type: none"> • Eastern Cape Department of Economic Development, Environmental Affairs and Tourism; • South African National Parks; • Coega Development Corporation; • Ocean and Coast; • Transnet SOC Limited; • South African Maritime Safety Authority; • Eastern Cape Parks and Tourism; • Eastern Cape Department of Transport and Public Works; • Eastern Cape Department of Human Settlement, Water and Sanitation; • South African Heritage Resources Agency; • Nelson Mandela Bay Metropolitan Municipality; • South African Heritage Resource Agency; • Wildlife and Environmental Society of South Africa;

- Eskom SOC Limited – Transmission; and
- South African National Roads Agency (SANRAL) SOC Limited

13.8.3 DEVELOPING A STRATEGY AND RESOLVING KEY ISSUES

A strategy for addressing and resolving key issues is to be developed and will include:

- Details on all assessments and investigations carried out;
- Use of the public participation meetings to present the findings of the reports and test the acceptability of priority issues and mitigations;
- Openly and honestly relating both positive and negative impacts of the proposed development during the public meetings; and
- Allowing the public to understand the consequences of the proposed development on the area and their livelihoods.

13.9 A DESCRIPTION OF THE TASKS THAT WILL BE UNDERTAKEN AS PART OF THE ENVIRONMENTAL IMPACT ASSESSMENT

The section below indicates the tasks that will be undertaken as part of the EIA process.

13.9.1 PREPARATION OF THE DRAFT EIR AND EMPR

The draft EIR and EMPr will be prepared as per Appendices 3 and 4 of the 2014 EIA Regulations and will include input from the specialist studies as indicated in **Section 9.3.2** above. **Contents of the draft EIR (Appendix 3) will include the following:**

- Details and expertise of the EAP;
- Location of the activity;
- A plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;
- A description of the scope of the proposed activity;
- A description of the policy and legislative context within which the proposed 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;
- A full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred location through the life of the activity;
- An assessment of each identified potentially significant impact and risk including (i) and (vii) as per the Regulations;
- A summary of the findings and recommendations of specialist reports;
- Environmental Impact Statement inclusive of (i) to (iii) as per the Regulations;
- Recommendations from the specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation;
- The final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment;
- Aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;
- A description of any assumption, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;
- A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;
- The period for which the environmental authorisation is required and the date on which the activity will be concluded, and the post construction monitoring requirements finalised; and
- The undertaking under oath by the EAP in relation to (i) and (iv) as per the regulations.

An indication of any deviation from the approved Scoping Report, including the Plan of Study including (i) and (ii) as per the Regulations;

Contents of the EMPr (Appendix 4) will include the following:

- An EMPr must comply with Section 24N of the Act and include - details of the EAP who prepared the EMPr; and the expertise of that EAP to prepare an EMPr, including a curriculum vitae;
- A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;
- A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;
- A description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed, and mitigated as identified through the environmental

impact assessment process for all phases of the development including (i) to (v) of the 2014 EIA Regulations as amended;

- A description of proposed impact management actions, identifying the way the impact management outcomes contemplated above will be achieved, and must, where applicable, include actions as indicated on (i) to (iv) of the EIA 2014 Regulations as amended.
- The method of monitoring the implementation of the impact management actions contemplated above;
- The frequency of monitoring the implementation of the impact management actions contemplated above;
- An indication of the persons who will be responsible for the implementation of the impact management actions;
- The time periods within which the impact management actions contemplated above must be implemented;
- The mechanism for monitoring compliance with the impact management actions contemplated above;
- A program for reporting on compliance, considering the requirements as prescribed by the Regulations;
- An environmental awareness plan describing the manner in which-
- (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and
- (ii) risks must be dealt with to avoid pollution or the degradation of the environment; and
- Any specific information that may be required by the competent authority.

13.9.2 PUBLIC PARTICIPATION PROCESS

The public participation process will be undertaken as per the submitted and approved Public Participation Plan and in line with the COVID-19 Regulations detailed above. The Provincial Department emphasised in their comments that the delivery of reports/documents be done in a manner provided for in section 47D of the NEMA, 1998 and the EIA Directions in GN No. 970 of 09 September 2020 (undertaking and administration of EIA and related processes under Alert Level 2 and lower Alert Level), provided that all registered Interested and Affected Parties (“I&APs”) have access to such facilities. Electronic versions of reports will be made accessible through any of the following non-exhaustive lists of methods: websites, Zero Data Portals, community or traditional authorities and cloud-based services.

Same as the approach taken during the draft Scoping phase, no hard copies will be distributed, unless specifically requested by a State department or organ of State.

13.9.3 PREPARATION OF THE FINAL EIA REPORT AND EMPR

The final EIR and EMPR will be prepared as per Appendices 3 and 4 of the 2014 EIA Regulations as amended, with thorough inclusion of input received during the PPP and stakeholder engagements. It will be submitted to DEFF via their electronic portal.

13.9.4 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

The aspects that will be assessed have been identified and their potential impacts and mitigation measures are indicated in Sections 9.1 and will be elaborated further in the EMPr. The proposed method of assessing environmental aspects is included in Table 17 above.

14 UNDERTAKING UNDER OATH OR AFFIRMATION BY THE EAP

In undertaking the draft Scoping phases of the project, the EAP has taken into consideration the requirements stipulated in the EIA 2014 Regulation as amended, as well as other relevant Acts and Regulations. The EAP hereby confirm that with the information available at the time of preparing the Scoping Report and the reports prepared by the specialists, the following has been considered in preparing this report:

- 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 the interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties.

Refer to **Appendix E** for the Declaration of the EAP.

14.1 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

The draft Plan of Study for EIA is part of the final Scoping Report. Comments/issues raised was addressed and included in the Issues and Response Report (**Appendix D4**). Input from I&APs on the plan of study will be highly considered if it is within the limits of the process.

14.2 WHERE APPLICABLE, ANY SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

No comments on the draft Scoping Report have been received. However, all the comments that will be received will be addressed verbatim accordingly in the final Scoping Report.

14.3 ANY OTHER MATTER REQUIRED IN TERMS OF SECTION 24(4) (A) AND (B) OF THE ACT.

This Report has been prepared in terms of NEMA, its respective 2014 EIA Regulations as well as other various Acts. Information that is required by the NEMA has been included in the final Scoping Report and will also be included in the EIA phase.

15 DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND KNOWLEDGE GAPS

15.1 ASSUMPTIONS AND LIMITATIONS

It is assumed that technical data supplied by the client was correct and valid at the time of compilation of specialist studies and the draft Scoping Report. Furthermore, it is assumed that the alternatives presented by the client are feasible.

15.1.1 PUBLIC PARTICIPATION PROCESS

Given the magnitude of the project and the various extent and portions of farms in which some are private and not easily accessible, it is likely that some I&APs were not reached. However, effort was made as part of the process to advertise on local media as well as placing of notices at noticeable places within the communities.

15.1.2 LITERATURE REVIEWS IS VIEWED AS CORRECT

The compilation of the reports was based on various literature reviews and specialist input which were viewed as correct at the time. However, it is acknowledged that there might be some gaps in knowledge with regards to the literature reviewed although concerted efforts were made to attain as much information as possible.

15.1.3 HERITAGE STUDY

It is possible that the Phase 1 HIA may have missed heritage resources in the project area, as some heritage structures may lie below the surface and may only be exposed once development commence.

15.1.4 VEGETATION ASSESSMENT

There is a key difference between the approach of the ecological consultant and that of the ecological researcher. In consultancy, judgements must be made and advice provided that is based on the best available evidence, combined

with collective experience and professional opinion. The available evidence may not be especially good, potentially leading to over-simplification of ecological systems and responses, and do contain a considerable deal of uncertainty.

16 FATAL FLAWS

No fatal flaws or highly significant impacts were identified during the scoping phase that would necessitate substantial redesign or termination of the project. Potential negative impacts have been identified and where the impacts were detrimental to the environment, alternatives were proposed together with mitigation measures.

The main impacts are outlined below, and recommended mitigation measures and a summary of site suitability and residual impacts will further be assessed in detail during the EIA phase. Such potential impacts include the following:

- Impacts on flora and fauna;
- Impacts on Wetlands;
- Impacts on water resources (Hydrology);
- Impacts on soil and land capability
- Impacts on heritage and archaeology;
- Visual impact to neighbouring communities, road users and tourist
- Impacts on the topography;
- Impact on air quality
- Impact on noise;
- Impact on the geology of the area
- Climate change impact; and
- Traffic impact;

The subsequent EIA phase will provide a detailed assessment of the identified aspect, rate the significance accordingly and propose mitigation measures as applicable. Site location together with the no-go option will therefore be assessed further in the EIA phase, taking into consideration the specialist studies that have been recommended as part of the Plan of Study.

17 CONCLUSION

The Scoping study was undertaken as dictated by the NEMA and the EIA Regulations of December 2014 as well as associated Regulations. The Objective of the Scoping process as indicated in the EIA Regulations process is to, through a consultative process—

- (a) identify the relevant policies and legislation relevant to the activity;

- (b) motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- (c) identify and confirm the preferred activity and technology alternative through an identification of impacts and risks and ranking process of such impacts and risks;
- (d) identify and confirm the preferred site, through a detailed site selection process, which includes an identification of impacts and risks inclusive of identification 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
- (e) identify the key issues to be addressed in the assessment phase;
- (f) 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
- (g) 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.

Accordingly, the Scoping Report has been prepared in accordance with the requirements of Appendix 2 of the National Environmental Management Act (NEMA) EIA Regulations of 2014 as amended and it contains the following information:

- (a) The details and expertise of the Environmental Assessment Practitioner (EAP) who prepared the report;
- (b) The location of the proposed activities;
- (c) A plan which locates the proposed activities to be undertaken;
- (d) Description of the scope of the proposed project including the listed activities and the associated structures and infrastructures;
- (e) Description of policy and legislative content within which the development is located and an explanation of how the development complies with and responds to the legislation and policy context;
- (f) A motivation for the need and desirability of the proposed development;
- (g) A full description of the process followed to reach the proposed preferred activities, site and proposed location of the development footprint within the site;
- (h) A plan of study for undertaking the EIA process to be undertaken; and
- (i) An undertaking under oath or affirmation by the EAP.

The Scoping phase entailed a detailed description of the baseline environment, which would form the backdrop of the impact assessment phase. Further, it allowed for the identification of critical issues and concerns based on input from

the relevant stakeholders, interested and affected parties (I&APs), and the EAP's professional judgment based on experience and expertise in the field. Various alternatives for the gas-to-power facility and associated infrastructure, i.e., gas pipeline, transmission powerline, and the gas storage tanks on the preferred site were identified and assessed. The proposed construction of a gas-to-power facility will be undertaken as detailed in the DMRE IPPPP minimum requirements and the locations deemed preferable and most feasible for projects of this nature.

The alternatives have been proposed and the primary objective was to assess the suitability of each alternative for the intended use and desired outcome, as well as to assess the overall project development on the environment. This report has comprehensively addressed the baseline environment which will form the backdrop of the impact assessment. Information provided has been supported by previous specialist studies that were undertaken in the area and more project specific specialist input will be sought in the next phases. Further the report was subjected to a 30-day comment and review period which allowed more input from stakeholders and I&APs, their comments on the draft have been considered and comprehensively addressed through email correspondence, calls, meetings, and inclusion in the report. The subsequent EIA phase will provide a detailed assessment of the identified issues, rate the significance accordingly and propose mitigation measures as applicable.

18 REFERENCES

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