ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF THE 450MW EMERGENCY RISK MITIGATION POWER PLANT (RMPP) AND ASSOCIATED INFRASTRUCTURE ON A SITE NEAR RICHARDS BAY, KWAZULU-NATAL PROVINCE

Socio-Economic Impact Assessment
Scoping Report - (SE2778)
September 2020

Prepared for:

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ABBREVIATIONS

CCGT	Combined Cycle Gas Turbine
CO2	Carbon dioxide
CO	Carbon monoxide
COx	Carbon oxides
CAGR	Compounded Average Growth Rate
DM	District Municipality
DoE	Department of Energy
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
GDP	Gross Domestic Product
GDP-R	Gross Domestic Product per Region
Ha	Hectare
I&AP	Interested and Affected Parties
ICE	Internal Combustion Engines
IDZ	Industrial Development Zone
IPP	Independent Power Producer
IPAP	Industrial Policy Action Plan
IRP	Integrated Resource Plan
LM	Local Municipality
LNG	Liquid Natural Gas
LPG	Liquid Petroleum Gas
MPRDA	Mineral and Petroleum Resource Development Act
MW	Mega Watt
NDCs	Nationally Determined Contributions
NDP	National Development Plan
NEMA	National Environmental Management Act
NEA	Not Economically Active
NGPF	New Growth Path Framework
NPA	National Port Authority
PGDP	Provincial Growth and Development Plan
PSEDS	Provincial Socio-Economic Development Strategy
RBIDZ	Richards Bay Industrial Development Zone
RMPP	Risk Mitigation Power Plant
SCGPP	Simple Cycle Gas Power Plant
SEZ	Special Economic Zone
SDF	Spatial Development Framework
TNPA	Transnet Port Authority
UPRDB	Upstream Petroleum Resources Development Bill

SPECIALIST DETAILS

Company Name:	**Urban-Econ Development Economists (Pty)Ltd**
Company Profile:	**URBAN-ECON** Development Economists (Pty) Ltd is a professional consultancy firm specialising in the field of development economics. Development economics, as advocated by URBAN-ECON, refers to the field of research where spatial principles are applied in an economic context. **URBAN-ECON** combines specialised skills, extensive experience, professional ethics and personal service delivery to provide appropriate and practical economically viable solutions. A personal approach in efficient service delivery ensures that project deliverables align with the clients' needs, therefore equipping the client with the necessary knowledge to make informed decisions.
Economic Assessment Practitioner Managing the Report	**Eugene de Beer** Cell: +27 82 779 3821 Email: eugene@urban-econ.com Position: Director Qualification: MA (Business Leadership); BSc (Town and Regional Planning) Experience: 33 Years Brief Profile: **Eugene de Beer** has been a Director of Urban-Econ since 1989 and has been with the company since 1986. The combination of town and regional planning and business economics led him to gain experience in a wide spectrum of areas. Eugene specializes in Economic Development within urban and rural areas, Business Planning and Strategy Formulation, Cost Benefit Analysis, Policy and Strategic Planning, Market Feasibility Studies including Baseline Surveys, Market Surveys, and Land/Property Economics, Business Plans and Local Economic Development. Eugene project managed a large number of economic development-related projects. Eugene is a skilled workshop facilitator and manages consultation processes as part of the economic development project and impact assessments.

1. INTRODUCTION

1.1 BACKGROUND: A BRIEF PROJECT OVERVIEW

Urban-Econ Development Economists Pty (Ltd) have been appointed by Savannah Environmental (Pty) Ltd on behalf of the client Phinda Power Producers (Pty) Ltd, to provide specialist socio-economic impact assessment inputs of the proposed 450 MW Emergency Risk Mitigation Power Plant (RMPP) in Richards Bay.

The 450MW Emergency Risk Mitigation Power Plant (RMPP) involves the construction of a gas-fired power station which will provide mid-merit power supply [1] to the electricity grid. The 450MW RMPP is planned to operate on a mid-merit basis at a minimum annual average dispatch rate of ~50% (i.e. operational between 5am and 9:30pm daily and being deployed on average for a minimum of 72% over the year during this time period) and has been designed and developed as a power balance system to manage electricity demand during peak periods to stabilise the grid, as well as provide back up support for base load generation in the event of unscheduled maintenance on the coal fired power stations.

The power station will have an installed capacity of up to 450MW, to be operated on either LPG or Naphtha as the initial fuel source and later to be converted from utilising LPG/ Naphtha to natural gas. For the initial fuel source, either LPG would be supplied by road from the existing LPG import terminal in Richards Bay or Naphtha would be supplied via pipeline from the import berths at Richards Bay.

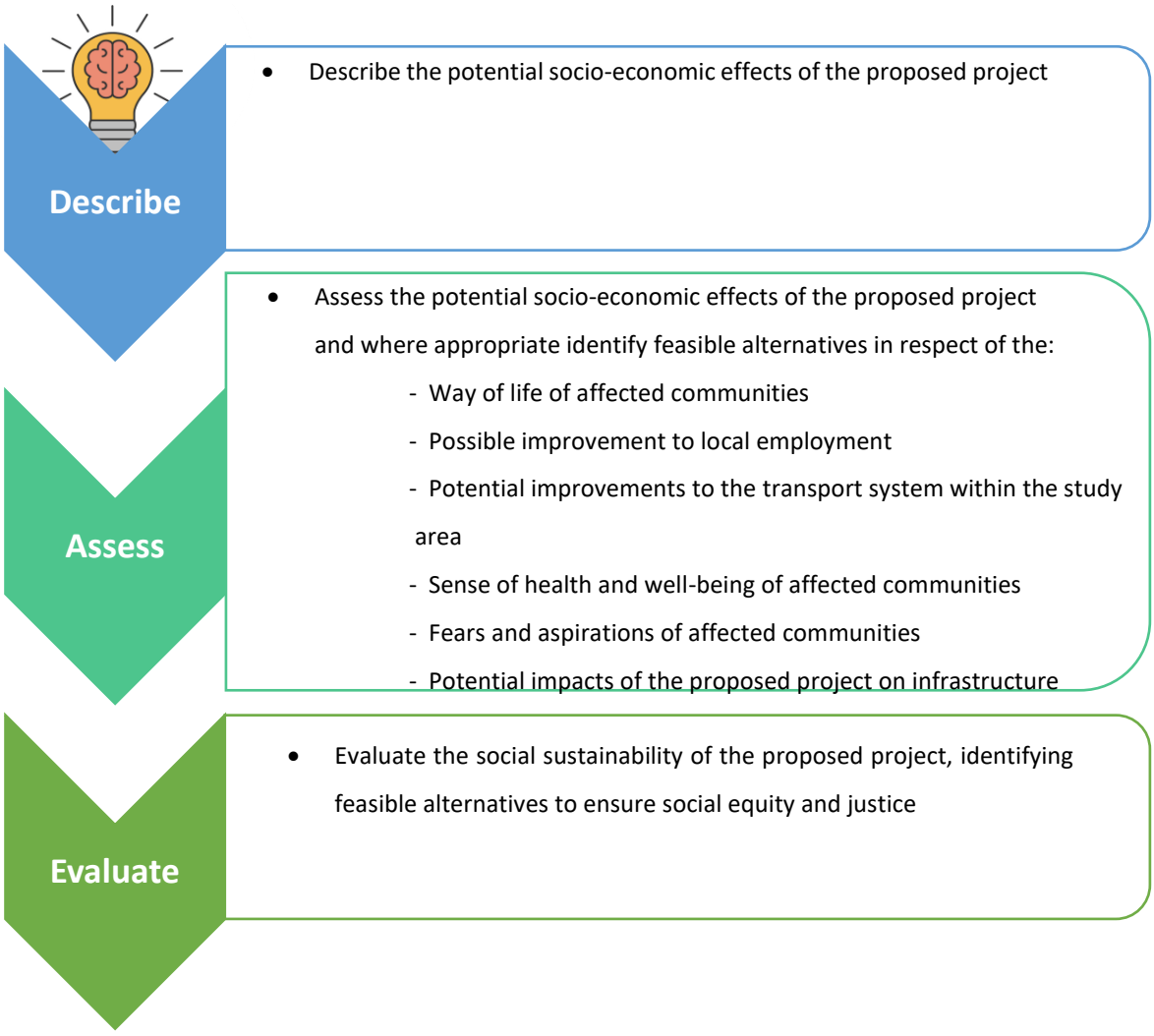
Once LNG import and regassification infrastructure is established in Richards Bay in accordance with the Department of Minerals and Energy, Transnet Limited and the IPP Office's planning criteria, natural gas would be supplied to the 450MW RMPP via a natural gas pipeline from this import terminal. The use of either Naphtha or LPG and the associated infrastructure required in respect of each of these alternative fuel sources, will be investigated further within the EIA phase and the preferred fuel source presented. The LNG terminal and regassification infrastructure and Naphtha supply infrastructure at the port of Richards Bay and the relevant pipelines do not form part of the scope of this assessment, whereas LPG infrastructure does form part of this report.

1.2 OVERALL PROJECT OBJECTIVE

The objective of this project is to undertake a Socio-Economic Impact Assessment (SEIA) for the Scoping and EIA phases for the 450MW Emergency Risk Mitigation Power Plant (RMPP). This report deals with the scoping phase.

The Social-Economic Impact Assessment (SEIA) aims to assess any potential socio-economic impacts, either positive or negative, that may arise because of a proposed development. The socio-economic impacts will be analysed for the construction and operation phases of the proposed development. Additionally, mitigation measures to reduce the severity of negative impacts and measures to optimise the positive impacts will be included in the report.

Figure 1: Project Objective



1.3 SCOPE OF WORK

The scope of work for this assessment quote is in line with the NEMA protocols released in March 2020.

The Socio-Economic Impact Assessment will:

- identify and assessment the socio-economic impacts associated with:
    - the planning and the construction phase,
    - the operational phase
    - if relevant, the decommissioning, abandonment, or rehabilitation phase of the proposed project,
- provide a general overview of the baseline conditions associated with the affected community.
- Identify and assess any potential socio-economic impacts, either positive or negative, that may arise because of the proposed project of individuals, household, agricultural related activities including forestry and commercial businesses
- To identify and assess the economic impacts of the proposed project during construction and its operation of the economic activities (gross value added, income generation and employment due to the implementation of the project
- Identify mitigation measures to reduce the severity of negative impacts and measures to optimise the positive impacts are to be included in the report.

The impact assessment will be conducted so that the requirements of the Specialist Reports prepared in terms of the Environmental Impact Regulations, 2017, Appendix 6; will be met:

a) Details of-

I. The specialist who prepared the report

II. The expertise of that specialist to compile a specialist report including a curriculum vitae

b) A declaration that the specialist is independent in a form as may be specified by the competent authority

c) An indication of the scope of, and the purpose for which, the report was prepared

d) The date and season of the site investigation and the relevance of the season to the outcome of the assessment

e) A description of the methodology adopted in preparing the report or carrying out the specialised process

f) the specific identified sensitivity of the site related to the activity and its associated structures and infrastructure

g) An identification of any areas to be avoided, including buffers

h) A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers

i) A description of any assumptions made and any uncertainties or gaps in knowledge

j) A description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives on the environment

k) Any mitigation measures for inclusion in the EMP

l) Any conditions for inclusion in the environmental authorisation

m) Any monitoring requirements for inclusion in the EMP or environmental authorisation

n) a reasoned opinion-

I. As to whether the proposed activity or portions thereof should be authorised

II. if the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMP, and where applicable, the closure plan

o) A description of any consultation process that was undertaken during the course of preparing the specialist report

p) A summary and copies of any comments received during any consultation process and where applicable all responses thereto

q) Any other information requested by the competent authority.

1.4 METHODOLOGY

The following sections outline the research methods that have been employed in the study.

1.4.1 Inception Phase

The following sections outline the research methods that will be employed in the study and outline an approach that will be followed. Research methods and principles various research methods and principles will be employed in completing the study. The following paragraphs provide a brief explanation thereof.

Review of available and relevant (technical) documents and previous research reports: confirmation of the anticipated activities with the client and determination of project objectives, specifications, and preferences.

A detailed work plan including a consultation plan will be compiled during this phase outlining the meetings, workshops, and stakeholder consultations to take place.

1.4.2 Identification of Area of Impact

The purpose of this step is to identify all the project components during construction, operation and rehabilitation and relate those components to the social areas of impact, both spatially and topically.

Based on this information the initial impacts of the project are identified from a social and socio-economic perspectives. This information directs the stakeholder consultation process and the formulation of the survey questionnaires and interview structures. Mapping may be used to illustrate the anticipated social and socio-economic impacts and relate the land uses in the area to the surrounding sites.

1.4.3 Analysis of Economic and Socio-Economic Area of Impact

Upon the collection of primary and secondary information, the study area's social, socio-economic and economic profile will be developed focusing on the following:

- Study areas composition: locational analysis, towns and settlements in vicinity of each site, resources and land capability
- Relevant government policies and other strategic documents and reviewed and the implications thereof on the project
- Land use planning analysis and community profiling: profiling of the socio-economic and economic environment where the project is to be located
- Demographic profile and income levels discusses the demographics of the area at large, specifically nearby towns and the local municipality
- Economy and labour force discusses economic and employment parameters of the local, regional and national economies
- Access to services and infrastructure
- Existing and planned developments in the area
- The economic impacts the proposed project will have on productivity of agricultural activities (if relevant)
- The influx of labourers into the area
- The risks associated with a possible increase in crime rates
- Way of life of affected communities
- Possible improvement to the local employment

- Potential improvements to the transport system within the study area
- Sense of health and well-being of affected communities
- Fears and aspirations of affected communities
- Potential impacts of the proposed project on infrastructure and services such as water, health and education
- Impacts on property values
- National, regional and local economic and social benefits
- Evaluate the social sustainability of the proposed project, identifying feasible alternatives to ensure social equity and justice
- As far as possible within the scope of this project, assess the impact of the mitigation of load shedding on the national economy.

1.4.4 Impact Assessment and Need and Desirability Analysis

Note that the Need and Desirability aspects of the project is a composite of the social and the economic assessments and other components that do not fall under the scope of the SEIA such as town planning, traffic, noise and safety aspects. In this section, social and economic components that impact on the need and desirability of the project will be determined.

The purpose of this step is therefore to analyse the economic and socio-economic implications of the project on the affected economies. The results of the impact analysis and investigation of implications from a social perspective will be interpreted and unpacked to create a comprehensive description of the effects that are to be ensued by the project during various stages. For each phase of the project's life cycle, the following groups of impacts will be examined:

- Impacts directly associated with the construction, operation, and decomposition activities, where applicable
- Secondary impacts that involve the changes in the economic activities in the environment directly or indirectly affected by the development
- Cumulative impacts that consider other projects or developments that are in the pipeline for the area
- Alignment to existing skill and supplier availability.
- be inclusive of a general overview of the baseline conditions associated with the proposed development.
- It will also be necessary to identify, assess and monitor any potential social and economic impacts, either positive or negative, that may arise as a result of the proposed development.

- Furthermore, mitigation measures to reduce the severity of negative impacts and measures to optimise the positive impacts also need to be included in the report.

All social and economic impacts identified will be assessed and categorised in line with the rating provided by the environmental specialist. A mitigation plan will be formulated whereby recommendations to reduce or eliminate the potential negative effects on the affected parties and enhance positive impacts will be provided.

1.4.5 Impact Evaluation and Mitigation

All socio-economic impacts identified will be assessed and categorized in line with the rating provided by the environmental specialist. A mitigation plan will be formulated whereby recommendations to reduce or eliminate the potential negative effects on the affected parties and enhance positive impacts will be provided.

1.5 SOURCES OF INFORMATION

1.5.1 Data and Information Gathering

The following secondary data collection activities will be undertaken as part of this step:

- Previously completed studies and reports
- Stats SA Census 2011 and Community Survey 2016
- StatsSA Labour Force Survey
- Quantec Research database
- Integrated Development Plans (IDP)
- Spatial Development Frameworks
- Local Municipal and Provincial strategic documents where applicable.

Once the secondary data are collected, it will be reviewed to understand the gaps and further inform primary data collection exercise.

1.6 ASSUMPTIONS, LIMITATIONS AND GAPS IN KNOWLEDGE

The following assumptions and limitations apply:

- The secondary data sources used to compile the socio-economic baseline (demographics, dynamics of the economy) although not exhaustive, are indicative of the trends within the study area.

- The study was done with the information available to the specialist within the time frames and budget specified.
- Possible impacts and stakeholder responses to these impacts cannot be predicted with complete accuracy, even when circumstances are similar, and these predictions are based on research and experience, taking the specific set of circumstances into account.
- It is assumed that the motivation, and ensuing planning and feasibility studies for the project were done with integrity and that all information provided to the specialist by the project proponent and its consultants to date is accurate.

1.7 OUTLINE OF THE REPORT

Section 1: Introduction

- Describe the project objectives and scope of work as well as the research methodology and source of information

Section 2: Description of the Proposed Project

- Describe the project in terms of the location, activities taking place, equipment and facilities, and anything else that constitutes the project

Section 3: Policy Review and Project Alignment

- Analyse the relevant national, provincial and local policies and evaluate the project alignment within those policies

Section 4: The Area of Impact

- Define the area of impact, the zones of influence as well as the socio-economic profile of the area.

Section 5: Preliminary Impacts Identification and Assessment

- Assesses the positive and negative impacts, their duration and extent, as well as the intensity of the impacts

Section 6: Conclusion and Recommendations

2. DESCRIPTION OF THE PROPOSED PROJECT

In this section a description of the proposed emergency 450MW Emergency Risk Mitigation Power Plant (RMPP) is provided. The site where the proposed project will be located and the activities that will take place on and off the site will be discussed.

2.1 SITE LOCATION

The project is located in the City of uMhlathuze Municipality and within the King Cetshwayo District Municipality (previously referred to as the uThungulu District Municipality) in KwaZulu-Natal. The site is in Richards Bay, and is about 3km from the Central Business District.

Map 1: Site Location

Source: Google Maps, 2020

Map 2: Plant Location within the Site

Source: Savannah and Google Earth, 2020

The project site falls within an existing industrial area within Richards Bay on land that is currently zoned General Industry for industrial purposes and is in close proximity to an existing disused 132kV electricity distribution power lines enabling connection into the grid at least cost and complexity. The project is located 12km by road from the largest LPG import terminal in South Africa thus ensuring a stable fuel supply to the power plant and Richards Bay is earmarked for the establishment of LNG imports to allow for the conversion of the RMPP from LPG to natural gas.

2.2 PROJECT DETAILS

The 450MW Emergency Risk Mitigation Power Plant (RMPP) involves the construction of a gas-fired power station which will provide mid-merit power supply [1] to the electricity grid. The 450MW RMPP is planned to operate on a mid-merit basis at a minimum annual average dispatch rate of ~50% (i.e. operational between 5am and 9:30pm daily and being deployed on average for a minimum of 72% over the year during this time period) and has been designed and developed as a power balance system to manage electricity demand during peak periods to stabilise the grid, as well as provide back up support for base load generation in the event of unscheduled maintenance on the coal fired power stations.

The power station will have an installed capacity of up to 450MW, to be operated on either LPG or Naphtha as the initial fuel source and later to be converted from utilising LPG/ Naphtha to natural gas. For the initial fuel source, either LPG would be supplied by road from the existing LPG import terminal in Richards Bay or Naphtha would be supplied via pipeline from the import berths at Richards Bay.

Once LNG import and regassification infrastructure is established in Richards Bay in accordance with the Department of Minerals and Energy, Transnet Limited and the IPP Office's planning criteria, natural gas would be supplied to the 450MW RMPP via a natural gas pipeline from this import terminal. The use of either Naphtha or LPG and the associated infrastructure required in respect of each of these alternative fuel sources, will be investigated further within the EIA phase and the preferred fuel source presented. The LNG terminal and regassification infrastructure and Naphtha supply infrastructure at the port of Richards Bay and the relevant pipelines do not form part of the scope of this assessment, whereas LPG infrastructure does form part of this report.

The main infrastructure associated with the facility includes the following:

- Main Power Island consisting of either gas turbines comprising of air intake, air filter structures and exhaust stack for the generation of electricity through the use of natural gas, naphtha or LPG; or Gas engines comprising of reciprocating internal combustion engines and exhaust stack utilising LPG or natural gas
- Generator and Auxiliary transformers
- Balance of Plant systems
- Dry Cooling systems
- Auxiliaries
- 132kV interconnecting substation and power lines connecting to the grid transmission infrastructure (The power lines to the grid transmission structure will be applied for under a separate environmental approval process)
- LPG fuel pipe routing between the LPG storage site and the power plant site **or** Naphtha import pipeline from the port of Richards Bay to the onsite storage of Naphtha (the Naphtha pipeline will be applied for under a separate environmental approval process).
- Stormwater management ponds
- LPG storage comprising of up to 15 000m^3 of storage in total, comprising of a number of either bullets or spheres storage tanks in design or Naphtha storage on the power plant site of up to 90,000m^3 in total, comprising of a number of tanks
- Once imported LNG is available in Richards Bay, the 450MP RMPP will be converted from utilising LPG / Naphtha to the use of re-gassified LNG by means of a new dedicated natural gas pipeline which will replace or supplement the LPG / Naphtha supply to the power plant (The approval for the pipeline will be conducted under a separate process)
- 3 effluent reticulation systems - i.e. 1) sanitary wastewater system; 2) oily water collection system and 3) storm water and rainwater collection system
- Diesel generator to provide start-up power to the first gas engine / turbine

The project entails the following technology and infrastructure:

2.1.1 Gas engines

Should gas engine technologies be the preferred technology, a gas engine power plant will be equipped with a number of engines depending on final engine choice as the prime mover. The engine is a spark-ignited lean-burn gas engine. The engine is connected to a synchronous, three-phase, brushless, salient pole type generator. The engine and generator are mounted on a common base frame and connected with a flexible coupling. The engine and generator form a generating set. Steam is not needed by or generated by the gas engines. No condensate and/or feed water processes are required.

The engine is cooled by a closed-circuit cooling water system, divided into a high temperature (HT) circuit and a low temperature (LT) circuit. The cooling water is cooled with roof-mounted (on top of engine hall), horizontal-type fin fan radiators with electrically driven induced draft fans. The engines

are equipped with a two-stage charge air cooling system. The cooler is built onto the engine. The gas engine power plant is designed to use LPG (100% Propane) or Natural gas as fuel. Diesel fuel will only be used in the black start diesel generator. This diesel generator will be started first to provide start-up power the first gas engine. Maximum water into the plant is 0,4 m^3/h.

2.1.2 Gas turbines

Should gas turbines technologies be the preferred technology, the gas turbine power plant will have the following major equipment in between 8 or 16 sets depending on the final choice of gas turbine:

- **Air intake and air filter structures**
    - The turbine air inlet system is the means of receiving, filtering, and directing the ambient air flow into the inlet of the compressor section of the turbine.
- **Gas turbine with a coupled generator**
    - The gas turbine compressed the inlet air in the compressor section. The air is then mixed with fuel in the combustion chamber. The hot gases from the combustion expands over the turbine section and rotates the turbine blades. The hot exhaust gas then flows to the exhaust section. The turbine is coupled to a generator.
- **Exhaust stack**
    - The exhaust stack releases the hot exhaust gas into the air
- **Cooling systems**
    - Cooling water is used to cool the air around the turbine casing and to cooling the lube oil and bearings.

2.1.3 Fuel

LPG fuel pipe routing between the LPG storage site and the power plant site or naphtha import pipeline from the port of Richards Bay to the onsite storage of naphtha. LPG storage comprising of up to 15 000m^3 of storage in total, comprising of a number of either bullets or spheres storage tanks in design or naphtha storage on the power plant site of up to 90,000m^3 in total, comprising of a number of tanks.

In the long run, once imported LNG is available in Richards Bay, the 450MP RMPP will be converted from utilising LPG/naphtha to the use of regassified LNG by means of a new dedicated natural gas pipeline which will replace or supplement the LPG/naphtha supply to the power plant.

Diesel fuel will only be used in the black start diesel generator. This diesel generator will be started first to provide start-up power the first gas engine/turbine.

2.1.4 Water

Water will be obtained from the municipality for the offices & workshop and for top-up of the cooling circuits. Proposed industrial gas turbines has low NOx combustor chambers which does not require

water for emission control. Aeroderivative gas turbines require water injection for emission control. Annual consumption 225 million litres, which will either be provided by the municipality or a bulk water supplier.

2.3 DESCRIPTION OF PLANNED CONSTRUCTION ACTIVITIES

Power plant site: The facility footprint on the site will be cleared of all bushes and trees. Topsoil will be removed; the affected area will be levelled by excavation and backfilling with excavated material. Beneath foundations 2.5 m of soil will be removed and based on the soil characteristics either the excavated soil will be re-used and compacted as fill material or new imported material will be used.

LPG terminal site: All existing structures on the site will be demolished. The site is already largely level and covered, but to the extent required site will be levelled by excavation and backfilling with excavated material. Beneath foundations 2.5 m of soil will be removed and based on the soil characteristics either the excavated soil will be re-used and compacted as fill material or new imported material will be used.

2.4 CONSTRUCTION METHODOLOGY

The construction methodology involves the following:

- Prior to initiating construction, a number of surveys will be required including, but not limited to, geotechnical survey, site survey and confirmation of the power station footprint.
- Access roads will need to be established to the site, specifically taking into consideration the use of abnormal vehicles.
- Site preparation activities will include clearance of vegetation and excavations for foundations. These activities will require the stripping of topsoil, which will need to be stockpiled, backfilled and/or spread on site.
- Thereafter civil works will take place which involves concrete works for structures such as foundation, the power block unit (which houses the engines/turbines, generator and so forth), stacks, substation and associated infrastructure.
- Mechanical and electrical work will then follow. Most major equipment pieces will be shipped to site in containers and assembled and installed on site.
- Ancillary infrastructure such as guard house, admin building, workshops and a warehouse will be established.
- As construction is completed in an area, and as all construction equipment is removed from the site, the site will be rehabilitated where practical and reasonable.

2.5 NEEDS AND DESIRABILITY

South Africa is currently experiencing electricity supply challenges, which in turn is leading to periodic periods of load shedding. As part of South Africa's long-term energy security planning, as outlined in the Integrated Resource Plan 2019 ("IRP2019"), 2000 to 3000MW of new generation capacity is required. The Minister of Mineral Resources and Energy has issued a section 34 determination for the procurement of 2000MW of dispatchable electricity generation capacity by means of independent power producers, to which the National Energy Regulator of South Africa ("NERSA") has concurred. With these approvals having been received, the Independent Power Producer Office ("IPP Office") has announced that it is initiating a procurement programme for 2000MW of dispatchable electricity generation capacity to be commissioned and connected to the electricity grid by as early as 31 December 2021, under a programme entitled the Risk Mitigation Independent Power Producer Procurement Programme ("RMIPPPP").

In RMIPPPP request for proposal issued by the IPP Office to potential bidders in the RMIPPPP programme, the IPP Office has advised that successful bidding projects for the RMIPPPP will have to demonstrate:

- Cost over the project's lifetime
- Least regret in terms of alignment with the IRP2019 objectives
- Dispatchable technologies able to operate on full flexibility from 05:00 to 21:30 daily at any range of output required by the grid at that time, with a minimum load factor of 50% during this time period on an annualised basis
- Ability to stop and start the RMPP at least 800 times per annum, or more, providing for multiple stops and starts per day of the RMPP to meet fluctuating electricity demand/supply requirements
- Grid availability to evacuate the power with the least impact on the grid in terms of grid strengthening
- Will consider both fuel-based and non-fuel based generation technologies
- Maximum capacity of 450MW.

The Project site and chosen technology solution is meets the IPP Office's objectives as:

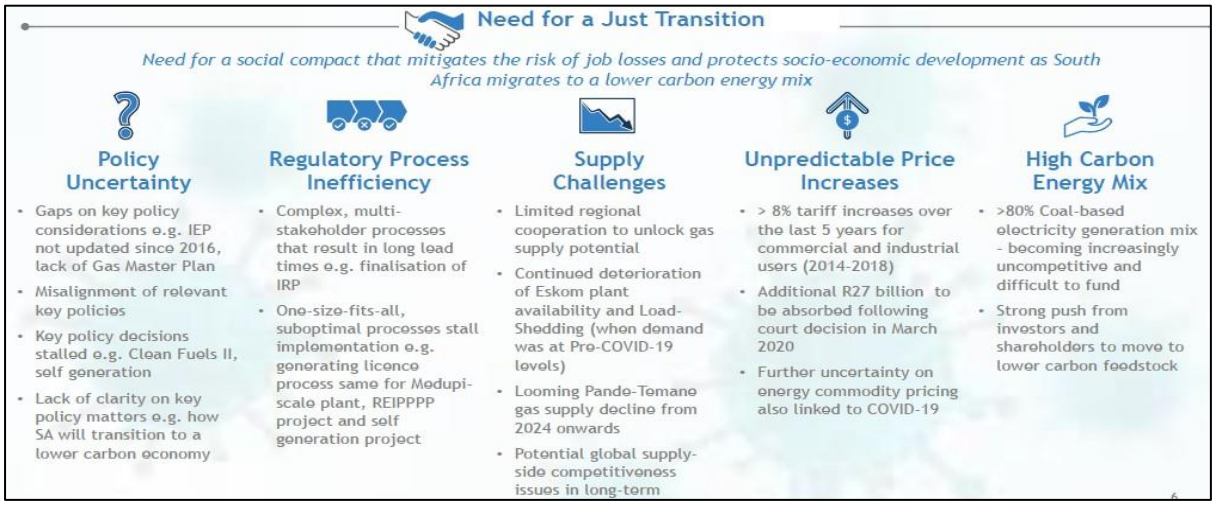
- The identified technology solution is 100% dispatchable at short notice, able to provide electricity supply into the grid as and when is required

- The identified technology is flexible, capable of operating across a wide variety of dispatch profiles, from base load to peaking
- The project site is located in close proximity to an existing disused 132kV electricity distribution power lines enabling connection into the grid at the least cost and complexity
- The project site is located 12km by road from the largest LPG import terminal in South Africa thus ensuring a stable fuel supply to the power plant and Richards Bay is earmarked for the establishment of LNG imports to allow for the conversion of the RMPP from LPG to natural gas
- The project site falls within an existing industrial area within Richards Bay on land that is currently zoned General Industry for industrial purposes.

In addition to the introduction of much needed new electricity generation capacity onto the grid, the project will also provide much needed direct investment into the Richards Bay area and will stimulate additional business in and around the power station in support of its operations.

Business for South-Africa (BSA) has released a document entitled “Energy Sector Economic Recovery Strategy” in June 2020. The key components deal with the need for alignment of the energy sector, with a combined solution for electricity, gas and liquid fuels. South Africa's energy sector is likely heading for a significant contraction over the next 12 months; a demand reduction of between 10-40% is expected across key energy commodities (electricity, petrol, diesel and jet fuel). There are 6 key structural constraints need to be addressed:

Diagram 1: Structural Constraints facing the Energy Sector



Source: BSA, 2020

By addressing these constraints, the energy sector could play a dual role in driving South Africa's economic recovery, primarily as a catalyst for growth in the economy but also as a driver of direct and

indirect jobs. Two cross cutting interventions were identified as key enablers to unlocking this potential:

- Launching a Green Stimulus
- Aligning a National Energy Strategy across all key policies and plans

There were 15 priority interventions identified in the electricity, liquid fuels and gas sectors; these interventions, if executed effectively, could result in:

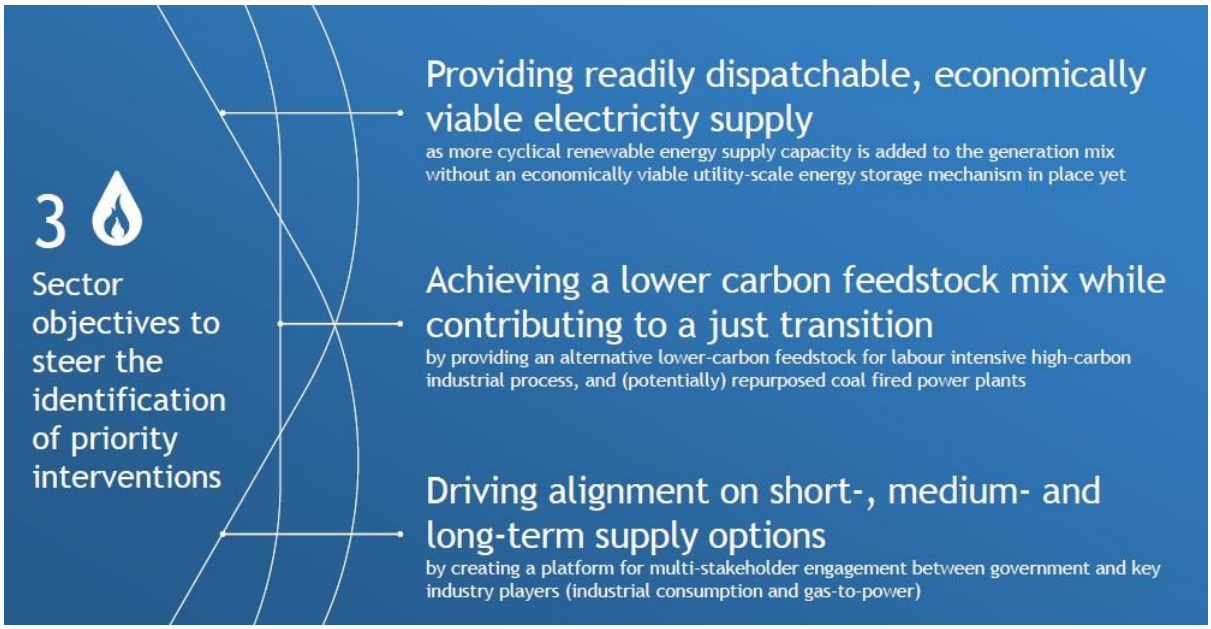
- The protection of 164,000 – 248,000 jobs (as a conservative estimate) by providing economically viable, lower carbon and reliable energy to industrial, commercial and private consumers
- Creating 87,000 new job opportunities through construction of new or enhancement of existing capacity, and stimulating new manufacturing value chains

Figure 1: Policy and Stakeholder Alignment

Source: BSA, 2020

SA's current energy mix is highly carbon intensive (>80% of electricity generation is coal based). Gas can provide readily dispatchable, lower carbon supply capacity as more cyclical Renewable Energy supply is added to the generation mix. Gas can also serve as a lower carbon industrial feedstock (e.g. CTL process) and supply for industrial process heat. The report identified three main objectives for the gas sector.

Diagram 2: Gas Sector Objectives



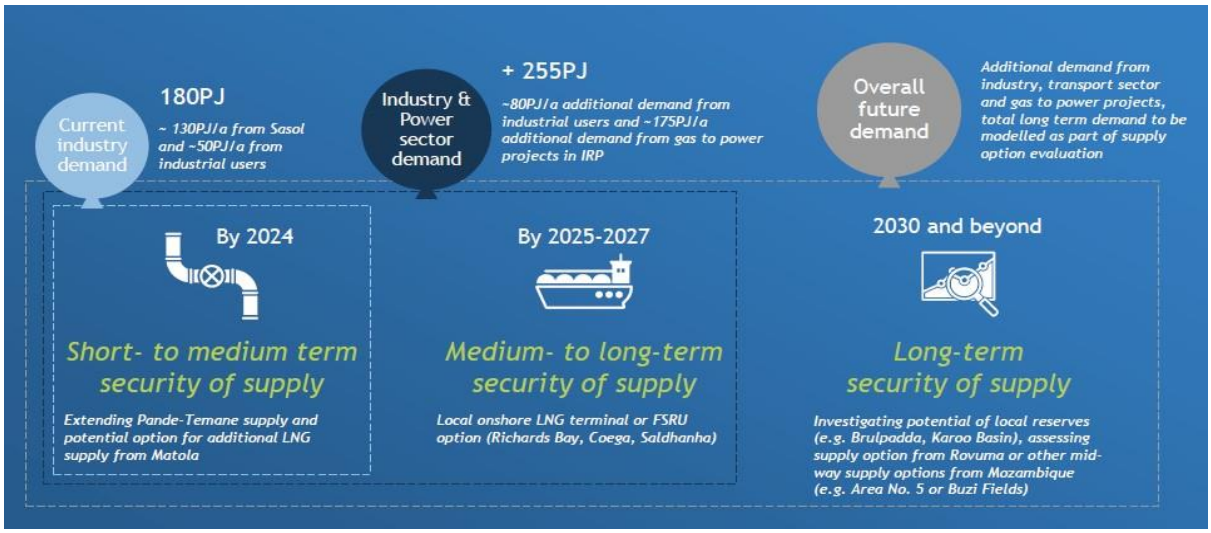
Source: BSA, 2020

Power sector demand

- Up to 175PJ/a of additional demand if gas-to-power projects in IRP and other industrial gas-to-power projects come online by 2030 (+1GW by 2024, +2GW by 2027)
- Potential for gas to be used for repurposing of decommissioned power stations -thus reducing construction costs and contributing to a just transition
- Industrial, mining and logistics demand
- Proven local gas value chain with large latent demand that will readily procure more gas if available (approximately 8000 downstream users excl. Sasol, current deficit estimated at more than double current demand at 80PJ/a)

There are a number of supply options that will vary in the short to long term, these options are illustrated in Diagram 3.

Diagram 3: Gas Supply Options



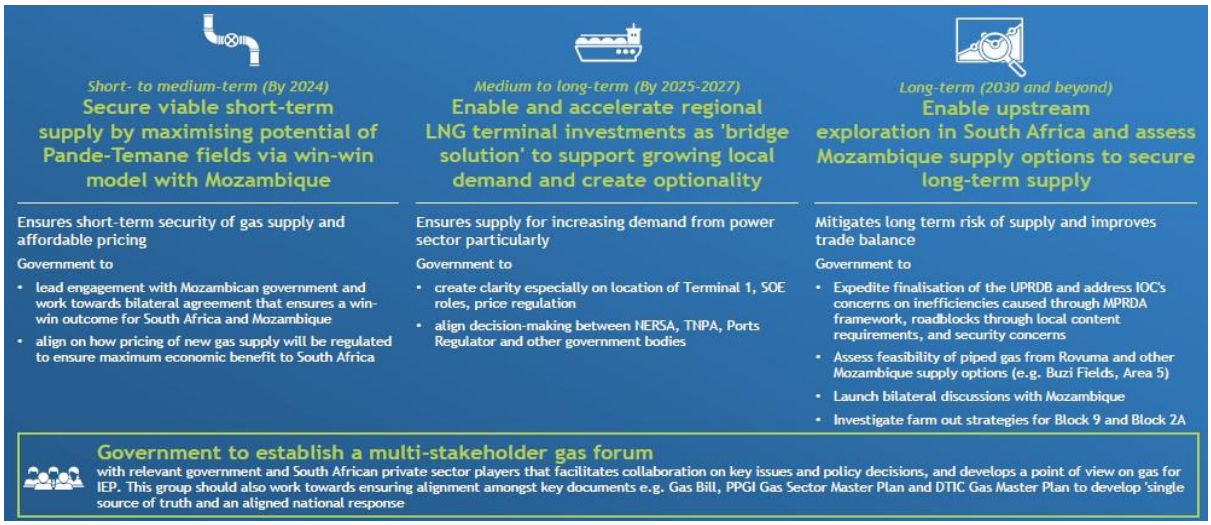
Source: BSA, 2020

Implementing these supply options will result in a long-term security of supply for gas to energy projects in South Africa. In order to realise these options three priority interventions are proposed; these include:

1) Secure viable short-term supply by maximising potential of Pande-Temane fields via win-win model with Mozambique
2) Enable and accelerate regional LNG terminal investments as 'bridge solution' to support growing local demand and create optionality
3) Enable upstream exploration in South Africa and assess Mozambique supply options to secure long-term supply

The establishment of a multi-stakeholder gas forum and the abovementioned interventions are unpacked in Diagram 4.

Diagram 4: Interventions



Source: BSA, 2020

3. POLICY REVIEW AND PROJECT ALIGNMENT

A policy review plays an integral role in the initial stages of a project. The review provides an indication of whether a project is aligned with the goals and aspirations of the developmental vision across the three spheres of government. Furthermore, the analysis signposts any red-flag or developmental concerns that could jeopardise the development of the project and assist in amending it, preventing costly and unnecessary delays.

The following government strategic documents applicable to the delineated project site area were examined:

- National (South Africa):
    - New Growth Path Framework (NGPF) (2011)
    - National Development Plan (NDP) 2030 (2011–2030)
    - Integrated Resource Plan for Electricity (IRP) 2010-2030
    - Industrial Policy Action Plan (IPAP) (2016/2017–2018/2019)
- Regional (KwaZulu-Natal Province):
    - KwaZulu-Natal Provincial Growth and Development Plan (2016)
    - Provincial Spatial Economic Development Strategy (PSEDS) (2016)
- Local (uThungulu DM and uMhlathuze LM):
    - uThungulu District Municipality Growth and Development Plan (2015)
    - uThungulu District Municipality Integrated Development Plan (IDP) 2011/12-2016/17 (2016)
    - City of uMhlathuze Municipality Integrated Development Plan (IDP) (2016)
    - Richards Bay Integrated Development Zone (RBIDZ) (2016)
    - uThungulu Spatial Development Framework (SDF) (2015)
    - City of uMhlathuze Spatial Development Framework (SDF) (2016)

3.1 NATIONAL POLICIES AND STRATEGIC DOCUMENTS

3.1.1 New Growth Path Framework (NGPF)

The vision of the New Growth Path Framework (NGPF) is to ensure that jobs and decent work are at the centre of economic policy (Department of Economic Development, 2011). The key problem / issues are mass joblessness, poverty, and inequality. The lack of access to energy is identified as a major concern for the growth of the economy. Therefore, increased access to energy would have a profound effect on curbing poverty and unemployment. The framework states that public investment can create 250 000 jobs per annum in energy, transport, water, communications infrastructure and

housing. These jobs are said to be in four activities, the construction of new infrastructure; the operation of new facilities; expanded maintenance; and the manufacture of components for the infrastructure programme (Department of Economic Development, 2011).

3.1.2 New Development Plan (NDP) 2030

The National Development Plan (NDP) 2030 aims to address parts of the South African triple development challenges of poverty and inequality by 2030. The Plan is informed by the NGPF and states that the diversification of energy such as liquefied natural gas imports and the associated infrastructure is imperative as it could provide economic and environmentally positive alternatives for power production (National Planning Commission, 2011). Furthermore, the plan states that combined cycle gas turbines provide flexibility in the power system and complements variable supply from renewable energy sources. It envisaged that by 2020, liquefied natural gas infrastructure would be in place to power the first combined cycle gas turbines (National Planning Commission, 2011), but this planning has slipped and it is the writers understanding that LNG importation is planned for the 2023/4 timeframe.

The Integrated Resource Plan for Electricity (IRP) 2010 – 2030 promulgated in 2011 and updated in 2019 argues that the development of the electricity generation sector can support the growth of the national economy (Department of Energy, 2019). The IRP2019 was finalised and published in October 2019 and provides for 2000 – 3000MW of new generation capacity of a variety of sources, of which the 2000MW RMIPPPP has been launched and for 3000MW of gas fired electricity generation, 1000MW in 2024 and 2000MW in 2027.

The IRP calls for a diversified energy mix, in terms of new generation capacity. The plan asserts that natural gas presents the greatest significant potential in the energy mix. It is envisaged that the gas-derived electricity will be through open-cycle gas turbines (OCGT) and combined cycle gas turbines (CCGT), which should generate 3.9GW and 2.4GW, respectively. While the above-mentioned supply is the target for 2030, the IRP asserts that CCGT technologies and an LNG terminal needs to be built urgently so that the first CCGT capacity is available by 2020 to assist with electricity supply in the short run. The IRP recognises that Gas Fired Combined Cycle Gas Turbines (CCGTs) present the most significant potential for developing the gas market in South Africa. The advantages of developing CCGT plants have been listed as:

- Relatively short construction and commissioning lead times
- Low capital costs per unit of capacity

- Increased efficiency using simple and proven technology
- Operational flexibility as they can be ramped up or down to suit the system demand on an hourly or daily basis (Department of Energy, 2019).

The IRP 2019 indicated that whilst the plan indicates a requirement for 2000 – 3000MW in 2023 and 2000 MW in 2027, at a 12% average load factor, this is premised on certain constraints that have been imposed on gas, taking into account the locational issues like ports, environment, transmission etc. This represents low gas utilization, which will not likely justify the development of new gas infrastructure and power plants predicated on such sub-optimal volumes of gas. Consideration must therefore be given to the conversion of the diesel-powered peakers on the east coast of South Africa, as this is taken to be the first location for gas importation infrastructure and the associated gas to power plants. It must be noted that that the unconstrained gas is a 'no regret option' because the power system calls for increased gas volumes when there are no constraints imposed.

3.1.3 Industrial Policy Action Plan (IPAP)

The Industrial Policy Action Plan (IPAP) represents a significant step forward in scaling up the country's efforts to promote long-term industrialisation and industrial diversification. It has been recognised that the Southern African region is fast transforming into an oil and gas jurisdiction led by major on and offshore gas finds in Mozambique, Tanzania, Botswana and Namibia. From a South African perspective, the scale of the find in neighbouring Mozambique (estimated at between 200-250tcf) is of particular significance. Accordingly, the plan states that a key industrial growth path is gas-based industrialisation (Department of Trade and Industry, 2016).

In the updated IPAP (2018/2019 – 2020/2021), the DTI also emphasizes the promotion of a regional gas strategy and the entry of private sector players to guarantee the delivery of the new resources in notable volume into the South African gas market industrialisation (Department of Trade and Industry, 2018). The main short-term objective is to attract investors to explore and develop South Africa's natural gas resources through the establishment of natural gas markets which will contribute to the expansion of domestic industrial gas utilisation and capitalising the infrastructure necessary to connect supply to growing demand. The main objective in the long-run is the establishment of a "vibrant gas industry delivering affordable and secure gas supply to the heavy industry, manufacturing and transport sectors" (Department of Trade and Industry, 2018).

3.1.4 Gas Utilisation Master Plan (GUMP)

The Gas Utilisation Master Plan (GUMP) was created to assist in achieving the objectives of the IRP by driving the development of the gas-to-power industry in South Africa. According to the GUMP, the social economic advantages of establishing a large gas-to-power industry include job creation (during construction and operation), industrial development, the potential to use LNG instead of diesel, and a source of cheaper energy. South Africa's gas-to-energy development plan spans 30 years, in which gas supply is envisaged to include local indigenous supply as well as imports through pipelines and by ship.

The GUMP identifies challenges facing the development of the gas industry in South Africa. These are: limited domestic supply; no immediate gas demand as yet; lack of gas infrastructure (no LNG import terminal yet); no gas master plan. It is envisaged that by the time construction of the proposed development is complete, more gas infrastructure will be available, such as the LNG import terminal at the Richards Bay port. However, the proposed development itself contributes towards gas infrastructure and, therefore, helps alleviate one of the challenges facing the industry. GUMP identifies that there are potential gas reserves in the Karoo basin, deep offshore, and at the Ibhubesi basin. Through the local pipeline infrastructure, the gas-fired station in Richards Bay could acquire local gas cheaply if the infrastructure to obtain it is developed. However, as identified, the lack of said infrastructure is currently a constraint. The timing of the development will likely fall in-line with the development of other gas-related infrastructure such as the LNG port in Richards Bay and the extension of gas pipelines; therefore, the proposed project supports the implementation of GUMP.

3.1.5 Risk Mitigation IPP Procurement Programme (RMIPPPP)

The promulgation of the IRP 2019 and associated ministerial determinations guide the roll out of the Independent Power Producers Procurement Programme (IPPPP). The IRP 2019 indicates that there is a short-term electricity supply gap of approximately 2 000 MW between 2019 and 2022.

The 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 current 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.

In response to the Determination, the 2 000 MW of new generation/supply capacity will be procured from a range of energy technologies and are based on the following criteria:

- It will be technology agnostic
- Based on the plant-performance needs of the electricity system operator
- It will procure dispatchable flexible generation that should be able to provide energy, capacity and ancillary services
- Should be able to operate between 5h00 to 21h30
- It must have an AGC load following ability, flexible capacity factor and must be "scalable" with changing capacity requirements
- Must be able to connect power to the grid by June 2022

3.2 PROVINCIAL POLICIES AND STRATEGIC DOCUMENTS

3.2.1 KwaZulu-Natal Provincial Growth and Development Plan (PGDP)

Similar to the NDP and NGPF, the KwaZulu-Natal Provincial Growth and Development Plan (PGDP) aims to curb poverty, inequality and achieve shared growth. The PGDP has identified spatial marginalisation as one of the key issues to be addressed through ensuring economic opportunities that will meet the majority of the population's needs. The plan states that alternative sources of energy are a priority and must be realised. This energy is anticipated through gas and diesel turbines which were anticipated to be on-line in 2016 (Provincial Planning Commission, 2016).

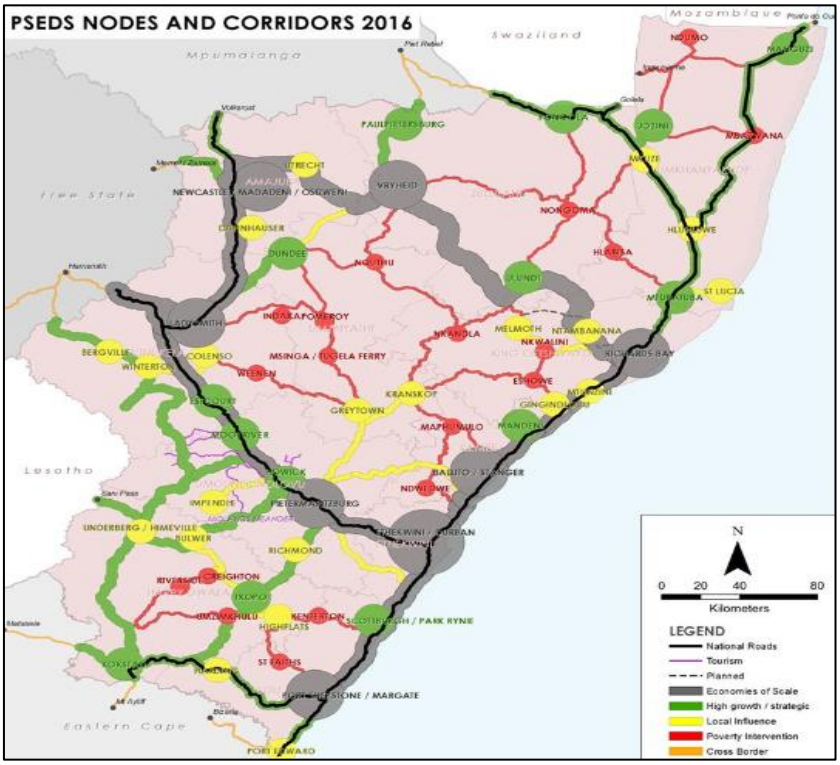
A catalytic project is defined as a project of significant scale and scope that will make a substantial impact and contribution to the achievement of the vision and goals of the Province. The Industrial Development Zone (IDZ) is defined as a game changer in the context of catalytic projects. The proposed RMPP will be located near the IDZ Phase 1D (Provincial Planning Commission, 2016).

3.2.2 Provincial Spatial Economic Development Strategy (PSEDS)

The Provincial Spatial Economic Development Strategy (PSEDS) serves as a framework for the prioritisation of spatial economic development initiatives in the province. It is meant to capitalise on complementarities and facilitate consistent and focused decision making. In addition, the purpose of the strategy is to ensure that investment occurs in the sectors that provide the greatest socio-economic return to investment (Department of Economic Development, 2016).

Map 3 demonstrates that the proposed project area is located in an area demarcated as having economies of scale. Economies of scale are achieved when the number of units produced, or the volume of services sold are at such a large scale that it allows for the reduced production costs, ultimately increasing the competitiveness of the product or service. High demand for the product or a service is a pre-requisite for economies of scale; this implies that the area where the proposed project is to be built enjoys high demand for selected goods and services, including electricity. The area is already highly industrialised and hosts an IDZ, which continuously seeks new investments in ICT, agro-businesses, and metals beneficiation. Therefore, the project is to be located in a potentially high economic growth region.

Map 3: KZN Spatial Economic and Development Strategy Nodes and Corridors (PSEDS, 2016)



Source: Provincial Spatial Economic Development Strategy,2016

3.3 LOCAL POLICIES AND STRATEGIC DOCUMENTS

3.3.1 uThungulu District Growth and Development Plan (DGDP)

The [1]uThungulu District Growth and Development Plan (DGDP) has an integral role in the integration and alignment of the goals of the NDP at national level and PGDP at provincial level. Therefore, the purpose of the DGDP is to translate the Provincial Growth and Development Plan into a detailed implementation plan at a district level (Uthungulu DM, 2015). One strategic intervention identified

[1] UThungulu District Municipality was renamed King Cetshwayo Ditrict Municipality in July 2016

by the plan is the implementation of the roll-out programme for alternative sources of energy supply in the district where the gas-fixed electricity generation is classified as alternative energy supply.

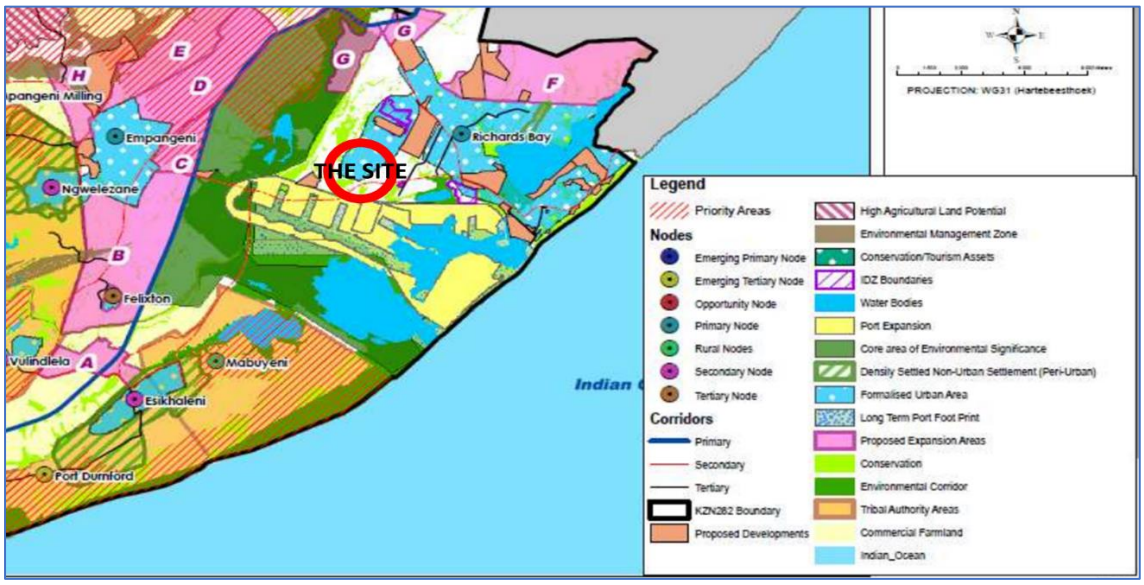
3.3.2 uThungulu District Municipality Integrated Development Plan IDP

The vision for the uThungulu District Municipality Integrated Development Plan IDP 2016/17 is to be *"an economically viable district with effective infrastructure that supports job creation through economic growth, rural development and promoting of our heritage"* (uThungulu DM, 2016;12). As indicated in the vision, one of the goals is infrastructure development and service delivery. In addition, the plan further states that a combined strategy between the King Cetshwayo DM and Eskom is urgently required to form an integrated and sustainable electricity service delivery within the district. The Richards Bay Industrial Development Zone (RBIDZ) is identified as a catalytic project (uThungulu DM, 2016). Quintessentially, the objective is to promote economic growth in the District and improve the socio-economic conditions of residents.

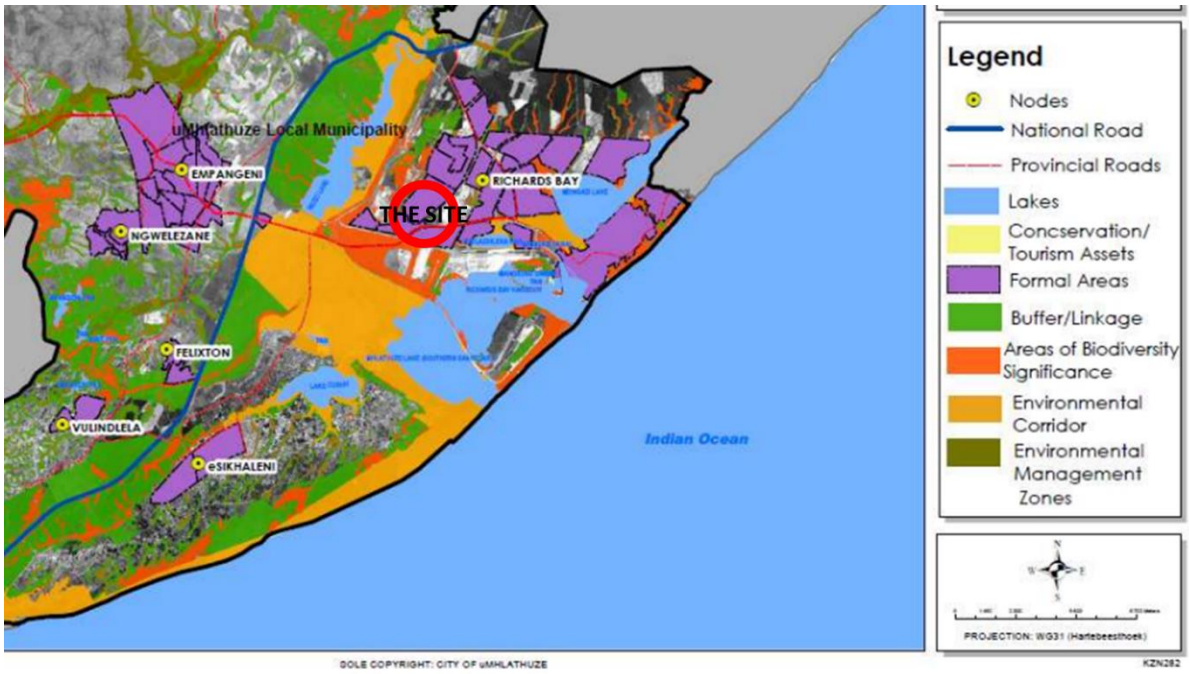
3.3.3 City of uMhlathuze Municipality Integrated Development Plan and SDF

Like the District IDP, the City of uMhlathuze Municipality Integrated Development Plan's objective is to promote economic growth in the District and improve the socio-economic conditions of residents (uMhlathuze LM, 2016). The unsustainable use of resources, including energy, will ultimately compromise the Municipality's energy security. Challenges similar to these prompted the IDP to focus on sustainable solutions to the energy crisis. Therefore, the aim is to reduce the demand for energy and simultaneously investigate alternative energy sources. The uMhlathuze Local Municipality: SDF 2017/2018 – 2021/2022 (Review March 2018) indicates that the site falls within the existing urban area. The site falls within an already industrial zoned area.

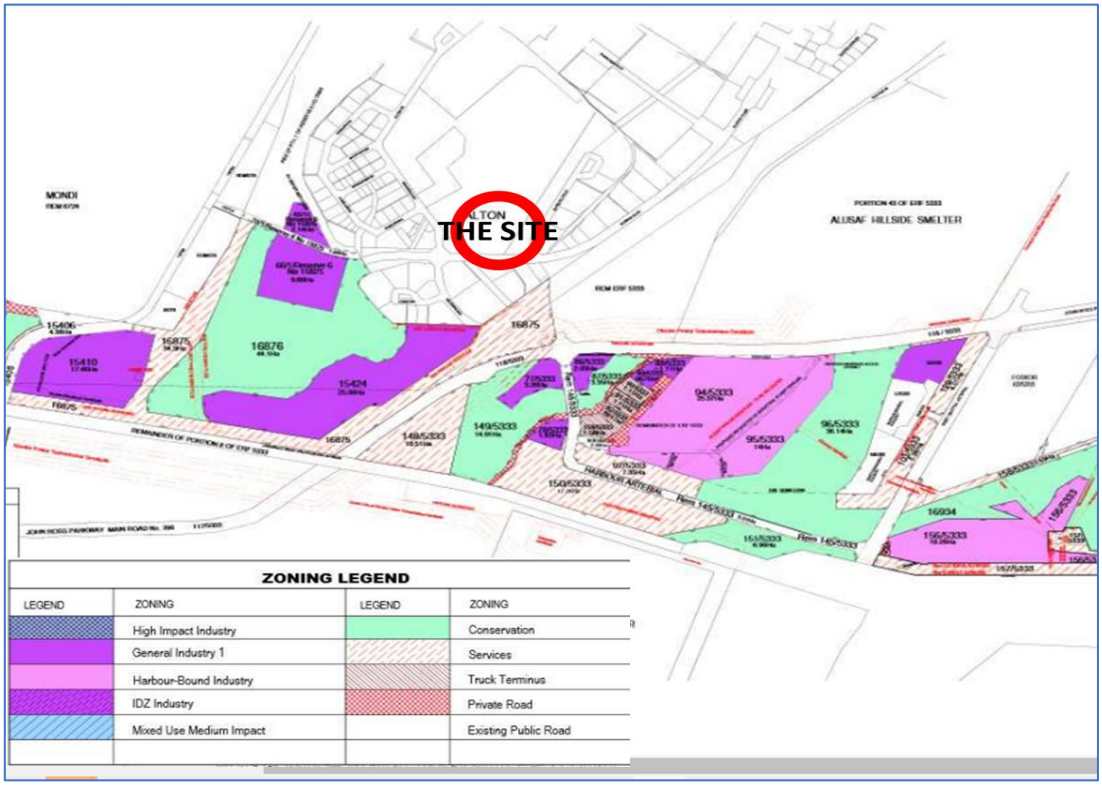
2 Cut-out map from the uMhlatuze SDF, 2018



The uMhlathuze Local Municipality: SDF 2017/2018 – 2021/2022 states that the port expansion with associated industrial development are the single most significant opportunity in the area with tremendous potential to grow the local, regional, and national economy.



The site is closely associated with the development of the Richards Bay Industrial Development Zone. Where the site is located within the existing industrial area of Alton it is about 500m from the closest point of the IDZ.



3 Cut-out map from the uMhlatuze SDF, 2018

3.3.4 Richards Bay Industrial Development Zone (RBIDZ)

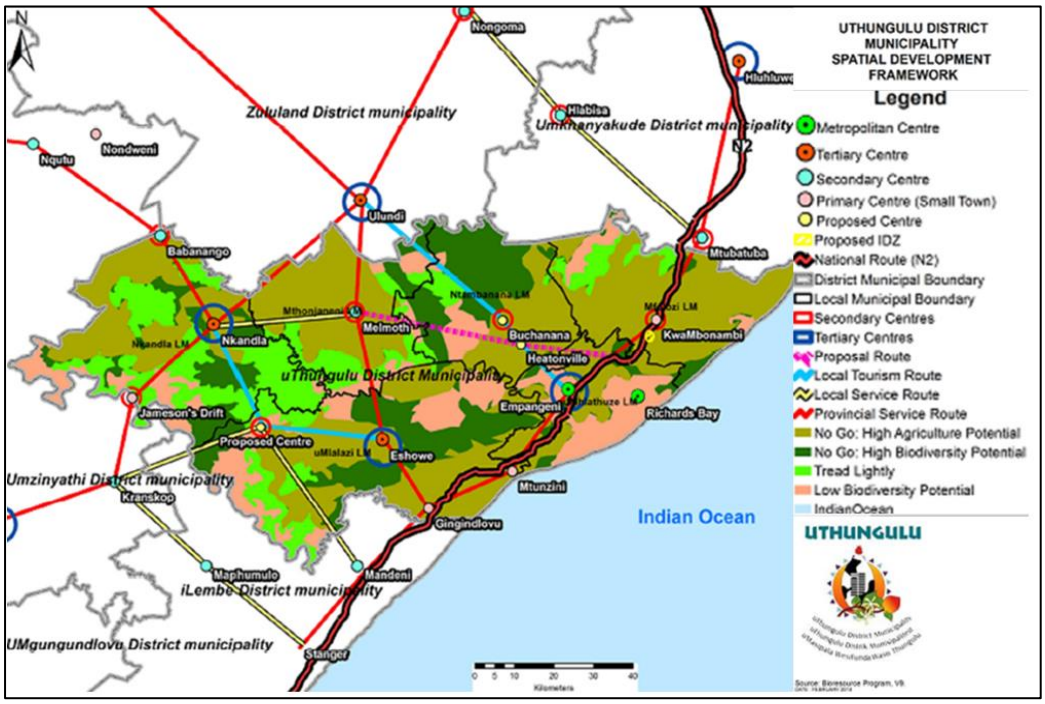
The purpose of the Richards Bay Industrial Development Zone (RBIDZ) is to utilise the competitive advantage of the Richards Bay area to attract sustainable investments that stimulate economic growth, job creation, beneficiation of resources and the empowerment of people. Amongst other industrial efforts, the RBIDZ has assumed a role in stewarding the establishment of an energy production hub (Rchards Bay IDZ SOC, 2016). In addition, non-renewable energy is one of the economic comparative advantages and these are key maritime opportunity areas for gas-to-power facilities. In this quest, there are ongoing collaborations with the Department of Energy to ensure that the province of KwaZulu-Natal contributes significantly to the amelioration of the burdensome load shedding phenomenon. Furthermore, these efforts will produce diversified energy generation capacity for renewable sources.

3.3.5 uThungulu (now King Cetshwayo) District Municipality Spatial Development Framework

The uThungulu District Municipality Spatial Development Framework serves to provide a high level spatial plan, which can be used by municipalities to guide local level spatial, precinct and statutory planning. The SDF employs a structural approach aimed at identifying and restraining the current inefficiencies in the use of district and regional space (uThungulu DM, 2015).

From an infrastructure perspective, the SDF calls for centralisation and rationalisation in the provision of infrastructure and services, using available space in a quest to address the inefficiencies and costs (social, environmental and economic) associated with uncontrolled urban sprawl. Considering economic issues, the provision of spatial locations where distinct typologies of economic development is appropriate and can be used to benefit local communities and the regional economy without further destroying the dynamic balance between landscape and society, is recommended (uThungulu DM, 2015). Map 4 illustrates that the proposed project area is in a low biodiversity potential area. It should be noted that the site is in an already zoned industrial area. It is also worth noting that the Environmental and Social Management Plan (ESMP) of the project shows no conservation worthy characteristics on the site.

Map 4: uThungulu (now King Cetshwayo) District Municipality Spatial Development Framework



Source: uThungulu District Municipality Spatial Development Framework

4. THE AREA OF IMPACT

4.1 INTRODUCTION

In this section a description of the area that will be impacted on is provided. The geographic area (referred to hereafter as the Area of Impact/Influence - AOI) for which the socio-economic baseline is developed is based on the assumption that the people, communities and businesses immediately surrounding the projects are likely to experience the greatest socio-economic impacts as a result of the construction and operation of the proposed project. Photos of the AOI and maps will be discussed at the end of this section.

The socio-economic AOI is determined based on the following:

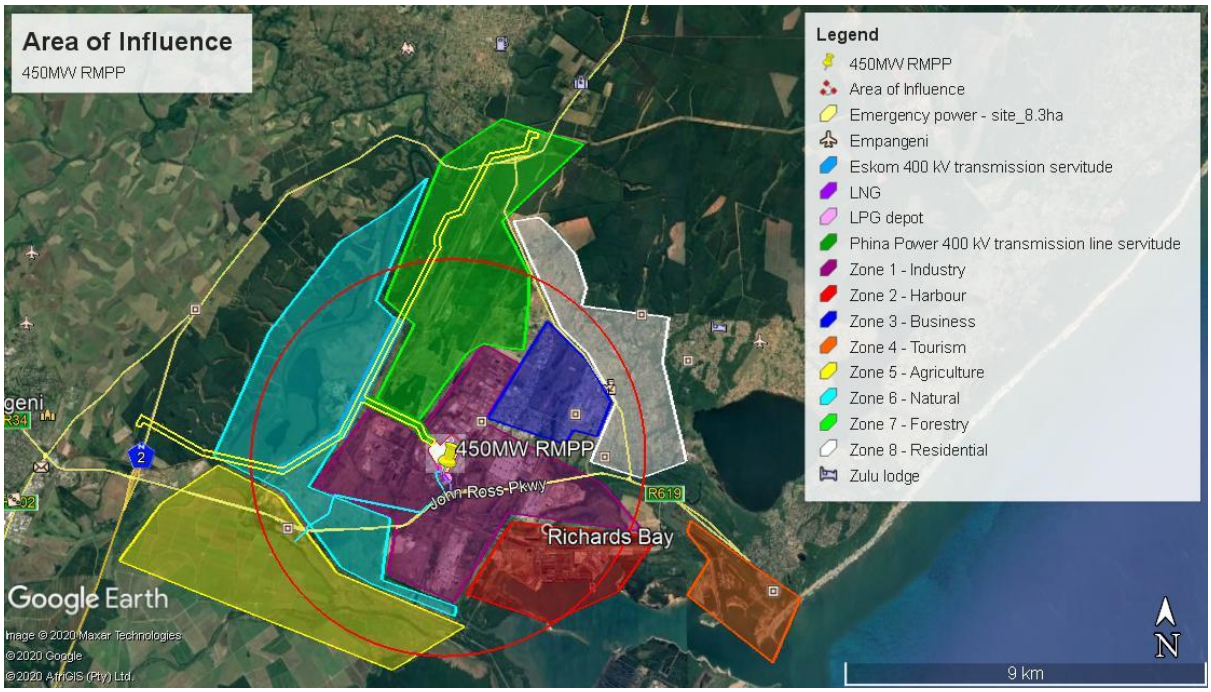
- Assessment of the area of impact based on the construction and operation activities on the sites.
- The nature of the activities such as the operation of heavy machines and equipment described in the preceding section, blasting on site, heavy vehicles and trucks moving to and from the site.
- Distances of communities and people living from the site and areas where the activities including the transport activities will take place.
- The likely impact of air quality, visual and noise generated on the site and along the transport routes. Note that separate air, noise and visual specialist reports are prepared that deals with these impacts in more detail.

4.2 DIRECT AREA OF IMPACT

The direct or immediate socio-economic AOI of the proposed 450MW power plant is indicated in Map 5 by the red line. The national and regional areas of impact is dealt with in Section 5 of the report. A starting point of a 5km radius around the site was determined as the most likely area of impact, however specific attention was given to existing land uses, movement corridors, natural buffer zones and the harbour in defining 8 zones:

- **Zone 1: Industry**
- **Zone 2: Harbour**
- **Zone 3: Business**
- **Zone 4: Tourism**
- **Zone 5: Agriculture**
- **Zone 6: Natural**
- **Zone 7: Forestry**
- **Zone 8: Residential**

Map 5: Area of Impact and the Zones of Influence



Source: Google Earth, 2020

Table 1 provides a description of each of the zones.

Table 1: Description of the Zones of Impact

ZONES OF IMPACT	SHORT DESCRIPTION OF THE AOI
# 1 INDUSTRY	Consists mainly of industrial land uses, these include general industry as well as noxious industries. The R34 provides access to Richards Bay, the Harbour and divide the industrial area, harbour and the agricultural zones. Some of the industries include Mondi, Steelplate Solutions, South32 Aluminium, Lafarge, Grindrod Simunye, Macsteel, Bell Equipment and Foskor.
# 2 HARBOUR	This zone consists mainly of the harbour precinct and lies towards the south east of the site for the power plant. Some of the businesses and institutions residing within the harbour precinct include Transnet National Port Authority, Richards Bay Harbour, Fermentech, Vanguard, SGS South Africa, Kingston Park, Bayview and the Richards Bay Seafarers Club.
# 3 BUSINESS	Consists of the central business district (CBD) of Richards Bay and includes mainly retail, commercial and business uses. The zone includes the University of Zululand, City of uMhlathuze Municipality, Boardwalk Inkwazi Shopping Centre, Netcare The Bay Hospital, Lakeside Mall as well as numerous retail and commercial facilities.

# 4 TOURISM	Although this zone falls outside of the 5km area of immediate impact, it was decided that due to the strong strategic importance of establishing this zone as a tourism destination in Richards Bay it should not be excluded from this assessment. The area includes high-end residential housing, numerous restaurants, and the main beach area for Richards Bay. Some of the tourism facilities include Bon Hotel Waterfront, Richards Bay Small Crafts Harbour, Pelican Island, Meerensee Boat Club, Richards Bay Ski Boat Club, Richards Bay Skate Park, Alkantstrand as well as numerous restaurants and tourism accommodation and lodging facilities.
# 5 AGRICULTURE	Zone 5 consists mainly of sugarcane farming and lies to the south and south west of the project site. The sugarcane industry is a well-established industry that provides numerous jobs to the local communities and forms an integral part of the local economy.
# 6 NATURAL	Zone 6 consists of natural land and green conservation areas that acts as a buffer zone between the industrial areas and the agriculture land. This zone lies between zone 1 and zone 5 to the south as well as to the west of zone 1. To the south it is mostly wetlands and to the western portion of the zone there is the Nseleni River and the Nsezi dam. The water treatment works are located within this zone as well as the Richards Bay Radio Flyers Club and the Bay Saddle Club.
# 7 FORESTRY	Zone 7 is the forestry areas to the north of the proposed power plant and zone 1. This zone also includes the Life Occupational Health Transnet Insezi Wagon Clinic and the Nsezi Transnet Engineering Depot.
# 8 RESIDENTIAL	Zone 8 consists mainly of the residential neighbourhoods to the north and north east of Richards Bay, these include Wild en Weide, Arboretum, Veld en Vlei and Brackenham.

4.3 DEMOGRAPHICS

4.3.1 Population

KwaZulu-Natal has been the province with the largest population in 1996 and 2001 as compared to other Provinces (Statistics South Africa, 2016). The table below makes use of both population census 2011 and the 2016 community survey. It is important to analyse the population census to get an overall picture as to what is happening within the municipality. The population census has a larger sample size compared to the community survey therefore gives a true reflection.

Between 2001 and 2011 the City of uMhlathuze LM experienced an annual population increase of 1.5%, with the population in 2011 reported to be 362 778 people (Statistics South Africa, 2016).

According to the 2016, Community Survey 2016 population within the uMhlathuze LM reported to be 410 465 persons, indicating a growth rate of 2.81% annually between 2011 and 2016, significantly higher than previously experienced.

Table 2: Population and Household,2011 - 2016

Population Statistics			
AREA	**Census 2011**	**Community Survey 2016**	**Growth Rate & Size**
KwaZulu-Natal	10 267 300	11 065 240	**1,7**
King Cetshwayo DM	907 519	971 135	**1,5**
UMhlathuze LM	362 778	410 465	**2,8**
Number of Households			
KwaZulu-Natal	2 539 337	2 875 843	**3,8**
King Cetshwayo DM	202 971	225 797	**4,5**
UMhlathuze LM	91 843	110 503	**3,7**

Source: Statistics SA, 2011 and Community survey, 2016

4.3.2 Age Profile

The age profile provides an overview of the age group distribution of uMhlathuze LM, which in turn is determinative of the population's lifestyle, specific needs, and thus the development of the study area.

This subsection also highlights the portion of the population that qualifies as economically active and the dependency burden on this working population. The table below explains these concepts.

Table 3: Age Group Classification

Age	Category	Socio-Economic Contribution	Dependency
0 – 14 years	Youth population	Non-working; don't generate income.	Dependent on adults for provision.
15 – 64 years	Potentially economically active (PEA)	Working population; main generators of income.	Independent; provide for other groups.
65 + years	Senior population	Retired; non-working; don't generate income.	Dependent on government or PEA for provision.

For the period 1996 to 2016, the percentage of the total population within the City of uMhlathuze LM classified as 'potentially economically active' (ages of 15 and 64) has been consistently higher than the percentage of the population within this age group in the DM and KZN province.

Table 4: Breakdown of the population by age group

	KwaZulu-Natal				King Cetshwayo DM				uMhlathuze LM			
Age	**1996**	**2001**	**2011**	**2016**	**1996**	**2001**	**2011**	**2016**	**1996**	**2001**	**2011**	**2016**
0-14	36%	35%	32%	32%	41%	39%	34%	33%	34%	33%	29%	27%
15-64	59%	60%	63%	64%	55%	57%	61%	62%	63%	64%	67%	69%
65+	5%	5%	5%	4%	4%	4%	5%	5%	3%	3%	4%	4%

Source: Quantec Data, 2020

4.3.3 Education Profile

The education profile illustrates the level of education and development, which in turn provides further insight in terms of the quality and size of the potential labour force. The level of skill is often directly proportional to the income and remuneration received by workers. Access to the education within uMhlathuze LM improved between 2001 and 2011, with the percentage of the population over the age of 20 reported to have never received formal education dropping from 18% to 8% (Statistics South Africa, 2011). While the same trend was experienced within the DM (a drop of 32% to 16% reporting no access) and province (a drop of 22% to 11% reporting no access), access was better within the LM (Statistics South Africa, 2011).

The trend of improved access to education is also indicated by the percentage of the population completing a Grade 12 and accessing some form of tertiary education. Again, access within uMhlathuze LM is better than the averages for the DM and province. No data on education levels for the population over the age of 20 are available from the 2016 Community Survey.

Table 5: Access to Education

Highest Level of Education (population over the age of 20)	uMhlathuze LM		King Cetshwayo DM		KwaZulu-Natal	
	2001	**2011**	**2001**	**2011**	**2001**	**2011**
No Schooling	18%	8%	32%	16%	22%	11%
Grade 12	25%	39%	17%	30%	20%	31%
Higher	11%	15%	6%	9%	7%	9%

Source: Quantec Data, 2020

4.3.4 Employment Profile

The employment/unemployment profile is an important indicator of the level of disposable income and subsequently the expenditure capacity of the AOI. Employment/Unemployment levels are an important indicator of socio-economic well-being as formal employment indicates access to an income and the ability to provide for basic needs. Despite improvements between 2001 and 2016, unemployment within the uMhlathuze LM remains high at 30% however, this is below the level of unemployment reported for the King Cetshwayo DM 34% and KwaZulu-Natal 33 (Statistics South Africa, 2016). The levels of unemployment reported within the LM, DM and province as a whole are all higher than the national average of 29% (Statistics South Africa, 2016).

4.3.4 Income Profile

There is a direct linkage between household expenditure and economic growth. Increase in household expenditure means a greater demand for goods and services, which implies an increase in production and a positive change in the size of an economy. Therefore, knowledge of the volume of the disposable income and the expenditure patterns of households can provide insight into the sectors that are most dependent on household income, thereby being most affected in the case of a change in household income. Household income levels are shown in Table 5.

Table 6: Household Income Levels

Income category	South Africa	KwaZulu-Natal	King Cetshwayo DM	uMhlathuze LM	Richards Bay
No Income	14.9%	15.1%	13.5%	15.2%	11.9%
R 1 – R 4,800	4.5%	4.9%	4.8%	4.4%	1.4%
R 4,801 – R 9,600	7.4%	8.6%	9.2%	8.0%	2.8%
R 9,601 – R 19,200	17.1%	19.4%	20.2%	13.7%	5.6%
R 19,201 – R 38,400	19.0%	19.8%	21.1%	15.5%	6.6%
R 38,401 – R 76,801	13.1%	11.9%	11.5%	11.9%	9.1%
R 76,801 – R 153,600	9.3%	8.3%	8.0%	11.1%	13.9%
R 153,601 – R 307,200	7.2%	6.3%	6.0%	10.1%	20.9%
R 307,201 – R 614,400	4.7%	3.9%	4.1%	7.2%	18.8%
R 614,401 – R 1,228,800	1.9%	1.2%	1.2%	2.2%	7.0%
R 1,228,801 – R 2.457,600	0.6%	0.4%	0.3%	0.5%	1.2%
R 2,457,601 and above	0.3%	0.2%	0.2%	0.3%	0.8%
Average monthly income (2011)	R 8 696	R 7 100	R 6 935	R 10 502	R 23 130
Less than R3,200 pm.	62.9%	67.8%	68.8%	56.69%	28.2%

Source: Quantec Data, 2020

4.3.4 Gross Value-Added Trends

Economic growth is measured by the increasing contribution of each economic sector to the geographic area in which it functions. This growth is measured in Gross Value Added (GVA) to the overall production value of the economy. The following figure indicates the latest figures on GVA contribution per economic sector expressed in basic prices (R millions).

The GVA of City of uMhlathuze LM was valued to be R36 122 million in 2019 current prices as shown in the table below. This is equal to a GDP per capita of R102 152 which is significantly higher than the national and provincial economies with a GDP-R per capita of R75 205 and R61 174 respectively. This is detailed in the table below.

Table 7: GVA and GDP-R figures for the local, regional and national economy

	GVA (R Millions)	GDP R Per Capita (R)
South Africa	R4 341 282	R75 205
KwaZulu-Natal	R696 458	R61 174
King Cetshwayo DM	R52 031	R53 145
uMhlathuze LM	R36 122	R102 152

Source: Quantec data, 2020, Urban-Econ Calculations, 2020

An additional and important indicator of the well-being of a region's economy is the rate at which it is growing. Within City of uMhlathuze LM the importance of the manufacturing industry is evident as this sector comprises more than 20% of the LMs economy. However, the manufacturing sector's growth in the LM is lower than the growth recorded in both the DM and the province between 2008 and 2019. The lower than average growth of this sector could be seen as an indication that the secondary sector within the City of uMhlathuze LM is experiencing pressure as a result of the relatively slow growth experienced by the local economy as a whole.

Considering the structure of the economy, it becomes evident that the national economy is predominantly a service economy. The tertiary sector comprised nearly 70% of the national economy in 2019 and grew by 7.8%. The primary sector that includes agriculture and mining, contributes the smallest amount to the national economy. These sectors are, however, strategically important for food security and job creation. The mining and agricultural sectors experienced the lowest growth rates nationally. This could indicate potential job losses for individuals who are typically low to semi-skilled, with a specific skill set. The major drivers of the 7.3% national growth rate were the electricity, gas and water sector, wholesale and retail trade, catering and accommodation sectors as well as the general government sector.

In KwaZulu-Natal, the primary sector is significantly smaller than at national level, with agriculture comprising 3.8% of the province's primary economy as opposed to mining, which is the dominant primary sector at national level. Another notable difference between the province and the country is that the manufacturing industry is bigger within the provincial economy, suggesting that although the manufacturing industry grew by just over 5% in both regions, the impact is more significant in KwaZulu-Natal.

Within the primary study area, the importance of the manufacturing industry is evident in that this sector comprises more than 20% of the LM's economy. However, the manufacturing sector's growth in the LM (2.5% per annum) is below the growth recorded in the wider study area, 3.3% on a district level and just over 5% provincially and nationally per year between 2008 and 2019. The lower than average growth of this sector could be seen as an indication that the secondary sector within the uMhlathuze LM is experiencing pressure as a result of the relatively slow growth experienced by the local economy. A breakdown of the structure of the study areas' economies is show in Table 8.

Table 8: Structure of the study areas' economies (nominal 2018 prices) and Compound Annual Growth Rate (2008-2019)

	South Africa		KwaZulu-Natal		King Cetshwayo DM		uMhlathuze LM	
	Nominal	CAGR [2](08-18)[3]	Nominal	CAGR (08-18)	Nominal	CAGR (08-18)	Nominal	CAGR (08-18)
Total	**100.0%**	**7.3%**	**100.0%**	**7.0%**	**100.0%**	**6.3%**	**100.0%**	**6.0%**
Primary sector	10.5%	5.6%	5.4%	4.2%	8.8%	2.0%	5.8%	1.1%
Agriculture, forestry, and fishing	2.4%	4.6%	3.8%	4.1%	5.6%	3.5%	2.1%	4.2%
Mining and quarrying	8.1%	5.9%	1.6%	4.5%	3.2%	-0.2%	3.7%	-0.2%
Secondary sector	20.9%	6.8%	25.9%	6.8%	28.1%	4.9%	31.3%	4.1%
Manufacturing	13.2%	5.3%	17.5%	5.5%	19.8%	3.3%	22.7%	2.5%
Electricity, gas and water	3.8%	16.0%	4.0%	16.5%	3.7%	16.3%	3.9%	16.2%
Construction	3.9%	6.2%	4.4%	7.0%	4.6%	7.3%	4.6%	7.1%
Tertiary sector	68.5%	7.8%	68.7%	7.3%	63.1%	7.9%	62.9%	7.7%
Wholesale and retail trade, catering and accommodation	15.0%	8.2%	15.2%	5.7%	13.4%	6.4%	14.1%	6.6%
Transport, storage and communication	9.8%	6.8%	13.2%	7.1%	14.7%	7.6%	16.3%	7.8%
Finance, insurance, real estate and business services	19.7%	6.7%	16.9%	6.4%	13.1%	7.8%	13.8%	7.5%
General government	18.1%	9.8%	17.2%	9.9%	15.9%	9.8%	13.4%	9.3%
Community, social and personal services	5.9%	7.5%	6.2%	7.7%	6.0%	7.6%	5.3%	7.6%

[2] CAGR: Compound Annual Growth Rate - a measure of average year on year change expressed as a percentage. A negative number indicates a retraction and a positive number indicating growth.
[3] CAGR is calculated for the period from 2008 - 2019

4.4 ACCESS TO BASIC SERVICES

4.3.4 Electricity

Access to electricity is measured on whether a household has access to electricity for cooking, heating and light. Access to electricity for lighting (the most basic level of access) within the uMhlathuze LM is better than access on a district and provincial level. However, noticeable improvements have been seen throughout KZN between 2001 and 2011 (Statistics South Africa, 2011).

Table 9: Access to electricity for lighting 2001,2011 and 2016

	Access to Electricity for Lighting		
	2001	2011	2016
KwaZulu-Natal	61%	78%	81%
King Cetshwayo DM	53%	76%	79%
uMhlathuze LM	86%	94%	96%

Source: Quantec data, 2020

4.3.4 Water

The EMF for the Richards Bay Port and IDZ indicates that the available water resources within the Richards Bay are fully utilised. Water is supplied through a piped network to the various users, as well as through direct abstraction from boreholes. As the population grows within the region, as well as the expansion of economic and industrial activities, the water demand is likely to increase. Concern has been raised regarding the volumes of water that will be available to service natural ecological processes. In particular, water is required for recharge to maintain the lake and estuarial ecosystems. The fear is that there will not be enough water to flush out the estuaries in the area, and the subsequent maintaining of ecosystem balances.

Access to piped water improved significantly within the uMhlathuze LM between 2001 and 2016, with 94% of all households reported to have access to piped water either within their household or within their yard (Statistics South Africa, 2016). The improvement in access to water is also seen in the reduction of people without access to piped water declining from 12% to 2% (Statistics South Africa, 2016).

Table 10: Access to piped water 2001,2011 and 2016

	uMhlathuze LM			King Cetshwayo DM			KwaZulu-Natal		
	2001	2011	2016	2001	2011	2016	2001	2011	2016
Piped water inside dwelling/yard	68%	92%	94%	38%	65%	71%	49%	64%	69%
Communal standpipe	20%	5%	4%	17%	19%	18%	24%	22%	20%
No access to piped water	12%	3%	2%	45%	16%	11%	27%	14%	11%

Source: Quantec data, 2020

4.3.4 Sanitation

Effluent emanating from the City of uMhlathuze is managed through different systems, the infrastructure network of the Richards Bay area can be explained as follows:

- A sea outfall pumping scheme, which deals with sewerage that originates from the various urban areas, as well as industrial zones, within Richards Bay
- Sludge sewerage treatment plants (particularly for urban areas effluent)
- Pit latrines found in rural areas

Improvements to sanitation have been experienced by households throughout KZN, within the King Cetshwayo DM and within the uMhlathuze LM. This is evident in the reduction in the number of households without access 16% to 5%in the province, 30% to 11% in the DM and 9% to 3% in the LM (Statistics South Africa, 2016). As is the case with access to water, access to sanitation within the uMhlathuze LM is above both the district and provincial averages.

Access to flush/chemical toilets has also improved, with access in the uMhlathuze LM higher than in the district and province. Of concern is that there has been an increase in the number of households reporting to make use of the bucket system.

Table 11: Access to sanitation between 2001,2011 and 2016

	UMhlathuze LM			King Cetshwayo			KwaZulu-Natal		
	2001	2011	2016	2001	2011	2019	2001	2011	2016
Flush or chemical toilet	53%	65%	70%	32%	43%	47%	46%	54%	59%
Pit latrine	37%	28%	25%	36%	41%	40%	37%	36%	34%
Bucket latrine	1%	3%	2%	2%	3%	2%	1%	3%	2%
None	9%	4%	3%	30%	13%	11%	16%	7%	5%

Source: Quantec data, 2020

5.4 SUMMARY

In summary, the area was found to have the following socio-economic characteristics

- The project is proposed in the KwaZulu-Natal on a site within an existing industrial area in Richards Bay
- There are 8 zones considered to be affected by the proposed development and should be assessed
- Between 2001 and 2011 the City of uMhlathuze LM experienced an annual population increase of 1.5%, with the population in 2011 reported to be 362 778 people
- According to the 2016, Community Survey 2016 population within the uMhlathuze LM reported to be 410 465 persons, indicating a growth rate of 2.81% annually between 2011 and 2016, significantly higher than previously experienced.
- For the period 1996 to 2016, the percentage of the total population within the City of uMhlathuze LM classified as 'potentially economically active' (ages of 15 and 64) has been consistently higher than the percentage of the population within this age group in the DM and KZN province
- Access to the education within uMhlathuze LM improved between 2001 and 2011, with the percentage of the population over the age of 20 reported to have never received formal education dropping from 18% to 8%
- Access to the education within uMhlathuze LM improved between 2001 and 2011, with the percentage of the population over the age of 20 reported to have never received formal education dropping from 18% to 8%. While the same trend was experienced within the DM (a drop of 32% to 16% reporting no access) and province (a drop of 22% to 11% reporting no access), access was better within the LM
- Despite improvements between 2001 and 2016, unemployment within the uMhlathuze LM remains high at 30% however, this is below the level of unemployment reported for the King Cetshwayo DM 34% and KwaZulu-Natal 33%
- The GVA of City of uMhlathuze LM was valued to be R36 122 million in 2019 current prices as shown in the table below. This is equal to a GDP per capita of R102 152 which is significantly higher than the national and provincial economies with a GDP-R per capita of R75 205 and R61 174 respectively
- Access to electricity for lighting (the most basic level of access) within the uMhlathuze LM is better than access on a district and provincial level
- Access to piped water improved significantly within the uMhlathuze LM between 2001 and 2016, with 94% of all households reported to have access to piped water either within their household or within their yard

5. IMPACT ANALYSIS

5.1 INTRODUCTION

The Interorganizational Committee on Guidelines and Principles for Social Impact Assessment (1998) defines social impacts as:

> *"The consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally cope as members of society. The term includes cultural impacts involving changes to the norms, values and beliefs that guide and rationalize their cognition of themselves and their society."*

5.1.1 Social and Socio-Economic Impacts

Socio-Economic Impact Assessments (SEIA) are instruments intended to identify and where possible quantify both economic and socio-economic impacts. Typically, socio-economic impacts are assessed from the perspective of the specific local people, households, community, business and other land-uses in the environment.

5.1.2 Economic Impacts

Typically, economic impacts are assessed from the perspective of the regional and national economy within which the proposed development is to be implemented. The project will have a positive impact on helping to alleviate the load-shedding currently being experienced in South Africa due to the shortage of reliable generation capacity. Economic impacts can be defined as the effects (positive or negative) on the level of economic activity in a given area(s). The net economic impact is usually measured as the expansion or contraction of an area's economy, resulting from the changes in (i.e. opening, closing, expansion or contraction of a facility, project or programme.

All new projects have two basic types of investments, namely an initial capital injection/expenditure which can take the form of either a greenfield development (i.e. new construction project on vacant land) or brownfield development (i.e. a modification of an existing structure and there is an annual investment made to maintain/operate the investment).

The economic impacts created by a capital injection are once-off impacts that will occur for the duration of construction. Thus, economic impacts associated with the construction phase are not sustainable economic impacts. Operational economic impacts, unlike capital expenditure economic impacts, are sustainable and thus are calculated as an annual impact based on operational

expenditure for a given year. Hence the temporal nature of capital expenditure and long-term nature of operational expenditure impacts can be added together to determine the total economic impact. Capital projects whilst not ongoing are still considered part of sustainable development from a government perspective. The capital injection will have a recurring economic benefit. For example, the 450MW capacity plant means that it can support 50% of the load shortfall in Stage one load shedding and 25% of Stage 2 load shedding. This is a significant impact to the broader economy and is the reason that government is procuring 2000MW under the RMIPPPP. The net economic impact of an exogenous change in the economy will be translated according to various direct and indirect economic effects, as outlined below:

Direct economic impacts: The changes in local business activity as a direct consequence of public or private activity in the economy. Furthermore, increased user benefits lead to monetary benefits for some users and non-users within the geographical area:

- For affected residents, benefits may include reduced costs for obtaining goods and services, increased income from selling goods and services to outsiders, and/or increased variety of work and recreational opportunities associated with greater location accessibility. For affected businesses, there may be economic efficiency benefits in terms of product cost, product quality or product availability, stemming from changes in labour market access, cost of obtaining production inputs and/or cost of supplying finished products to customers.

Indirect and induced impacts: The direct benefits to business and the residents of communities and regions may also have broader indirect/induced impacts and will support the supply of electricity to existing businesses currently interrupted by load shedding:

- Indirect – Growth of municipal revenues due to raised taxes and service levies.
- Induced – Business growth as the additional workers (created by direct and indirect economic impacts/effects) spend their income on food, clothing, shelter and other local goods and services.

Economic impacts refer to the impact that the construction, operational and maintenance phases of the proposed development will have on the economy, as measured by the following economic indicators:

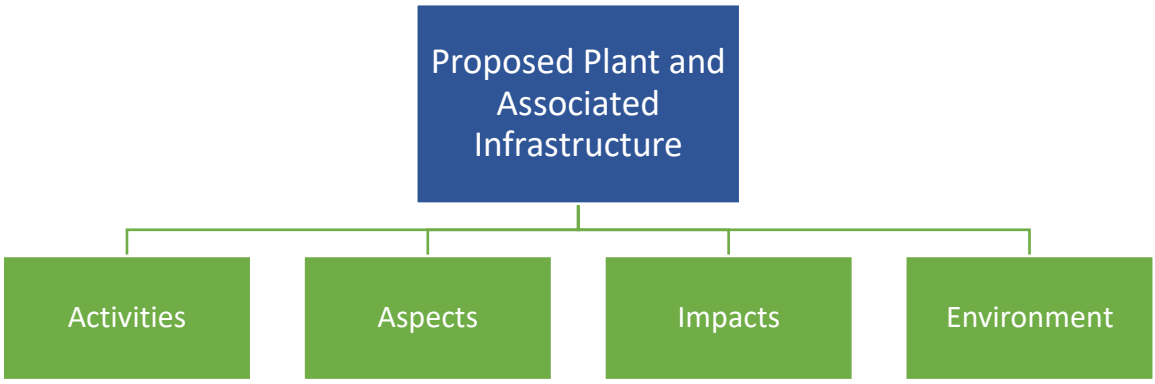
- Contribution to Regional GDP: Regional GDP is a broader measure of the full income effect. This measure reflects the sum of wage income and corporate profit generated in the study area due to an exogenous change in the regional economy.

- Employment Creation: The employment resulting from the construction, operation and maintenance of the project under investigation. The skill level of employment created is also considered.
- Production/Business Sales: The value of all inter- and intra-sectoral business sales generated in the economy because of the introduction of an exogenous change in the economy. Explained more simply, new business sales equate to additional business turnover as a result of the introduction of an exogenous change in the economy (e.g. the construction of a powerline and substation).

5.2 IDENTIFICATION OF SOCIO-ECONOMIC ISSUES AND POTENTIAL IMPACTS

The process of identifying potential impacts is illustrated in Figure 1.

Figure 4: Process of Identifying Potential Impacts



5.2 PRELIMINARY IMPACT ASSESSMENT

5.2.1 Causes of Impacts during the Construction Phase

- Construction trucks and machinery moving in and out of the site.
- Installing of LNG/LPG & Power Storage Units and associated infrastructure
- Evacuation of Electricity (underground transmission powerlines):
  - Clearing of vegetation for underground transmission servitude
  - Laying of underground power lines
  - Construction of the new substation and switching yard and connection to the local ESKOM grid
- Evacuation of Electricity (underground gas-insulated transmission line (GIL))
  - Clearing of vegetation

- Excavation of soil for the pipe trench
- Construction of the new substation and switching yard and connection to the local ESKOM grid
- Off-site transport of spoil material from vegetation clearing

5.2.2 Causes of Impacts during the Operational Phase

- Delivery and storage of initially LPG and, once available, LNG:
  - LPG
    - Delivery of LPG to the existing LPG import storage terminal at the port of Richards Bay
    - The loading of trucks at the port LPG import terminal the transport, but road, of the LPG to the storage terminal at the power plant site
    - Offloading of LPG from the LPG trucks to the LPG storage terminal at the power plant site
    - Storage of LPG in both the import terminal and the terminal at the power plant site in order to be available for combustion within the power plant
  - LNG, once available:
    - A new LNG import terminal and associated infrastructure will need to be constructed and established within the port of Richards Bay, but Transnet of a third party concession by Transnet
    - The new import terminal will most likely be a floating storage and regassification unit vessel (FSRU) as opposed to an onload LNG storage facility
    - Imported LNG will be discharged into the FSRU, where it will be storage and regassified back into natural gas
    - Regassified natural gas will be distributed to the power plant by means of a new gas pipeline connecting the FSRU to the power plant site and existing Lilly gas pipeline
- Power generation:
  - Operation of the simple cycle gas turbines / gas engines power plant
  - Initially utilising vaporised LPG (which vaporisation will be undertaken on site) and later pipeline supplied natural gas
- On site handling and temporary storage of waste materials
- Off-site transport and disposal of waste materials
- On site management of stormwater
- On-going maintenance of the infrastructure

5.2.3 Impacts during Construction Phase

For this 450MW plant the construction impacts will be most notable in Zone 1 where the site is located. The biggest negative impacts will be on traffic with large trucks and machinery moving to and from the site during the 18 to 24 month construction period and LPG trucks moving fuel between the import terminal and the LPG storage facility at the power plant site. Associated with the traffic will be dust on site as site clearing and construction continues as well as noise from machinery and trucks on site during this period.

Table 12: Impacts during the Construction phase on the AOI

Zone 1: Industry; Zone 2: Harbour; Zone 3: Business, Zone 4: Tourism, Zone 5: Agriculture, Zone 6: Natural, Zone 7: Forestry, Zone 8: Residential

Causes	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
Construction trucks and machinery moving in and out of the site	Increased Business Output Increased GDP Employment Opportunities Traffic Noise, Dust, Visual Property Values Security	Increased Business Output Increased GDP	Increased Business Output Increased GDP	In Migration Increased GDP Increased Business Output	None	None	None	In Migration (housing demand) Property Values
Installing of LPG (and in time LNG storage and regassification facilities within the port) & Power Storage Units and associated infrastructure	Increased Business Output Increased GDP Employment Traffic, Noise, Dust, Visual	Increased Business Output Increased GDP	Increased Business Output Increased GDP	In Migration Increased GDP Increased Business Output	None	None	None	In Migration (housing demand) Property Values
Evacuation of Electricity (via underground transmission lines to connect to existing over-head transmission lines):								
Clearing of vegetation for underground powerline transmission servitude;	Increased Business Output Increased GDP Employment Traffic, Noise, Visual Security	Increased Business Output	Increased Business Output Increased GDP	Increased Business Output	None	None	None	In Migration (housing demand) Property Values
Construction of underground transmission lines to connect to existing overheard transmission lines; and	Increased Business Output Increased GDP Employment Traffic, Noise, Visual Property Values	Increased Business Output	Increased Business Output Increased GDP	Increased Business Output	None	None	None	In Migration (housing demand) Property Values

	Security							
Construction of the new substation and switching yard on the power plant site, which will be connected to the new underground transmission lines and ultimately the ESKOM grid.	Traffic, Noise, Visual Increased Business Output Increased GDP	Increased Business Output	Increased Business Output Increased GDP	Increased Business Output	None	None	None	None

Positive impacts will include the increase in business output/production in zones 1, 2, 3 and 4. There will be an in migration to Richards Bay which will create a demand for housing and lodging within the area of impact. This will also result in an increase in GDP during the construction period. Short term property values could increase in the residential zone (zone 8) as a result of the influx of workers.

5.2.4 Impacts during the Operational Phase

In terms of the operational phase the negative impacts will be limited to traffic, when trucks offload LNG to the bulk storage tanks as well as the transport and disposal of waste material from site.

Table 13: Impacts during the Operational phase on the AOI

Zone 1: Industry; Zone 2: Harbour; Zone 3: Business, Zone 4: Tourism, Zone 5: Agriculture, Zone 6: Natural, Zone 7: Forestry, Zone 8: Residential

Causes	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
Delivery and storage of LPG (and intime regassified LNG)	Traffic Increased Business Output Increased GDP	Increased Business Output Increased GDP	In Migration Increased GDP Increased Business Output	None	None	None	None	None
Delivery of LPG to the LPG storage facility								
Offloading of LPG from the LPG trucks to the LPG storage facility at the power plant site	Traffic Safety Increased Business Output Increased GDP	Increased Business Output Increased GDP	Increased Business Output Increased GDP	None	None	None	None	None
Storage of LPG in bulk storage facility at the power plant site	Safety Health Increased Business Output Increased GDP	Increased Business Output Increased GDP	Increased Business Output Increased GDP	None	None	None	None	None

Power generation:								
Operation of the simple cycle gas turbines/ gas engines power plant;	Health Safety Noise Property Values Increased Business Output Increased GDP Employment Creation Electricity Generation/Security	Increased Business Output Increased GDP Electricity Generation/Security	Increased Business Output Increased GDP Employment Creation (indirect) Electricity Generation/Security	In Migration Increased GDP Increased Business Output Employment Creation (indirect) Electricity Generation/Security	Electricity Generation/Security	In Migration Electricity Generation/Security	Electricity Generation/Security	In Migration (housing demand) Property Values Electricity Generation/Security
Regasification of LNG for the simple cycle gas turbine plants. Regassification will take place at the port on the FSRU and natural gas will be transmitted by a new pipeline to the power plant	Safety Increased Business Output Increased GDP Employment Creation	Increased Business Output Increased GDP Employment Creation (indirect)	None	None	None	None	None	None
On site handling and temporary storage of waste materials;	Health Safety Increased Business Output Increased GDP Employment Creation	None	None	None	None	None	None	None
Off-site transport and disposal of waste materials;	Traffic Environmental Increased Business Output Increased GDP Employment Creation	None	None	None	None	None	None	None
On site management of stormwater;	Environmental Health Employment Creation	None	None	None	None	None	None	None

Other impacts include health and safety with regards to the storage of the LPG as well as the operational aspects of the power plant and gas turbines / gas engines. There will also be a safety perception impact from the surrounding businesses with regards to the safety of their health and properties should something go wrong with the operational aspects of the power plant.

The positive impacts during the operational phase is the increase in business output/production in zones 1, 2, 3 and 4. This will in turn result in an increase in the local GDP and employment opportunities. The 450MW RMPP will ensure electricity generation as well as improved energy security for the local and regional economies.

5.3 IDENTIFICATION OF SOCIAL AND ECONOMIC IMPACTS

This chapter presents the analysis of the socio-economic impacts that are expected to ensue as a result of the development of the proposed project and an evaluation of these impacts according to the predefined criteria. The potential socio-economic impacts identified arise as a consequence of construction, operation, and closure of the proposed 450MW RMPP.

5.3.1 Impacts Ensued During Construction

The estimated construction period for the 450MW plant is ~18 to 24 months for the power plant and associated LPG and transmission infrastructure.

Economic Impacts

Increased Production

<table>
<tr><td colspan="4">Impact
Expenditure associated with the construction of the proposed development will impact on the production of the local economy.</td></tr>
<tr><td colspan="4">Desktop Sensitivity Analysis of the Site:
No sensitivity identified.</td></tr>
<tr><td>Issue</td><td>Nature of Impact</td><td>Extent of Impact</td><td>Magnitude</td></tr>
<tr><td>The economic impact arising from the initial investment will be felt throughout the economy with windfall effects benefitting related sectors in the economy. The effect is allocated according to direct, indirect and induced impacts, together forming the “multiplier effect”</td><td>Positive – The initial investment spend on the project will inject significant business sales/ production for the local and regional economy.</td><td>The impact will occur at a local and regional level.
National (5)</td><td>High (8)</td></tr>
<tr><td colspan="2">Probability</td><td colspan="2">Highly Probable (4)</td></tr>
<tr><td colspan="2">Duration</td><td colspan="2">Short Term (2)</td></tr>
<tr><td colspan="4">Description of expected Significance of impact
The estimated capital expenditure of the project is R7.64 billion, this will provide a significant injection into the local and regional economies. The impact will be positive, short term, local and regional extent with a high significance.
Significance – High (60)</td></tr>
<tr><td colspan="4">Gaps in knowledge and recommendations for further study
» Information on the exact direct and indirect employment impact on business output / production will be determined during the EIA phase of the impact assessment.</td></tr>
</table>

Impact on GDP

Impact Temporary increase in country's GDP due to capital expenditure during construction			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
The primary method of expanding GDP levels is through investment into infrastructure and enterprises that generate goods and services. Investment into the creation of new and improved goods and services, creates heightened levels of value added within the economy. Industries that will experience the largest temporary growth in value added, as a result of this, will include the building and construction, manufacturing and trade and accommodation sectors.	**Positive** – The initial investment spend on the project will create significant value added for the local and regional economy.	The impact will occur at a local and regional level. **National (5)**	**Moderate (6)**
Probability	**Highly Probable (4)**		
Duration	**Short Term (2)**		
Description of expected significance of impact The estimated capital expenditure of the project is R7.6 billion, this will create significant value added to the local and regional economy. The exact value of that impact will be determined during the EIA phase of the impact assessment. The impact will be positive, short term, local and regional in extent with a medium significance. **Significance – Medium (52)**			
Gaps in knowledge and recommendations for further study » Information on the exact direct and indirect value added will be determined during the EIA phase when the economic modelling is done.			

Employment Creation

Impact The construction of the 450MW RMPP will positively impact on the community and beyond by creating a number of job opportunities (albeit temporary).			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
The unemployment rate in the City of uMhlathuze is 30% and the number of employed individuals has been increasing in the past six years (Urban Econ Calculations based on Quantec). The development of this power plant will create significant employment opportunities during the construction period.	**Positive** – The construction period of the power plant will create a significant number of employment opportunities for the local economy.	The impact will occur at a local, regional and national level. **National (5)**	**Moderate (6)**
Probability	**Definite (5)**		
Duration	**Short Term (2)**		
Description of expected significance of impact The estimated job creation during construction is estimated at around 300, 30 highly skilled, 50 skilled positions and 220 semi-skilled or unskilled positions. The impact will be positive, short term, local to regional extent with a high significance. **Significance – High (65)**			
Gaps in knowledge and recommendations for further study » Information on the exact number of job opportunities will be determined during the EIA phase when the economic modelling is done.			

Positive Impact on Skills Development

Impact Employees will develop and enhance skills thereby increasing experience and knowledge			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
Skills are imperative for satisfying job requirements and adequately performing tasks that ultimately boost the economy. The construction of the 450MW RMPP requires a variation of skill sets ranging from semi-skilled construction workers to highly skilled engineers.	**Positive** – The transfer of skills to the workers, especially the semi-skilled workers will create a more capable workforce.	The impact will occur at a local and regional level. **Regional (3)**	**Moderate (6)**
Probability		**Definite (5)**	
Duration		**Permanent (5)**	
Description of expected significance of impact The estimated job creation during construction is estimated at around 300, 30 highly skilled, 50 skilled positions and 220 semi-skilled or unskilled positions. Employees who are new to the market will develop and attain new skills, whilst workers adept in particular skills will sharpen their abilities. In addition, the employees will improve their marketability for future employment and will be perceived positively by future employers. The impact will be positive, short term, local to regional in extend with a high significance. **Significance – High (70)**			

Positive impact on household income and improved standard of living

Impact Employed individuals will increase the income of their respective households and thereby experience an improvement in their standard of living			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
Over a third of the population of the City of uMhlathuze Municipality are classified as low-income earners. The employment creation during the construction period will temporarily increase affected households' income	**Positive** – The increased income earned during the construction for workers will improve their standard of living as well as those of their households.	The impact will occur at a local and regional, and national level. **National (5)**	**Moderate (6)**
Probability		**Definite (5)**	
Duration		**Short Term (2)**	
Description of expected significance of impact Employed individuals will increase the income of their respective households and therefore improve their standard of living for a period of two years. In the context of the proposed power plant, workers employed in the construction as well as their households can expect an improvement in their quality of life and standard of living. The impact will be positive, short term, local to regional in extent and of high significance. **Significance – High (65)**			

Social Impacts

Demographic shift due to influx of migrant labour

Impact An impact on the demographics of the area as a result of in-migration in response to job opportunities will occur			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**

Increased pressure on infrastructure and basic services, and social conflicts during construction as a result of in-migration of people.	**Negative** – The in-migration of job seekers to the area could result in increased pressure being placed on infrastructure and basic services, and a rise in social conflicts.	The impact will occur at a local and Regional level. **Regional (3)**	**Moderate (6)**
Probability		**Probable (3)**	
Duration		**Short Term (2)**	
Description of expected significance of impact The in-migration of people to the area as either non-local workforce and / or jobseekers could result in increased pressure being placed on infrastructure and basic services on the local population (rise in social conflicts). An influx of people into the area, could lead to a temporary increase in crime levels, cause social disruption, and put pressure on basic services. An influx of people looking for economic opportunities could result in pressure on the local population such as rise in social conflicts and change in social dynamics, increase in HIV, pregnancies and drug abuse. Adverse impacts could occur if a large in-migrant workforce, which is culturally different from the local population, is brought in during construction. The impact is likely to be negative, local in extent, short-term, and of medium significance due to the number of jobs expected to be created, and the proportion of which would accrue to the non-local workforce. **Significance – Medium (33)**			

Safety and Security

Impact Safety and security impacts.			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
Temporary increase in safety and security concerns associated with the influx of people during the construction phase.	**Negative** – The in-migration of job seekers to the area could be perceived to result in increased criminal activity.	The impact will occur at a local level. **Local (1)**	**Moderate (4)**
Probability		**Low Likelihood (2)**	
Duration		**Short Term (2)**	
Description of expected significance of impact The perception exists that an influx of jobseekers, and / or construction workers to an area is a contributor to increased criminal activities in an area, such as increased safety and security risk for neighbouring properties and damage to property, increased risk of veld fire, stock theft, and crime etc. The impact is likely to be negative, local in extent, short-term, and of low significance due to the number of jobs expected to accrue to the non-local workforce. **Significance – Low (14)**			

Impacts on daily movement patterns

Impact Impacts on daily living and movement patterns.			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
Temporary increase in traffic disruptions and movement patterns during construction.	**Negative** – An increase in traffic due to construction vehicles and heavy vehicles could create short-term disruptions and safety hazards for current road users.	The impact will occur at a local level. **Local (1)**	**Moderate (6)**
Probability		**Probable (3)**	
Duration		**Short Term (2)**	
Description of expected significance of impact Increased traffic due to construction vehicles and heavy vehicles could cause disruptions to road users and increase safety hazards. The use of local roads and transport systems may cause road deterioration and congestion. The impact is likely			

to be negative, local in extent, short-term, and of low significance given the proximity of the site to the R34 road. It will mostly be isolated to zone 1 (industry areas). **Significance – Low (27)**
Gaps in knowledge and recommendations for further study » Number of vehicle trips anticipated during construction.

Nuisance Impacts

Impact Nuisance impacts (noise and dust).			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
Nuisance impacts in terms of temporary increase in noise and dust, and wear and tear on access roads to the site.	Negative – The impact will negatively impact sensitive receptors and could cause disruptions for neighbouring properties.	The impact will occur at a local level. **Local (2)**	**Moderate (6)**
Probability		**Probable (3)**	
Duration		**Short Term (2)**	
Description of expected significance of impact Impacts associated with construction related activities include noise, dust and disruption or damage to adjacent properties. Site clearing activities increase the risk of dust and noise being generated, which can in turn negatively impact on adjacent properties. The impact is likely to be negative, local in extent, short-term, and of medium significance. **Significance – Medium (30)**			

5.3.2 Impacts Ensued During Operations

The design life of the power plant is in excess of 20 years, the operational duration of this project will therefore be a minimum of 20 years.

Economic Impacts

Increased Production

Impact Expenditure associated with the operation of the proposed development will have a positive impact on production			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
Once operational, it is estimated that the proposed RMPP will stimulate production.	**Positive** – The operational spend on the project will inject significant business sales/ production for the local and regional economy.	The impact will occur at a local and regional level. **Regional (3)**	**Moderate (6)**
Probability		**Highly Probable (4)**	
Duration		**Long Term (4)**	
Description of expected significance of impact The operational expenditure will provide a significant injection into the local and regional economies with an annual operating budget of R3.34 billion. The power plant will have to acquire inputs from a variety of sectors such as fuel (LPG or naphtha), trade and accommodation, transport and storage, and government services. Considering that the RMPP will be located in the City of uMhlathuze Municipality and assuming that the entire production value will be accounted as part of the output of the municipality, the size of the City of uMhlathuze Municipality's economy is expected to increase significantly. The impact will be positive, long term, local and regional in extend with a medium significance. **Significance – Medium (52)**			
Gaps in knowledge and recommendations for further study » Information on the exact direct and indirect employment impact on business output / production will be determined during the EIA phase of the impact assessment.			

Impact on GDP

Impact Positive impact on GDP due to operating expenditure during operations			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
The primary method of expanding GDP levels is through investment into infrastructure and enterprises that generate goods and services. Industries that will experience the largest growth in value added, as a result of this, will include the transport, storage and manufacturing sectors.	**Positive** – The operational spend on the project will create significant value added for the local and regional economy.	The impact will occur at a local and regional level. **Regional (3)**	**Moderate (6)**
Probability		**Highly Probable (4)**	
Duration		**Long Term (4)**	
Description of expected significance of impact The operational expenditure of the power plant will create significant value added to the local and regional economy. The exact value of that impact will be determined during the EIA phase of the impact assessment. The impact will be positive, long term, local and regional in extend with a medium significance. **Significance – Medium (52)**			
Gaps in knowledge and recommendations for further study » Information on the exact direct and indirect value added will be determined during the EIA phase when the economic modelling is done.			

Employment Creation

Impact The operation of the RMPP will positively impact on the community and beyond by creating a number of job opportunities			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
The unemployment rate in the City of uMhlathuze is 30% and the number of employed individuals has been increasing in the past six years (Urban Econ Calculations based on Quantec). The operation of this power plant will create significant employment opportunities during the operational period.	**Positive** – The operations of the power plant will create a significant number of employment opportunities for the local economy.	The impact will occur at a local, regional. **Regional (3)**	**Low (4)**
Probability		**Definite (5)**	
Duration		**Long Term (4)**	
Description of expected significance of impact The estimated job creation during operations is estimated at around 40 (excluding contractors), 4 highly skilled, 35 skilled positions and 10+ semi-skilled or unskilled positions (mainly contractors). The impact will be positive, local to regional extent with a high significance. **Significance – High (70)**			
Gaps in knowledge and recommendations for further study » Information on the exact number of job opportunities will be determined during the EIA phase when the economic modelling is done.			

Positive Impact on Skills Development

Impact Employees will develop and enhance skills thereby increasing experience and knowledge
Desktop Sensitivity Analysis of the Site: No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	Magnitude
Skills are imperative for satisfying job requirements and adequately performing tasks that ultimately boost the economy. The specialty of the RMPP requires and creates scarce skills that will be imperative in the long run if other RMPPs are developed as envisaged in policy	**Positive** – The transfer of skills to the workers, especially the semi-skilled workers will create a more capable workforce.	The impact will occur at a local level. **Local (2)**	**Moderate (6)**
Probability		**Definite (5)**	
Duration		**Permanent (5)**	
Description of expected significance of impact The employment opportunities are for a long-term period of 20 years and are thus sustainable and will have a positive impact on skills for benefitting employees. Furthermore, as production and consumption effects filter through the economy creating a demand for more labour, human resources will be trained and skilled within aligned industries. Ultimately, the plant's construction will lead to enhanced skills through training and experience in the wider national economy. Impact will be positive, long term, with a local to regional extent and high significance. **Significance – High (65)**			

Positive impact on household income and improved standard of living

Impact Employed individuals will increase the income of their respective households and therefore improve their standard of living			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
Over a third of the population of the City of uMhlathuze Municipality are classified as low-income earners. The employment creation during the operational period will increase affected households' income for 20 years.	**Positive** – The increased income earned during the operational phase for workers will improve their standard of living as well as those of their households.	The impact will occur at a local and regional level. **Regional (3)**	**Moderate (6)**
Probability		**Highly Probable (4)**	
Duration		**Long Term (4)**	
Description of expected significance of impact For a period of 20 years, 40 people will be employed at the power plant. As a result, the benefitting individuals and their respective households will incur an improvement in their standard of living due to the income earned. The income earned also results in increased purchasing power in the local community, given that a proportion of the employed will be based in the municipality. Therefore, the local businesses will experience increased business activity and the local economy will experience a boost. Impact will be positive, long term, local to regional extent with a medium significance. **Significance – Medium (52)**			

Increased Government Revenue

Impact Government revenue will be derived from the proposed development			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
The proposed development will provide a sustainable and increased revenue to the local government in the form of property rates and taxes. It will further supplement the revenue derived from national government. Moreover, national government will derive tax-related revenue such as Value-Added Tax (VAT), payroll and income taxes. This is as a	**Positive** – The operational phase of the power plant will create tax related revenue for government.	The impact will occur at a local and regional level. **Regional (3)**	**Moderate (6)**

result of the employment that will be created and the resultant income that will be earned, thus increasing spending power.			
Probability		**Definite (5)**	
Duration		**Long Term (4)**	
Description of expected significance of impact The increased revenue from the proposed project may assist the municipality whereby constituencies may utilise it for public services. Overall, the allocation of government revenue should improve socio-economic conditions of the population. The impact will be positive, long term, with regional and local extent and a high significance. **Significance – High (65)**			

Improvement in Energy Sector Generation

Impact Improved energy security and energy sector will result due to the development of the RMPP			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
The RMPP will provide the important national service of providing new electricity capacity into the national grid. Strategically, the proposed project will assist in improving electricity security and reducing transmission losses in the national grid and assist in alleviating load shedding.	**Positive** – The operational phase of the power plant will improve energy and grid security and assist in alleviating load shedding.	The impact will occur at a local and regional and national level. **National (5)**	**Moderate (6)**
Probability		**Highly Probable (4)**	
Duration		**Long Term (4)**	
Description of expected significance of impact The RMPP has the ability and operational flexibility to be turned on or off or be ramped up or down to suit the system demand on an intra-hourly on any day of the week, will additionally increase efficiency. The proposed development, initially utilising LPG, will create additional demand for natural gas to help accelerate government and Transnet's medium term planning of importing LNG into Richards Bay, by providing a base load natural gas offtake in Richards Bay that will assist in financially supporting the establishment of gas infrastructure. the introduction of natural gas into Richards Bay will enhance South Africa's gas energy security by establishing a second source of natural gas supply into South Africa in mitigation of Sasol's declining gas reserves in Mozambique, thereby helping to alleviate the gas supply challenges facing the industry. The impact will be positive, long term, local to regional extent and of high significance. **Significance – High (60)**			

Social Impacts

Economic and Social Upliftment

Impact Contribution to local economic development and social upliftment.			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
Benefits to the local area from Socio-Economic Development (SED) / Enterprise Development (ED) programmes and corporate social investment (CSI) initiatives through their social responsibility programmes.	**Positive** – The creation of employment opportunities, skills development, and the proposed projects contributions to local economic development will assist to an extent in both alleviating unemployment	The impact will occur at local and regional level. **Regional (3)**	**Moderate (6)**

	levels within the area and improving the quality of life.		
Probability		**Highly Probable (4)**	
Duration		**Long Term (4)**	
Description of expected significance of impact These types of capital projects are required to spend a certain amount of their generated revenue (as defined in the agreement with DoE) on Socio-Economic Development (SED) and Enterprise Development (ED) and share ownership in the project company with local communities. The impact is likely to be positive, local-to-national in extent, long-term, and of medium significance. **Significance – Medium (52)**			
Gaps in knowledge and recommendations for further study » Information on the project's proposed contributions.			

Visual and Sense of Place Impacts

Impact Visual and sense of place impacts.			
Desktop Sensitivity Analysis of the Site: No sensitivity identified.			
Issue	**Nature of Impact**	**Extent of Impact**	**Magnitude**
Sense of place impacts from a social perspective associated with the operation phase of the RMPP facility and associated infrastructure.	**Negative** – The project could alter the areas sense of place which could negatively impact on sensitive receptors.	The impact will occur at a local level. **Local (1)**	**Low (4)**
Probability		**Low Likelihood (2)**	
Duration		**Long Term (4)**	
Description of expected significance of impact The presence of the RMPP facility could impact the "sense of place" for the local community. The impact is likely to be negative, local in extent, long-term, and of low significance considering it is located within an industrial dominated area with other general and noxious industries. **Significance – Low (18)**			

6. CONCLUSION AND RECOMMENDATIONS

This Scoping Report focused on the collection of available secondary information in order to provide a social baseline against which potential social impacts which may be associated with the development of 450MW Emergency RMPP (inclusive of accompanying LPG storage terminal and electricity transmission infrastructure) could be identified. A summary of the potential positive and negative impacts identified for the detailed design and construction, and operation phase are presented in Table 14 and Table 15.

Table 14: Summary of potential social and economic impacts identified for the detailed design and construction phase.

Impact	Status	Significance
Impact on Production	Positive	High (60)
Impact on GDP	Positive	Medium (52)
Impact on Employment Creation	Positive	High (65)
Skills Development	Positive	High (70)
Household Income and Standard of Living	Positive	High (65)
In-migration of people	Negative	Medium (33)
Safety and security impacts	Negative	Low (14)
Impacts on daily living and movement patterns	Negative	Low (27)
Nuisance impact (noise and dust)	Negative	Medium (30)

Table 15: Summary of potential social and economic impacts identified for the operation phase.

Impact	Status	Significance
Impact on Production	Positive	Medium (52)
Impact on GDP	Positive	Medium (52)
Impact on Employment Creation	Positive	High (70)
Skills Development	Positive	High (65)
Household Income and Standard of Living	Positive	Medium (52)
Increased Government Revenue	Positive	High (65)
Improvement in Energy Sector Generation	Positive	High (60)
Economic and Social Upliftment	Positive	Medium (52)
Visual and Sense of Place Impacts	Negative	Low (18)

The potential social and economic impacts identified for the project and listed within Table 14 and Table 15 have been identified based on an assessment of available information and the current understanding of the proposed project and are not exhaustive. The possibility therefore exists that additional impacts may be identified as part of the public review period, or during the collection of primary data as part of the EIA level. All potential social impacts identified as part of the process will be assessed in detail during the EIA Phase.

6.1 CONCLUSION

A number of potential positive and negative social impacts have been identified for the project, which require further investigation as part of the EIA phase. Based on the findings of this Socio-Economic Impact Assessment Scoping Report, no red flags or fatal flaws have been identified from a socio-economic perspective which could preclude the development of 450MW Emergency RMPP and associated infrastructure.

6.2 RECOMMENDATIONS

It is recommended that a full EIA level Socio-Economic Impact Assessment be conducted as part of the EIA phase. The following activities should be undertaken as part of this process:

- Review comments pertaining to social impacts received from members of the key stakeholders, and any organ of state during the public review of the Scoping Report. Where applicable, comments received from DEA on the Final Scoping Report, which may pertain to socio-economic impact assessment, will also be reviewed.
- Collect primary data. Interview key stakeholders to obtain primary information related to the project site, socio-economic environment, and to gain their inputs on the proposed project and its perceived impact (positive and /or negative).
- Update the baseline information with information received during the data collection, as well as any additional information received from the client, or updates to the project description.
- Assess impacts identified for the project in terms of their nature, extent, duration, magnitude, probability, status, and significance; as well as the degree to which the impact can be reversed, may cause irreplaceable loss of resources, and can be mitigated.
- Identify mitigation measures with which to reduce negative impacts and enhance positive impacts for inclusion in the Environmental Management Programme (EMPr).
- Provide a reasoned opinion regarding the acceptability of the project, and whether the proposed project should be authorised.
- Prepare a Socio-Economic Impact Assessment Report for inclusion in the EIA Report to be prepared for the project.