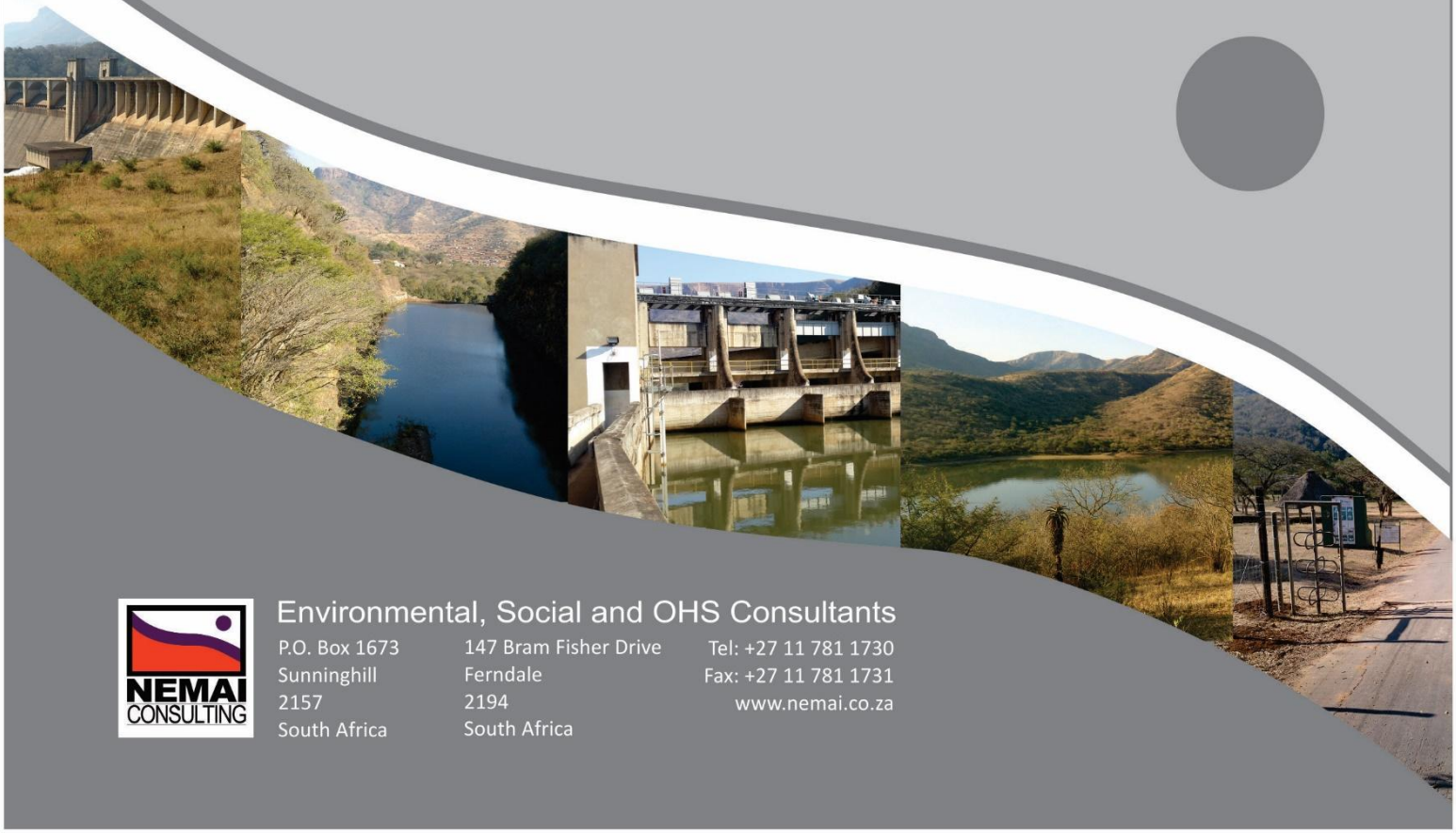
APPENDIX E12 – Social Impact Assessment

PROPOSED 750MW COMBINED CYCLE GAS TURBINE POWER PLANT IN RICHARDS BAY, CITY OF UMHLATHUZE LOCAL MUNICIPALITY, KWAZULU-NATAL

Social Impact Assessment

January 2025

Prepared For: Mabasa Energy and Fuels (Pty). Ltd



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TABLE OF CONTENTS

Title and Approval Page ii
List of Figures vi
List of Tables vi
List Of Abbreviations vii
1. Introduction 1
1.1 Background 1
1.2 Terms of Reference 2
1.3 Structure of the report 2
1.4 Specialists' Details 2
1.5 Specialist Declaration 3
2. Methodology 3
2.1 Mapping the areas of impact 3
2.1.1 Concentric Zones 3
2.1.2 Functional Zones 4
2.2 Data Gathering Methods 5
2.3 Limitations and Assumptions 5
3. Project Description 6
3.1 Project Overview 6
3.2 Project Components 6
4. Definition of study area 9
4.1 Project Location 9
4.1.1 Surrounding Land Use 9
4.1.2 Co-centric Zones 11
4.1.3 Secondary Zone 12
4.1.4 Tertiary Zone 14
5. Relevant Legislation, Standards And Guidelines 14

5.1 International Guidelines and best practices 15
5.1.1 International Finance Corporation Performance Standards (2012). 15
5.2 National Legislation 15
5.2.1 The Constitution of South Africa (Act 7 of 1996) 15
5.2.2 National Development Plan (2011) 15
5.2.3 Integrated Resource Plan (2019 and 2023 Draft) 16
5.2.4 The Spatial Planning and Land Use Management Act, 2013 (SPLUMA) 16
5.2.5 National Environmental Management Act (Act 107 of 1998) 16
5.2.6 Guideline for Involving Socio-Economic Assessment Specialists in EIA Processes 17
5.2.7 Social Impact Assessment: Guidance document (2015) 17
5.2.8 National Energy Act (Act No 34 of 2008) 17
5.3 Regional and Local Legislation 18
5.3.1 UMhlathuze Local Municipality: Fifth Generation IDP 2022/2027 18
5.3.2 UMhlathuze Municipality 5th Generation: Spatial Development Framework 18
5.3.3 City of uMhlathuze Local Economic Development Strategy 18
6. Status Quo Analysis 19
6.1 Population Demographics 19
6.1.1 Population 19
6.1.2 Education Levels 19
6.1.3 Income Levels 20
6.2 Economic Conditions 21
6.2.1 Employment Rates and key economic sectors 21
6.3 Social Conditions 22
6.3.1 Safety and Security 22
6.3.2 Health 23
7. Stakeholder Engagement 24
7.1 uMhlathuze Focus Group Meeting 24
7.1.1 May 15, 2024, uMhlathuze Focus Group Meeting 24
7.1.2 May 17, 2024, uMhlathuze Focus Group Meeting 25

7.1.3 Comments and Response Report 25
8. Identification of Impacts 26
8.1 Impacts and Mitigation Framework 26
8.2 Identification of Activities and Aspects 28
8.3 Impacts during Planning Phase 30
8.3.1 Attitude formation 30
8.3.2 Compliance with municipal by-laws 30
8.3.3 Local empowerment and inclusivity 30
8.3.4 Mitigation Measures 31
7.1. Impacts during the Construction Phase 31
7.1.1. Local Business and Employment opportunities 31
7.1.2. Economic benefits for the local municipality 32
7.1.3. Job Seeker Influx 32
7.1.4. Noise and Dust Pollution 32
7.1.5. Increased traffic and mobility Issues. 32
7.1.6. Security Concerns 32
7.1.7. Construction Waste 33
7.1.8. Mitigation Measures 33
7.2. Impacts during the Operational Phase 34
7.2.1. Economic development 34
7.2.2. Improved electricity supply 34
7.2.3. Mitigation Measures 34
7.3. Cumulative Impacts 35
9. Alternative analysis 35
7.4. No-Go Alternative 35
7.5. Technical Alternatives 35
10. Site Sensitivity Verification 36
11. Impact Statement 36
12. References 37
13. Appendix One – Google Earth Flyover 39

LIST OF FIGURES

Figure 1: Concentric Zones for proposed 750 MW Gas to Power Plant 4
Figure 2:Functional Zones for proposed 750 MW Gas to Power Plant 4
Figure 3: Proposed Layout for 750 MW Gas to Power Plant 8
Figure 4: Proposed location for 750 MW Gas to Power Plant 9
Figure 5 : Surrounding Land Uses 10
Figure 6 :Erf 16673 11
Figure 7: Ward 2 Richards Bay, uMhlathuze LM 12
Figure 8 Regional Study Area 14
Figure 9: Richards Bay Police Precinct Common Crimes (2023/2024) 23

LIST OF TABLES

Table 1:Project Components 6
Table 2:Power Generation Capacity 7
Table 3 : Employment and Local Participation Across Gas-to-Power Projects 12
Table 4 : Provincial, regional and local population size 19
Table 5: Income levels in uMhlathuze Local Municipality 20
Table 6 : Employment gains by industry in Q3 2024 21
Table 7: Economic Sector Distribution in uMhlathuze Municipality (2016) 22
Table 8: Impact and Mitigation Framework 27
Table 9 :Planning phase mitigation measures 31
Table 10 : Mitigation of Construction Phase impacts 33
Table 11: Mitigation measures during the operational phase 34

LIST OF ABBREVIATIONS

CRR	Comments and Response Report
CCGT	Combined Cycle Gas Turbine
EIA	Environmental Impact Assessment
GDP	Gross Domestic Product
GASIPPPP	Gas Independent Power Producer Procurement Programme
GIS	Geographic Information System
GHG	Green House Gas
HIA	Health Impact Assessment
HIV	Human immunodeficiency viruses
IPPPP	Independent Power Producer Procurement Programme
IDP	Integrated Development Plan
IRP	Integrated Resource Plan
IFC	International Finance Corporation
IRP	Integrated Resource Plan
KZN	Kwa-Zulu Natal
LM	Local Municipality
LED	Local Economic Development
MSA	Municipal Systems Act (Act 32 of 2000)
NEMA	National Environmental Management Act No.107 of 1998
NDP	National Development Plan
NEMA	National Environmental Management Act (No. 107 of 1998)
MW	Mega Watt
QLFS	Quarterly Labour Force Survey
PPE	Personal Protection Equipment
RBIDZ	Richards Bay Industrial Development Zone
SMME	Small, Medium, and Micro Enterprises
SA	South Africa
SIA	Social Impact Assessment
SDCEA	South Durban Community Environmental Alliance
SPLUMA	Spatial Planning and Land Use Management Act 16 of 2013
TWh	Terawatt-hour

1. INTRODUCTION

1.1 Background

The proposed 750 MW Gas to Power Plant in Phase 1F of the Richard's Bay Industrial Zone is designed to enhance electrical energy supply and improve the area's industrial expansion and economic growth. The Integrated Resource Plan (IRP, 2023) outlines the long-term energy diversification plan and resource allocation for the generation of electricity in South Africa. The primary Social issues targeted by the IRP are the continuous power crisis worsened by the shortage in supply of electricity and its impacts of the economy, job creation and social well-being of citizens. According to the Medium-Term System Adequacy Outlook (2024-2028)., the current energy forecast is uncertain due to several unknown factors and risks, such as high interest rates that put pressure on the economy, ongoing load shedding, high unemployment that contributes to poverty, political unpredictability, and economic decline. However, because of coal-fired power plant deterioration and energy generation delays, the electricity supply gap is predicted to drop from 18 TWh to 30 TWh by 2027. Electricity is an economic driver in South Africa due to its relationship with economic growth and the lack of energy supply has resulted in slowing down of certain sectors from producing as much, which has an overall impact on the GDP or economy. Businesses may not have the means or ability to hire new employees as a result, and working individuals are more likely to lose their jobs. Problems with the provision of power also negatively impact on people's quality of life in several ways, such as safety and security, access to vital services like healthcare, and electrically reliant basics like communication devices.

The government of South Africa has a strategy called the Independent Power Producer Procurement Programme (IPPPP) which was established to increase the supply of electricity by bringing private enterprises into the energy industry. The department of Mineral Resources and Energy established this strategy to assist the nation's energy strategy and development objectives, such as improving the community's standards of living, increasing employment, and stimulating the economy. As part of this strategy, the Gas Independent Power Producer Procurement Programme (GASIPPPP) focuses on the use of gas power to produce electricity. To take part in this initiative, Mabasa Energy and Fuels (Pty) Ltd is proposing the construction of a 750MW gas to power plant in Richards Bay, KwaZulu Natal. The Combined Cycle Gas Turbine (CCGT) technology (the project) to be used in this project is an effective method of producing power from gas.

Nemai Consulting was appointed to undertake a social Impact Assessment (SIA) for the proposed project as part of fulfilling the requirements of the Environmental Authorization process in accordance with National Environmental Management Act No.107 of 1998 (NEMA), and the Environmental Impact Assessment (EIA) regulations, 2014 (as amended).

1.2 Terms of Reference

The primary objectives of the Social Impact Assessment are as follows:

- Collect baseline data on the current social environment and land use in the study area;
- Analyse the social and economic implications (positive and negative) of the Project on the affected community and local economy on macro, regional, and micro(site)-levels;
- Undertake a thorough review of the minutes of public meetings and the Comments and Response Report (CRR); and
- Suggest suitable mitigation measures to address the identified social impacts.

1.3 Structure of the report

The remainder of the report is structured as follows:

Section 2: Methodology - This section outlines the methodology used to determine the impacts of the proposed project.

Section 3: Project Description- Provides an introduction, scope, and overview of the project.

Section 4: Definition of the Study Area- Offers the locality context of the study area.

Section 5: Relevant Legislation- Details the legislative framework applicable to the project.

Section 6: Status Quo Analysis- Presents a desktop analysis of the baseline situation in the study area.

Section 7: Stakeholder Engagement-Discusses the processes and outcomes of stakeholder engagement activities.

Section 8: Identification of Impacts – Aspects and Impacts- Identifies the project activities and investigates which aspects of these activities will result in social impacts.

Section 9: Analysis of Alternatives- Evaluates decision-making regarding the preferred project alternatives from a social perspective.

Section 9: Site Sensitivity Evaluation – Statement on the method for determining site sensitivity.

Section 11: Impact Statement – Impact statement made by the authors

1.4 Specialists' Details

Khutso Makobela is a Master of Science Candidate in Geographical Information Systems & Remote Sensing. He holds a Bachelor of Science Honours in Urban and Regional Planning Khutso brings expertise in spatial data analysis, social impact assessments, and environmental compliance. With a background in urban planning, Geographic Information

System (GIS) and stakeholder engagement, she delivers data-driven insights to support sustainable development.

1.5 Specialist Declaration

Nemai Consulting operates as an independent consultant conducting environmental impact assessments and associated specialists' studies. We declare that we have no affiliation with or vested financial interests in the proponent, other than for work performed under the Environmental Impact Assessment Regulations, 2017. We have no conflicting interests in the undertaking of this activity and have no interests in secondary developments resulting from the authorisation of this project. We have no vested interest in the project, other than to provide a professional service within the constraints of the project (timing, time and budget).

2. METHODOLOGY

The approach used in this report to assess the social and economic impacts of the proposed project begins with understanding the alignment of the project with existing policies and planning guidelines from a global perspective to national, provincial and down to the local government. It analyses important aspects such the impact and accessibility of renewable energy facilities, the influence on the character and identity of the surrounding area, possible inconveniences such noise, and changes to traffic patterns. It also considers the contributions to local businesses, the creation of new job opportunities, and the impact on surrounding land uses, including property values. The method considers the project's wider socioeconomic development impacts while identifying and addressing any potential social concerns.

This strategy is in line with the Department of Environmental Affairs' guideline Series 9 on Needs and Desirability, which calls for making sure that the project's advantages such as jobs, support for local businesses, or better infrastructure are equitable and accessible to the community. A key component of this assessment is determining if the project promotes sustainable development objectives and enhances long-term well-being of the community, hence reducing any negative impacts on marginalized groups.

2.1 Mapping the areas of impact

2.1.1 Concentric Zones

The social impact study's terms of reference provide that the project's impact need to be analysed at the macro, regional, and micro (site) levels. A concentric zone method is used to map impacts that depend on location, while also considering social and economic impacts that could be found beyond the project area. Concentric zones are geographical areas grouped

around a central point, the closest areas experience the most impacts and farther areas are less impacted. This enables the evaluation of impacts based on proximity (Rodoman, 2014).

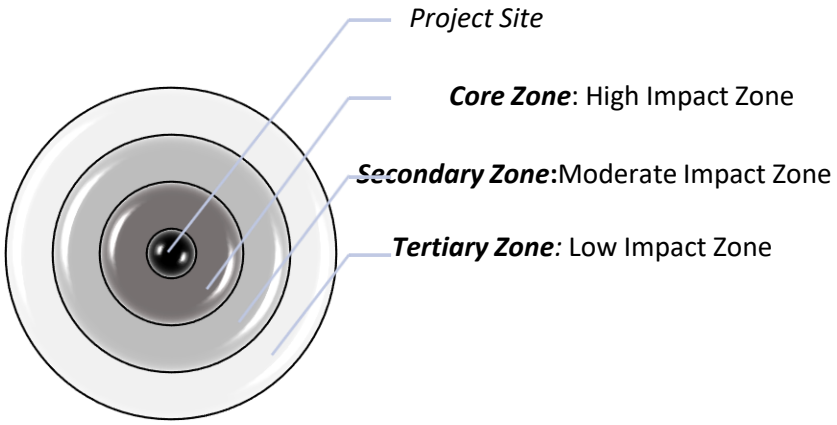


Figure 1: Concentric Zones for proposed 750 MW Gas to Power Plant

This technique helps in mapping out areas of impact based on their proximity to the project site. It also identifies key stakeholders for public participation, ensuring those in closer zones with more significant impacts are prioritized. This method aligns with the Spatial Planning and Land Use Management Act 16 of 2013 (SPLUMA) by considering spatial impacts on different land uses and supports the creation of an environmental footprint for effective mitigation planning.

2.1.2 Functional Zones

The functional zones do not follow spatial proximity. However, for the purpose of this assessment, they are useful for categorizing how people and businesses will benefit from the project.

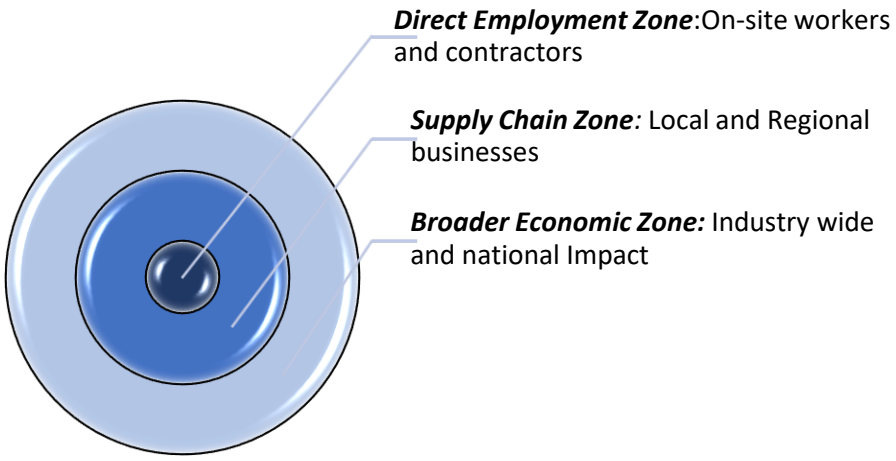


Figure 2:Functional Zones for proposed 750 MW Gas to Power Plant

Functional zones are used in this study to classify more general socioeconomic factors that are not confined by geographic location, such as the creation of jobs and economic stimulation. These areas include supply chain activity (local and regional businesses), direct employment (on-site workers), and wider economic stimulation (the impact on the entire industry and the country).

2.2 Data Gathering Methods

To evaluate the economic and social conditions of the project area, the study used secondary data sources. The following methods were applied:

- Spatial and Infrastructure Analysis: Existing maps, satellite imagery, and planning documents were reviewed to understand the layout, land use, and infrastructure within the Richards Bay Industrial Zone.
- Policy and Regulatory Overview: Relevant policies, municipal plans, and economic development frameworks were reviewed to evaluate how well the project is aligned.
- Stakeholder Insights from Existing Reports: Publicly available stakeholder engagement reports, municipal records, and industry publications were reviewed to understand concerns and potential impacts.
- Economic and Demographic Data Analysis: Statistical data from sources such as Statistics South Africa and municipal economic reports were used to evaluate employment trends, economic activity, and community dynamics.

2.3 Limitations and Assumptions

The following are the limitations and assumptions made in this report.

1. The social impact assessment is conducted under the assumption that the project will proceed according to the proposed “two-phase” development plan. Any delays or changes to this schedule could affect the social impacts, especially in terms of employment opportunities and economic stimulation.
2. Employment opportunities during the construction phase might help boost the local economy, but how much of an impact this has will rely on the region's capacity for contractors and the availability of skilled workers.
3. There will be no major shifts in policies, regulations, or governance structures that will affect the project's progress, timeline, or social outcomes.

3. PROJECT DESCRIPTION

3.1 Project Overview

The proposed 750 MW Gas to Power Plant in Phase 1F of the Richard's Bay Industrial Zone is designed to enhance electrical energy supply and improve the area's industrial expansion and economic growth. The Integrated Resource Plan Draft (IRP, 2023) outlines the long-term energy diversification plan and resource allocation for the generation of electricity in South Africa.

The primary social issues targeted by the IRP are the continuous power crisis worsened by the shortage in supply of electricity and its impacts of the economy, job creation and social well-being of citizens. According to the Medium-Term System Adequacy Outlook (2024–2028)., the current energy forecast is uncertain due to several unknown factors and risks, such as high interest rates that put pressure on the economy, ongoing load shedding, high unemployment that contributes to poverty, political unpredictability, and economic decline. However, because of coal-fired power plant deterioration and energy generation delays, the electricity supply gap is predicted to increase from 18 TWh to 30 TWh by 2027.

Electricity is an economic driver in South Africa due to its relationship with economic growth and the lack of energy supply has resulted in slowing down of certain sectors from producing as much, which has an overall impact on the economy. Businesses may not have the means or ability to hire new employees as a result, and working individuals also are more likely to lose their jobs.

3.2 Project Components

The proposed project is a thermal power plant that will use gas turbines and steam turbines to generate electricity for the national grid. The plant is designed to operate continuously (24/7). The plant will have two gas turbines, which will burn fuel to produce electricity. Instead of wasting the heat from the gas turbines, the plant will use two heat recovery units to capture this heat and turn it into steam. The captured steam will then power one steam turbine, which generates extra electricity. By using both gas and steam turbines, the plant can produce more power efficiently. The project's components are expanded below:

Table 1:Project Components

Category	Description
Gas Turbines	Two gas turbines (General Electric Frame 9 model), with generators to produce electricity.
Heat Recovery Units	Two units to capture and reuse waste heat from the gas turbines.

Category	Description
Steam Turbine	One steam turbine with a generator to produce additional electricity.
Cooling system	To regulate temperature, prevent overheating and improve plant efficiency
Transformers and Electrical Systems	Connects the plant to the national power grid, making electricity available to making it available for homes, businesses, and industries.
Control System	Monitors and operates the entire power plant
275Kv Switchyard 3x (15kV to275Kv)	This means that the plant uses transformers to raise the voltage of the electricity it generates before sending it to the power grid.
Gas transportation	Gas will be transported via pipeline from the Zululand Terminal to the plant.

The project is divided into two phases. Phase I entails a simple cycle turbine rated a 500MW which will take 12 months to construct. Phase II entails the combined cycle turbine set, rated at 750MW.

Table 2:Power Generation Capacity

Mode	Description
Simple Cycle Mode	500MW (using gas turbines only)
Combined Cycle Mode	750 MW (using both gas and steam turbines)

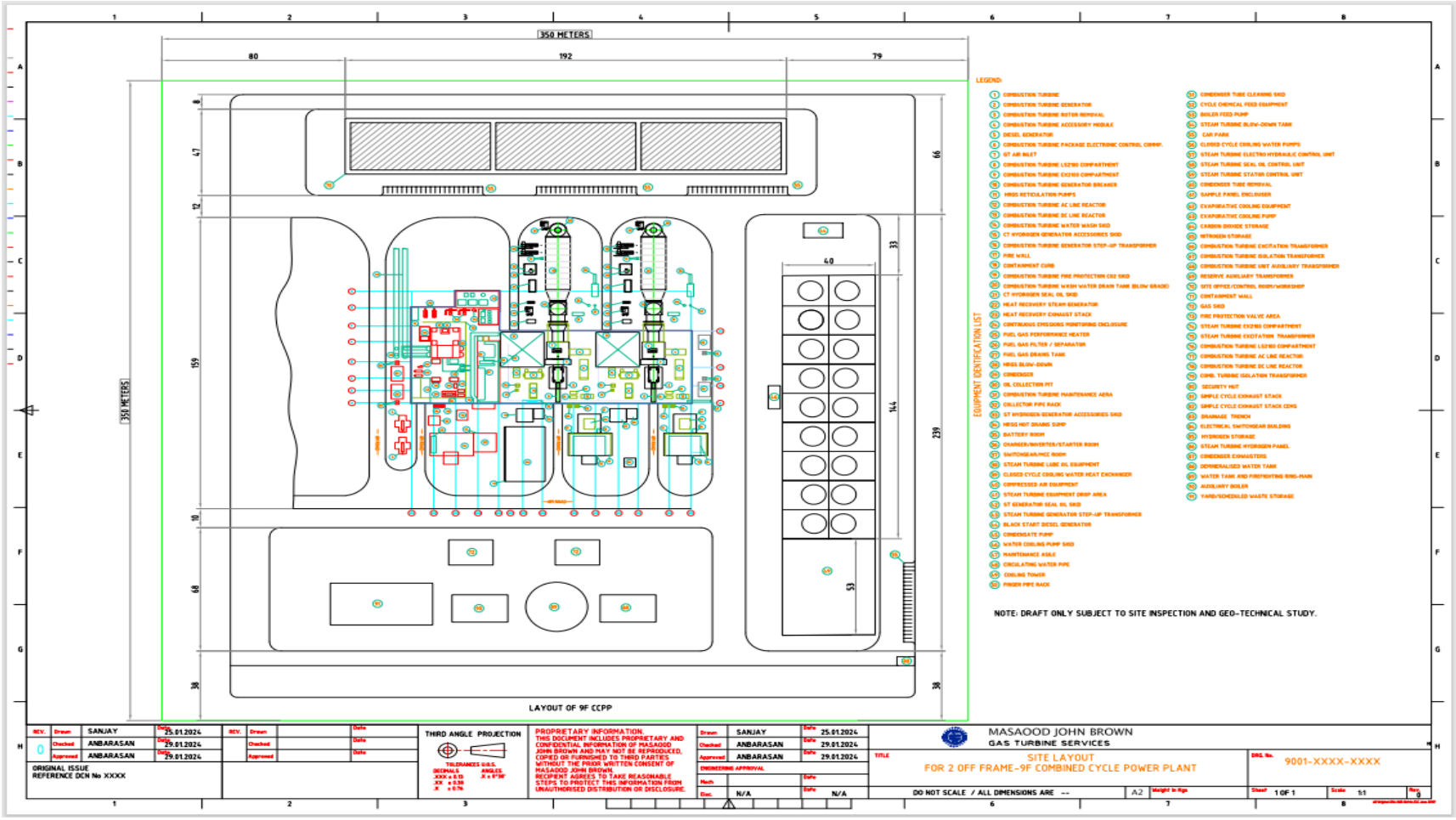


Figure 3: Proposed Layout for 750 MW Gas to Power Plant

4. DEFINITION OF STUDY AREA

4.1 Project Location

The proposed project is located on Erf 16673 in Phase 1F of the Richards Bay Industrial Development Zone (RBIDZ), within Ward 2 of the uMhlathuze Local Municipality in Kwa Zulu Natal province. A study area is defined by the International Finance Corporation (IFC) as "an area that is likely to experience impacts from, or exert influence over, the “project” or activity being evaluated" (IFC World Bank, 2012).

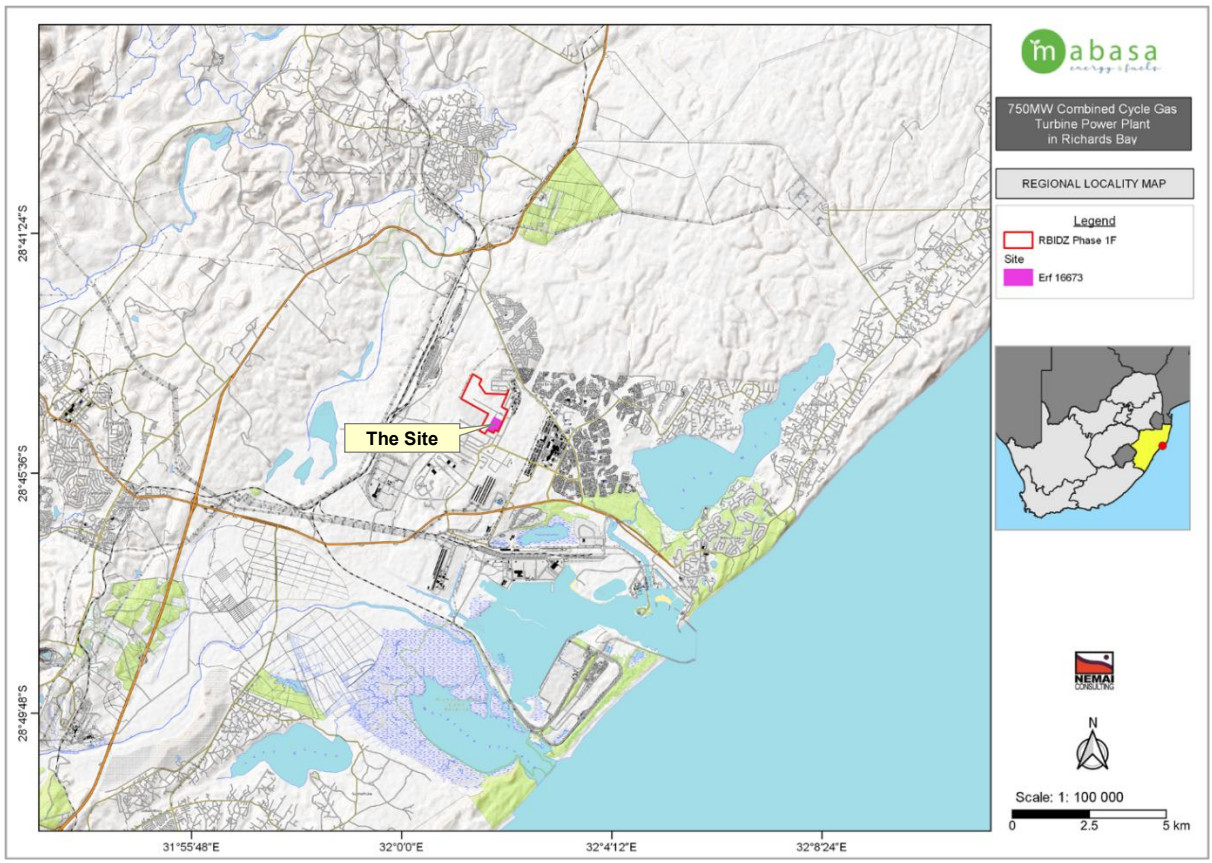


Figure 4: Proposed location for 750 MW Gas to Power Plant

4.1.1 Surrounding Land Use

The proposed project site is located in an area zoned for industrial use suggesting that there is land-use compatibility and there is a reduced risk of conflict with residential or agricultural uses. However, cumulative environmental concerns such as air and noise pollution, will need to be monitored. (See Figure 5)

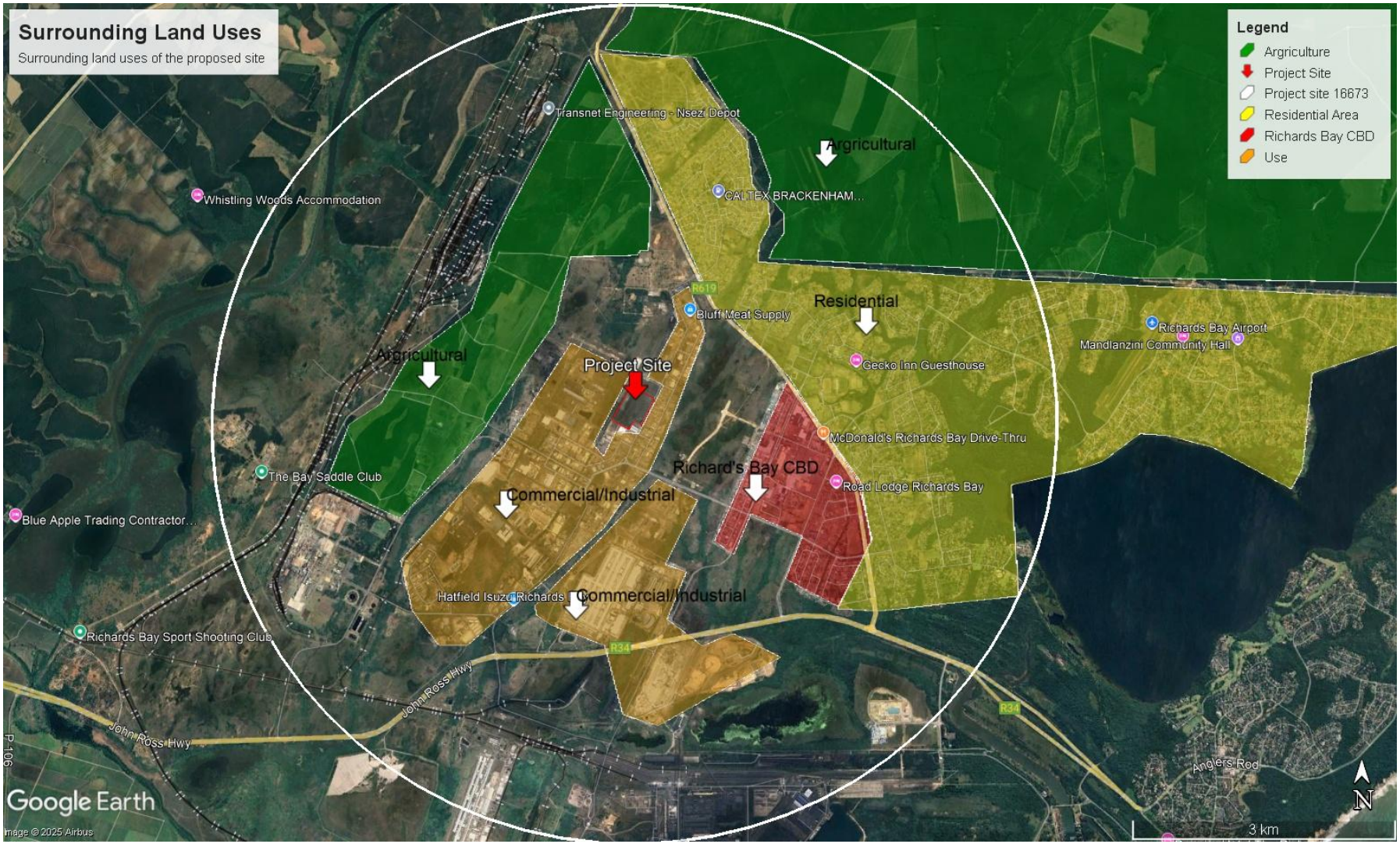


Figure 5 : Surrounding Land Uses

4.1.2 Co-centric Zones

4.1.2.1 Core Zone

The core zone represents the directly affected area, where the project infrastructure will be developed. This includes Erf 16673, situated in Phase 1F of the RBIDZ, within Ward 2 of the uMhlathuze Local Municipality (LM).



Figure 6 :Erf 16673

4.1.2.2 Direct and Indirect Employment Opportunities

An estimation of 300 local (preferably Ward 2, uMhlathuze LM), technicians and construction workers is expected to be directly employed during the construction phase of the project. Additionally, more subcontractor businesses will be hired, providing indirect work opportunities. The civil works will be handled by a local contractor, guaranteeing local economic involvement. The project will further improve workforce development in the region by requiring a variety of positions, including skilled and semi-skilled labourers. During the operational phase, it is expected that 50 local personnel will be directly employed for plant operations and maintenance. The workforce will include local and a mix of job seekers from other parts of the country to support knowledge and skills transfer and capacity building so that local labourers gain valuable skills. Workers will get practical taining in power plant operations, setting them up with the required skills to advance their careers in the energy space over the long run.

Similar projects in South Africa have been able to yield on average 1 500 to 2 000 jobs (directly and indirectly) during the construction phase of the project and during the operational phase, around 100-150 permanent jobs. Examples of similar projects in South Africa are the Dedisa Peaking Power Plant (335 MW) in the Coega Industrial Development Zone, in the Eastern Cape province which started operating on the 20th of July 2016 and the Avon Peaking Power Plantt (670 MW) in Shakaskraal, of KwaZulu-Natal province operating from September

2015.The projects managed to create a total of 3724 direct jobs by December 2023 with 3 045 (82%) job opportunities being made available during the construction phase and 679 (18%) jobs during the operational phase of the project (Department of Mineral Resources and Energy, 2023).

The following table provides a comparison of employment estimates and local participation across three gas-to-power projects.

Table 3 : Employment and Local Participation Across Gas-to-Power Projects

Project Name	Capacity (MW)	Construction Jobs	Operational Jobs	Local Employment
Dedisa Peaking Power Plant	335 MW	800	50	50%
Avon Peaking Power Plant	670 MW	1200	80	55%
Proposed Gas to Power Plant	750 MW	500 -1300	80-120	60-70%

The Proposed Gas to Power Plant's estimates are derived from employment patterns seen in related projects. Considering its bigger capacity of 750 MW, it is expected that the construction phase will create 500 to 1300 employment opportunities. However, this is dependent on the complexity of the project design, how long the project actually takes to complete and the level of local contractor involvement. Estimates for operational jobs fall between 80 and 120, which is comparable to the Avon Peaking Power Plant (670 MW, 80 jobs). Factors including the availability of worker training programs, the plant's maintenance requirements, and the degree of automation are taken into account when determining the number of operational roles. These factors affect the number of workers required; a higher level of automation and low maintenance may result in fewer jobs, while greater training and less automation may need more local people.

4.1.3 Secondary Zone



Figure 7: Ward 2 Richards Bay, uMhlathuze LM

The secondary zone covers Ward 2, which is a larger Richards Bay region, including Alton North, other industrial precincts and adjacent residential areas or neighbourhoods, in addition to the project site. It is important to analyse this area because there is existing infrastructure that the proposed project may rely on, various local services providers and suppliers could be involved and there is an opportunity for jobs especially for people living and working in Richards Bay.

4.1.3.1 Direct and Indirect Employment Opportunities

The broader Richards Bay region will benefit from direct employment opportunities in the following industries:

- Logistics and supply chain management and the supply of goods and services needed for the project's building and operation stages are expected to benefit the larger Richards Bay area.
- Transport and Construction businesses will be in demand and there will be an increased need for skilled workers, drivers and technical support positions.
- Similar impacts opportunities may arise during the operational phase.

4.1.3.2 Skills Development

A training Centre will be developed as part of the project will provide benefits to the broader Richards Bay region. Workers will have access to specialised training courses in the operation and maintenance, environmental management and energy production space.

4.1.3.3 Local Businesses and Service Providers

Demand is expected to rise for local companies that offer services including logistics, food and catering, equipment rental, and transportation. Increased business for local entrepreneurs and businesses from these services, which are essential to the smooth completion of the building and operation stages. There is also opportunity for informal trading that is usually observed around construction sites in the country where locals are able to sell products within a short distance from the site. Additionally, local companies in industries including manufacturing, retail, and wholesalers will be stimulated by the secondary zone's businesses' ability to supply supplies, construction components, and operational resources. The hospitality industry, including hotels and lodges, may benefit due to temporary workers and business visitors.

4.1.3.4 Community Well-being

The influx of workers and associated business activity during the construction phase will likely put pressure on local housing markets, infrastructure, and essential services in Richards Bay. The districts around Alton North and other industrial precincts, as well as nearby residential neighbourhoods that might accommodate both temporary and permanent workers, will be the most affected. The demand for healthcare facilities, including clinics and hospitals, may increase due to work-related injuries, general health check-ups, and emergency medical needs. If workers relocate with their families, local schools and childcare centres could experience an influx of new enrolments. Increased movement of workers, heavy machinery,

and construction vehicles may cause congestion on main transport routes, especially during peak hours.

4.1.4 Tertiary Zone

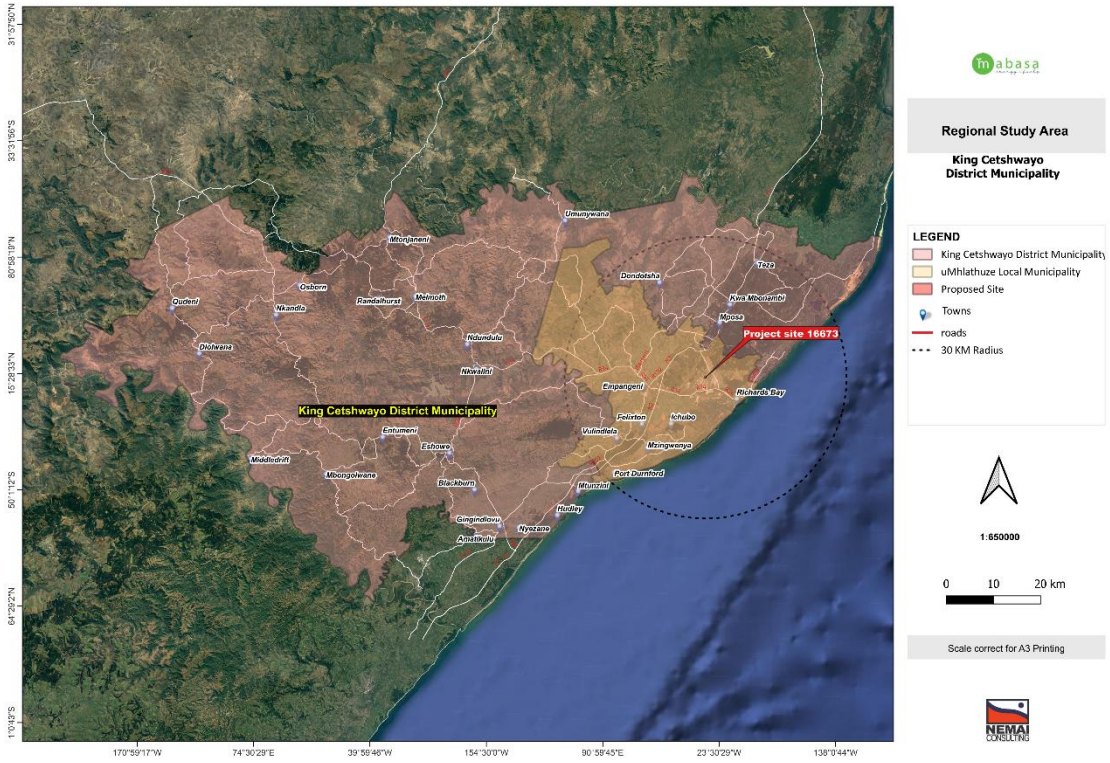


Figure 8 Regional Study Area

The tertiary zone includes the wider municipal and provincial areas, covering the uMhlathuze Local Municipality, King Cetshwayo District Municipality, and KwaZulu-Natal province. The project contributes to regional economic development and aligns with the municipal and provincial planning policies. Furthermore, it ties into the long-term development goals for industrial growth and job creation.

4.1.4.1 Economic Growth and Industrial Development

The project complements the larger economic development plans of King Cetshwayo District Municipality and uMhlathuze Municipality, which place a strong emphasis on infrastructural growth, industry, and energy security. It further supports the Local Economic Development growth (LED) Strategy, which places a high priority on attracting investment, industrial growth, and energy infrastructure.

5. RELEVANT LEGISLATION, STANDARDS AND GUIDELINES

To ensure that a development is socially, legally, and environmentally responsible, it must adhere to a number of regulations, guidelines, and best practices. This section outlines the regulations and standards that are relevant to the project.

5.1 International Guidelines and best practices

5.1.1 International Finance Corporation Performance Standards (2012).

The International Finance Corporation (IFC) has standards which assist projects in appropriately managing their effects on the environment and society. The performance standards include topics including guaranteeing ethical work practices, safeguarding public health and safety, preserving biodiversity, and reducing pollution.

5.2 National Legislation

5.2.1 The Constitution of South Africa (Act 7 of 1996)

The Constitution emphasizes human rights with the intention of establishing a society based on democratic values, social justice and fundamental human rights. Furthermore, The Constitution recognizes the general need to improve the quality of life of all citizens. These constitutional rights can be used to support reasonable environmental demands. Other fundamental rights in the Constitution which support environmental demands include:

- The right to life (Section 11).
- The right to human dignity (Section 10).
- The right to privacy (Section 14).
- Certain social rights.
- Social rights relevant to environmental rights:
- The right of access to adequate housing (Section 26).
- The right of access to sufficient food and water (Section 27).
- The right of access to health care services (Section 27).
- The rights of children to basic nutrition and shelter, and to be protected from maltreatment; neglect; abuse or degradation (Section 28).

5.2.2 National Development Plan (2011)

The National Development Plan (NDP) of 2010 proposes to “invigorate and expand economic opportunity through infrastructure, more innovation, private investment and entrepreneurialism.

The Plan aims to ensure that all South Africans attain a decent standard of living through the elimination of poverty and reduction of inequality. The core elements of a decent standard of living identified in the Plan are:

- Housing, water, electricity and sanitation;
- Safe and reliable public transport;
- Quality education and skills development;
- Safety and security;
- Quality health care;
- Social protection;
- Employment;

- Recreation and leisure;
- Clean environment; and
- Adequate nutrition.

5.2.3 Integrated Resource Plan (2019 and 2023 Draft)

Integrated Resource Plan (IRP) serves as a strategic framework for the country's electricity infrastructure development, aiming to balance supply and demand while considering factors such as cost, environmental impact, and energy security. The IRP is periodically updated to reflect changing circumstances, technological advancements, and policy shifts. The draft IRP 2023, released for public comment in January 2024, builds upon the foundations of the 2019 plan, with adjustments reflecting recent developments and future projections. The proposal includes the consideration of natural gas and nuclear power as part of the energy mix to ensure a stable and reliable supply, acknowledging the need for baseload power to complement intermittent renewable sources.

5.2.4 The Spatial Planning and Land Use Management Act, 2013 (SPLUMA)

SPLUMA provides a framework for spatial planning, land use management, and land development in South Africa. Its provisions are crucial for ensuring that the development of is done in an orderly, efficient, and sustainable manner. SPLUMA mandates the integration of various spatial planning instruments and frameworks at national, provincial, and municipal levels.

5.2.5 National Environmental Management Act (Act 107 of 1998)

The National Environmental Management Act (NEMA) and the principles contained therein have a significant influence on the need to identify and assess social impacts. The NEMA principles are based on the basic rights as set out in Chapter 2 (Bill of Rights) of the Constitution as referred to above.

According to Barber (2007:16) the following NEMA principles have an important impact on social issues:

- Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably;
- Development must be socially, environmentally and economically sustainable;
- Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must consider the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option;
- Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons;
- Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special

measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination;

- The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured;
- Decisions must consider the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge;
- Community well-being and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means;
- The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in light of such consideration and assessment;
- The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected;
- Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law;
- The environment is held in public trust for the people. The beneficial use of environmental resources must serve the public interest and the environment must be protected as the peoples' common heritage; and
- The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.

5.2.6 Guideline for Involving Socio-Economic Assessment Specialists in EIA Processes

These guidelines direct the role of social assessment specialists in the EIA process within the South African context (Barbour, 2007).

5.2.7 Social Impact Assessment: Guidance document (2015)

This document encapsulates the core values of the international SIA community providing a set of principles to guide SIA practitioners in incorporating the social element into environmental impact assessments (Vanclay, Esteves, Aucamp, & Franks, 2015).

5.2.8 National Energy Act (Act No 34 of 2008)

The National Energy Act (Act No 34 of 2008) in South Africa aims to ensure that diverse energy resources are available in sustainable quantities and at affordable prices to support economic growth and poverty alleviation. It considers environmental management requirements and interactions among economic sectors. Some of the key components specific to the proposed development include.

- The act emphasises diverse energy resources are accessibility to the South African economy. This includes planning for increased generation and consumption of renewable energies, contingency energy supply, and holding of strategic energy feedstocks and carriers.
- The Act emphasizes adequate investment in, appropriate upkeep, and access to energy infrastructure. Integrated Resource Plan (2019).

5.3 Regional and Local Legislation

At a more localized level, the project must align with:

5.3.1 UMhlathuze Local Municipality: Fifth Generation IDP 2022/2027

The uMhlathuze Integrated Development Plan integrates various key principles and government development frameworks, with a specific focus on planning and development to ensure targeted interventions in areas of identified need and potential. These include Provincial Growth and Development Strategic Principles, the Provincial Growth and Development Strategy, alignment with Sustainable Development Goals, and other significant charters.

5.3.2 UMhlathuze Municipality 5th Generation: Spatial Development Framework

Spatial Development Framework for uMhlathuze Municipality for the period 2022/2023 – 2026/2027, directs the general spatial arrangement of existing and preferred land uses in the municipality to implement the vision, aim and objectives of the municipal integrated development plan.

The following strategy documents are in line with the framework:

- Municipal Systems Act (MSA) Regulations;
- Spatial Planning and Land Use Management Act (Act No 16 of 2013)
- King Cetshwayo District Municipality Environmental Management Framework
- Stats 2011-2022 census results
- Transnet Richards Bay Port Development Framework
- Various Municipal Sector Plans

5.3.3 City of uMhlathuze Local Economic Development Strategy

The city of uMhlathuze Local Economic Development (LED) Strategy is a comprehensive plan designed to stimulate economic growth, create jobs, and improve the quality of life for residents in the uMhlathuze municipality.

6. STATUS QUO ANALYSIS

6.1 Population Demographics

6.1.1 Population

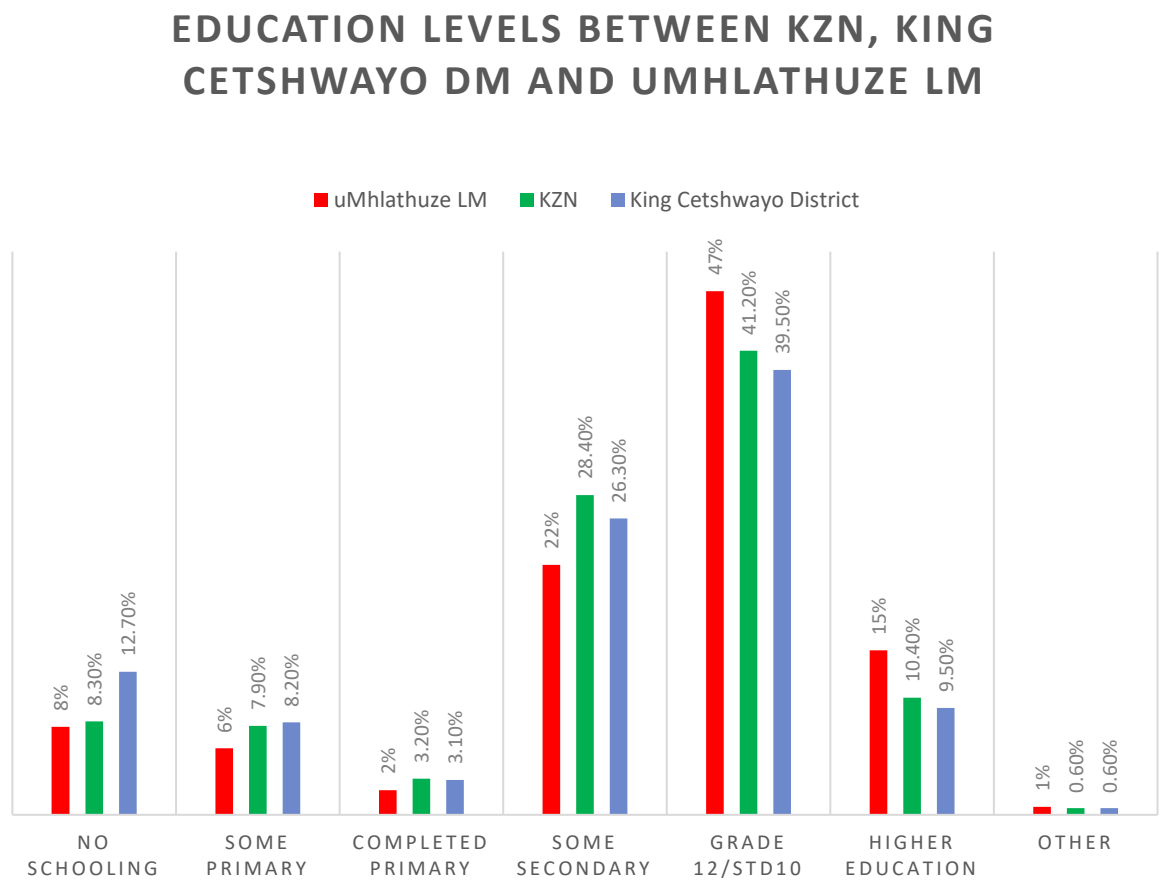
Between the years 2011 and 2022, the population in KwaZulu-Natal (KZN) increased by 21% and of that 21%, the city of uMhlathuze and the King Cetshwayo district contributed significantly by 12.54%. The increase in population could be tied to the region's growing attractiveness to job seekers, developers or investors. Migration due to urban development and job opportunities is normally the biggest contributor to population growth.

Table 4 : Provincial, regional and local population size

Year	Kwazulu Natal Provincial population	King Cetshwayo District Municipality	City of uMhlathuze Local Municipality
2011	10 267 300	907 519	370 256
2022	12 423 907	1 021 344	412 075
Increase % rate	21.00%	12.54%	11%

6.1.2 Education Levels

According to the educational data from Statistics South Africa (2022), 8% of individuals in uMhlathuze LM reported having no schooling, which is lower than the 12.7% in KZN and the 8.3% in King Cetshwayo District Municipality between 2011 and 2022. This suggests that uMhlathuze has made progress in reducing educational barriers compared to the broader province and district. A stronger educational foundation means that fewer workers may need to be sourced externally, supporting local employment participation (estimated at 60-70%) and maximizing the project's social benefits. While the project prioritizes local labor, it is important to acknowledge that certain specialized skills may not be readily available within the local labor pool. However, targeted technical training programs will still be essential to equip local workers with the specialized skills needed for plant operations and maintenance. In addition to ensuring a dependable and competent workforce, matching employment and skill-development plans with the local educational profile can increase the project's positive impact on the community.



6.1.3 Income Levels

According to the uMhlathuze Local Municipality Integrated Development Plan (IDP) 2024/2025, household income levels have shifted significantly over the years, with a worrying increase in lower-income groups. Households that are earning less than R1200 have increased from 26% in 1996 to 34% as of 2011.Meanwhile, households earning over R50000 have decreased from 38% to 3% in the same period.

The income levels highlight both challenges and opportunities. On the one hand, the high percentage of lower-income households exposes the need for job creation and economic stimulation,and on the other hand, the growing number of the low to middle income earners highlights a demographic that can benefit from skill development initiatives and economic growth opportunities.

Table 5: Income levels in uMhlathuze Local Municipality

Income Group (R/month)	1996 (%)	2011 (%)	Change (1996–2011)
<1,200	26%	34%	+8%
1,200 – 2,000	1%	12%	+11%
2,000 – 5,000	2%	15%	+13%
5,000 – 10,000	5%	14%	+9%
10,000 – 20,000	9%	12%	+3%

Income Group (R/month)	1996 (%)	2011 (%)	Change (1996–2011)
20,000 – 50,000	19%	9%	-10%
>50,000	38%	3%	-35%

Source: uMhlathuze Local Municipality Integrated Development Plan 2nd Review, 2024/2025

The project is an essential chance to create jobs during both the construction and operating stages, as seen by the rise in households earning less than R1,200 (from 26% in 1996 to 34% in 2011). By giving lower-income groups priority for employment possibilities, the project can help reduce income gaps, as local employment is expected to be between 60 and 70 percent.

6.2 Economic Conditions

6.2.1 Employment Rates and key economic sectors

The economic situation in KwaZulu-Natal, as detailed in the Quarterly Labour Force Survey Q3:2024 report, paints a mixed picture. On one hand, there is a small but notable improvement. The official unemployment rate dropped slightly from 31.4% in Q2:2024 to 31.2% in Q3:2024. While this is a step in the right direction, it's still a worrying figure, especially when you consider the expanded unemployment rate, which includes people who've stopped looking for work. At 45.6%, it shows that nearly half of KZN's working-age population is either without a job or has given up on finding one.

Table 6 : Employment gains by industry in Q3 2024

Industry	Job Increase	Percentage Increase
Community and Social Services	194000	5.1%
Construction	176,000	14.7%
Trade	109,000	3.2%
Agriculture	39,000	4.4%
Mining	27,000	6.0%
Utilities	13,000	11.7%

Source: QLFS, Q3,2024

The above table shows where job growth happened in Q3 2024, breaking down the specific employment gains and percentage increases across different industries. It is clear that sectors such construction, utilities, and community services played a big role in creating jobs during this period. These numbers give us a view of which areas are driving employment right now. The data comes from the latest employment report by Stats SA (2024). The increase in employment in these industries suggests a growing demand for skilled labor, which may align with the labor requirements of the project, particularly for construction and infrastructure development. Significant job opportunities are anticipated to be created throughout the

development phase, especially in industries like manufacturing, community services, and construction that have experienced notable growth in KZN (see Table 6). Such opportunities can give the local economy a much-needed boost, especially in the districts surrounding Richards Bay, where unemployment rates are high.

On a regional scale, uMhlathuze is the most developed economy in the King Cetshwayo District and plays a key role in the region, contributing 48% to the district's GDP as of 2016 (uMhlathuze LED Strategy, 2016).

Table 7: Economic Sector Distribution in uMhlathuze Municipality (2016)

Economic Sector	uMhlathuze %
Primary Sector	9.3%
Agriculture	7.6%
Mining	1.7%
Secondary Sector	24.2%
Manufacturing	12.4%
Construction	11.5%
Tertiary Sector	66.6%
Trade	18.8%
Transport	7.0%
Finance1	3.3%
Community Services	20.3%

Source: uMhlathuze Local Economic Development (LED) Strategy, 2016

The high employment in the secondary sector, particularly in manufacturing (12.4%) and construction (11.5%), highlights a well-established workforce in sectors that are expected to benefit directly from the RBIDZ development. Additionally, the project aligns with the labor trends in uMhlathuze, where sectors like construction (11.5%) and manufacturing (12.4%) already contribute significantly to local employment (see Table 7).

6.3 Social Conditions

6.3.1 Safety and Security

The Richards Bay police precinct is the closest to the proposed project area. The figure below presents an overview of reported crimes in the vicinity for the 2023/2024 period. The most prevalent crime was theft with 485 incidents followed by commercial crime at 470 incidents. Truck hijackings were recorded only once while car thefts occurred 29 times. Additionally, burglary at non-residential premises was a notable concern with 121 incidents reported. Drug-related crimes are also a significant issue reflecting the need for targeted substance abuse interventions particularly in the proposed project.

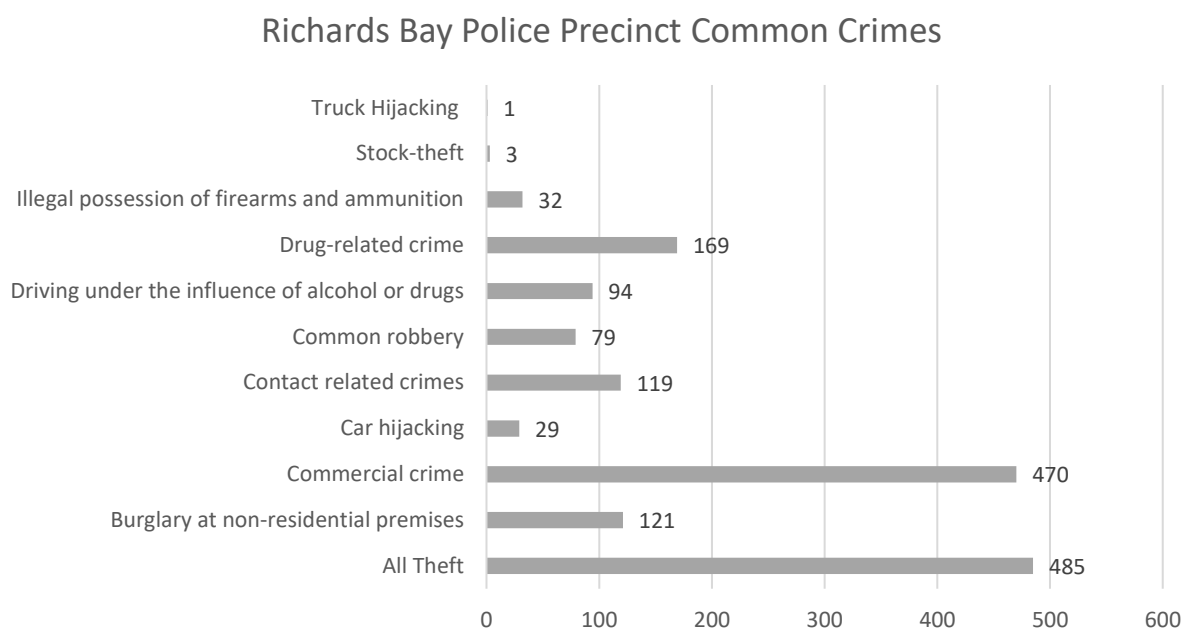


Figure 9: Richards Bay Police Precinct Common Crimes (2023/2024)

According to the latest crime data for the 2023/2024 period, common crimes include theft (485 incidents), commercial crime (470 incidents), and burglary at non-residential premises (121 incidents), among others. These crime trends, combined with factors such as unemployment and poverty, indicate potential risks to both the project and its workforce, particularly during the construction phase when there will be an influx of temporary workers and increased activity in the area. Increased security measures surrounding the project site would necessarily given the frequency of crimes like theft and burglary. Given the high rate of drug-related crimes in the area, targeted substance misuse interventions are necessary, particularly if the project draws in younger employees or people from the neighbourhood. Crime in the surrounding area may also stem from social pressures, such as lack of employment opportunities and poverty and while the project will create local jobs, it will be important to manage community expectations and ensure transparent communication about the nature of the employment opportunities, including requirements for skilled labour and training.

6.3.2 Health

The City of uMhlathuze LM is serviced by Queen Nandi Regional Hospital, two local hospitals and several clinics providing healthcare services in the area. According to Stats SA (2021), KZN faced a significant challenge from both chronic and infectious diseases. Additionally, in 2018 other forms of heart disease were the leading natural cause of death, accounting for 8.2% of deaths. This was followed by Diabetes mellitus at 7.1%, tuberculosis (TB) at 6.8%, cerebrovascular diseases at 5.7%, and HIV at 5.4%. This information suggests that a careful assessment and mitigation measures of potential health implications on the local population needs to be thoroughly carried out.

The local population's vulnerability is reflected in the high burden of infectious and chronic diseases, as detailed in the 2021 Stats SA report. This must be taken into account during the project planning and implementation stages. Increased patient volume may be too much for

current healthcare facilities, especially when it comes to managing normal medical treatment or emergency circumstances for the local population and project staff. The risk of respiratory issues due to dust exposure is particularly concerning, especially given the prevalence of chronic respiratory diseases like tuberculosis (TB) in the region. Additionally, if basic cleanliness and healthcare procedures are not followed, there is a chance that workers and the local population can contract infectious diseases. The project should put strict occupational health and safety procedures in place to reduce these hazards. This means providing workers personal protection equipment (PPE), dust suppression techniques, and noise control strategies. By keeping an eye out for prevalent infectious diseases and guaranteeing general well-being, routine health screenings, vaccinations, and wellness initiatives can further lower health risks.

7. STAKEHOLDER ENGAGEMENT

According to the World Bank's Environmental and Social Framework (2018;97), stakeholder engagement is an important process throughout a project life cycle because it promotes inclusivity. In May 2024, the Environmental Impact Assessment practitioner conducted public participation meetings which provided insight to the concerns about the proposed project and similar projects in the area.

7.1 uMhlathuze Focus Group Meeting

7.1.1 May 15, 2024, uMhlathuze Focus Group Meeting

As part of the public participation process, a focus group meeting was held on Zoom on the 15th of May 2024 to address and take note of any concerns regarding the proposed project. Present in the meeting was the South Durban Community Environmental Alliance (SDCEA)

- Stakeholders are worried about whether the project is in line with national energy planning and if the suggested capacity is warranted. There are concerns regarding the need of a 750MW plant and whether it is excessive for local demand given the response that the RBIDZ's energy demand is anticipated to be less than 200MW.Accoring to the RDBIZ Annual Report (2023-2024), five(5) Gas to Power projects amounting to 6750MW in capacity, have been approved by the RBIDZ Board, which shows that considerable gas power investments are an important part of the larger industrial zone energy strategy. The proposed project aligns with the IRP (2019) and recognizes its recommendations for converting diesel powered plants. However, as highlighted in the RDBIZ (2023-2024), gas power plays an essential role in stabilizing the system, especially when solar and wind energy are not accessible at night or during periods of low wind. Furthermore, the use of natural gas as a transitional fuel aligns with South Africa's obligations under the Paris Agreement and international climate goals. It will boost the clean energy goals of the RBIDZ and lower Green House Gas (GHG) emissions in comparison to coal.

- Stakeholders are concerned about the ethical and governance standards of the project partners. The project's energy, procurement and construction partner's alleged involvement in the Food for Oil scandal and its association with the Gupta family was raised This raises questions about the transparency and accountability of the project, as well as potential reputational risks. It is recommended that the project partner's release a public declaration outlining their governance frameworks and ethical values and how they adhere to both international and South African anti-corruption laws.
- Stakeholders are concerned about the project's impact on water availability, particularly in a region that may face water scarcity due to climate change and increasing demand. A detailed water demand analysis with the water services provider should be made accessible to interested parties to confirm whether RBIDZ's current and future water infrastructure would be able to support the plant for the next 20 years without negatively impacting local communities and industries.

7.1.2 May 17, 2024, uMhlathuze Focus Group Meeting

As part of the public participation process, a focus group meeting was held on Microsoft teams on 17 May 2024 to address and take note of any concerns regarding the proposed project.

- Stakeholders underlined the importance of including climate change considerations into the project and evaluating cumulative impacts while taking other nearby industrial projects into consideration. (see 7.6)
- Stakeholders highlighted the importance of detailed employment benefits when issues around employment were discussed (see 3.3)
- Questions were raised about how gas will be transported, whether it will be done through a pipeline or trucks and potential traffic impacts related to that. (see 3.2). The technical report indicates gas will be supplied via an existing pipeline at the project site. With the existing infrastructure, the project does not have to depend on unreliable energy sources. Additionally, this reduces traffic impacts and gas emissions that would have resulted from truck transportation. However, community safety concerns around gas storage and handling should be addressed through emergency response planning. availability of natural gas infrastructure ensures stable fuel supply, reducing dependence on unreliable energy sources.
- Stakeholders are interested in knowing whether the project will move forward before receiving approvals for the gas and supply and grid connection, which might leave the

7.1.3 Comments and Response Report

- Stakeholder concerns regarding methane being highly toxic to both the environment and human health and worsening reports of increased asthma illness in the children and crop losses. This feedback suggested that proactive measures must be taken to address the concerns raised. A comprehensive air quality assessment, emission reduction strategies and on-going environmental monitoring are of high importance.

- There is a concern that the Richard's Bay Cemetery, which has spiritual value for many African groups, might be disrupted by the proposed project's proximity. Stakeholders are worried that potential gas leaks could jeopardize the sacred area, making it hard for locals to attend and carry out ancestor honouring rituals. A heritage study to assess significance of the cemetery and potential disruptions to cultural and religious practices is critical.
- There is a concern around the long-term social and economic benefits on surrounding communities. Although construction phase of the project would offer jobs, the relatively small number of permanent operational jobs provides limited long-term employment opportunities (See 4.1.2)

8. IDENTIFICATION OF IMPACTS

8.1 Impacts and Mitigation Framework

Social impacts are expected to arise because of a proposed project. All impacts discussed in this section will follow a context of nature, extent, magnitude, duration, probability, and significance. ISO 14001-2004 defines impacts as "any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects".

When considering an assessment of the impacts and their mitigation, the following definitions as per Table apply.

Table 8: Impact and Mitigation Framework

Nature	The project could have a positive, negative, or neutral impact on the environment.
Extent	Local – extend to the site and its immediate surroundings. Regional – impact on the region but within the province. National – impact on an interprovincial scale. International – impact outside of South Africa.
Magnitude	Degree to which impact may cause irreplaceable loss of resources: Low – natural and social functions and processes are not affected or minimally affected. Medium – affected environment is notably altered; natural and social functions and processes continue albeit in a modified way. High – natural or social functions or processes could be substantially affected or altered to the extent that they could temporarily or permanently cease.
Duration	Short term – 0-5 years. Medium term – 5-11 years. Long term – impact ceases after the operational life cycle of the activity either because of natural processes or by human intervention. Permanent – mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.
Probability	Almost certain – the event is expected to occur in most circumstances. Likely – the event will occur in most circumstances. Moderate – the event should occur at some time. Unlikely – the event could occur at some time. Rare/Remote – the event may occur only in exceptional circumstances.
Significance	Provides an overall impression of an impact's importance, and the degree to which it can be mitigated. The range for significance ratings is as follows- 0 – Impact will not affect the environment. No mitigation necessary. 1 – No impact after mitigation. 2 – Residual impact after mitigation. 3 – Impact cannot be mitigated.
Mitigation	Information on the impacts together with literature from social science journals, case studies and field work will be used to provide mitigation recommendations to ensure that any negative impacts are decreased, and positive benefits are enhanced.
Monitoring	Monitoring usually involves developing and implementing a monitoring programme to identify deviations from the proposed action and to manage any negative impacts. The recommended mitigation measures will also include monitoring measures.

Assessing social impacts is complex due to the varied nature of human interactions. Different groups of stakeholders may experience the same impact in different ways. Additionally, multiple impacts may be interconnected, and their combined effects can be significant when considered together.

8.2 Identification of Activities and Aspects

An “Activity” is defined as a distinct process, or risks undertaken by an organization for which a responsibility can be assigned. Activities also include facilities or pieces of infrastructure that are possessed by an organization (International Organization for Standardization, 2011). An aspect is defined as elements of an organization’s activities, products, or services that can interact with the environment.

To capture the impacts associated with the proposed infrastructure, an activity – aspect – impact table was created refer to the table below.

Activity	Aspect	Potential Impact – Positive	Potential Impact – Negative
Project Planning Phase	Compliance with Municipal By-Laws	Ensures project is aligned with the local regulations	• Bureaucratic / administrative delays if approvals take longer than expected • There is a risk of a stranded asset if the project fails to meet all requirements if construction proceeds.
	Attitude Formation.	Increased public awareness of project benefits	Misinformation and lack of trust if engagement is not done sufficiently.
	Social planning	Potential for local job creation and skills development especially in the local region.	

Activity	Aspect	Potential Impact – Positive	Potential Impact – Negative
Project Construction Phase	Phase II entails. • Site preparation works such as site establishment, clearance of vegetation for infrastructure, excavation works. • Construction of the plant. • Installing two Combustion Turbine generator packages, • Installing two Heat Recovery units, • Installing one Steam Turbine, • Installing a Distributed Control System • Construction of all civil works • Construction of all buildings including the workshop area.	• Employment of local people • Opportunities for local businesses e.g. Small, Medium, and Micro Enterprises (SMMEs • Renewable energy skills development for local participation. • Promotion of large-scale investment opportunities in the area. • Creation of green jobs. • Economic development for local suppliers.	• Injuries and poor workforce health. • Influx of people seeking employment and associated impacts (e.g., cultural conflicts, squatting, demographic changes, anti-social behaviour, and incidence of HIV • Increased Traffic • Noise, Dust and Security impacts. • Risk of trespassing, property damage and theft
	Site commissioning and Rehabilitation	Rehabilitation of temporary disturbed areas. And the Restoration of damaged environmental conditions.	Damage or wear to access roads
Project Operations Phase	Phase II: • Plant operation including gas storage and handling. • Training and development waste disposal such as air quality emissions, • Electricity generation	Economic growth and induced impacts	• Power supply disruptions during the project (commissioning activities). • Increased Greenhouse gas emissions. • Noise and Air pollution
	Supply of goods and services to the project for 20 years.	Opportunity for large scale investments.	

Activity	Aspect	Potential Impact – Positive	Potential Impact – Negative
	Maintenance and management	• Long term local employment opportunities. • Continuous skills development Potential investment in local infrastructure and services.	

8.3 Impacts during Planning Phase

The planning phase of any project ensures the analysis of potential impacts, this allows the assessment of any risk to be measured from a scale of high, medium, or low. This pro-active approach ensures the identification of key social issues that can be mitigated before moving further to other phases of the project development.

The assessment of the key social issues for the proposed project were identified based on the project related information including specialist studies, primary data collection methodologies, project team's familiarity with the project area, experience with similar project studies and in accordance with key policy documents.

8.3.1 Attitude formation

The formation of attitudes towards the project is important as community members and stakeholders will form opinions based on their perceptions of the project's benefits and drawbacks. Positive attitudes are likely to form if the project is seen as addressing local needs, creating job opportunities, and improving infrastructure. Otherwise, negative attitudes may form if there are concerns about displacements, increased cost of living, or perceived lack of community engagement.

8.3.2 Compliance with municipal by-laws.

Ensuring compliance with municipal by-laws or land use scheme is an important aspect of the project's legal framework. Adherence to zoning regulations, construction standards, and environmental laws will help mitigate potential legal and social problems in the future.

8.3.3 Local empowerment and inclusivity

Ensuring that local residents are actively involved in the decision-making process and that their voices are heard is essential for fostering a sense of ownership and support for the project. Opportunities for local employment, skills development, and business participation will contribute to economic empowerment and social inclusion. However, there is a risk that unskilled local labour might be excluded from technical jobs, which needs to be addressed through targeted training and education programs. The project should aim to provide equal opportunities for all community members, addressing disparities in access to resources, employment, and services. Special attention should be given to vulnerable groups, including

women, youth, and low-income families, to ensure they benefit from the project's positive impacts and are not disproportionately affected by any negative impacts.

8.3.4 Mitigation Measures

Table 9 :Planning phase mitigation measures

Environmental Feature	Planning Impacts					
Project Phase:	Pre- construction Phase					
Potential Impact	Proposed Management Objectives / Mitigation Measures					
Attitude formation & Compliance with Municipal by laws	• Early consultation between the project authorities, adjacent landowners, tenants and other relevant stakeholders must take place to allow sufficient time before construction activity commences • Public declaration outlining their governance frameworks and ethical values • Clear, competitive bidding procedures should be used for contracting and procurement in order to avoid inappropriate influence.					
Local Empowerment and Inclusivity	• Avoid overstating economic benefits • Provide a transparent job assessment • Prioritize local hiring for project-related jobs. Create specific programs to train and upskill local residents • Encourage local businesses to participate in the project by sourcing equipment, materials, and services locally. • Make provisions for a Community Liaison Officer					
Compliance with Municipal By-Laws	• Conduct a legal and regulatory compliance assessment to identify all applicable municipal by-laws.					
	Nature	Extent	Magnitude	Duration	Probability	Significance
Before Mitigation	Negative	Local	Medium	Short Term	Likely	2
After Mitigation	Negative	Local	Low	Short Term	Moderate	1

7.1. Impacts during the Construction Phase

The Construction Phase of the proposed project will commence once the environmental and other approvals are obtained. The construction activity will impact the social environment both positively and negatively.

7.1.1. Local Business and Employment opportunities

One of the primary positive impacts during the construction phase is the creation of local employment opportunities. The construction of the power plant will require a workforce for site establishment, clearing and grubbing, excavation, and trenching activities. This will provide job opportunities for residents, potentially reducing unemployment and improving the local economy. Additionally, sourcing equipment, machinery, and services locally will further boost economic activities and benefit local businesses. However, it is important to ensure that these opportunities are distributed fairly, and that local labor is prioritized to maximize local community benefits.

7.1.2. Economic benefits for the local municipality

The local municipality will benefit from increased tax revenue and the property rates on the site will also add to the municipal income. Infrastructure investments will reduce financial strain in the regional and local municipality, resulting in better service delivery and economic growth.

7.1.3. Job Seeker Influx

The anticipation for employment and economic opportunities is likely to attract people from other areas, leading to an influx of job seekers. This can have several negative social impacts, including cultural conflicts, division of leadership power, more squatting, demographic changes, anti-social behaviour, and increased incidences of diseases. These challenges require proactive planning and community engagement to ensure that the influx of people is managed effectively, and that social cohesion is maintained.

7.1.4. Noise and Dust Pollution

Construction activities such as site establishment, clearing, excavation, and transportation of equipment are likely to generate noise and dust than usual. This pollution can negatively impact the health and quality of life of nearby residents. Prolonged exposure to high noise levels can lead to hearing problems, stress, and sleep disturbances, while dust can cause respiratory issues and other health problems. It is important that measures to control noise and dust pollution are implemented. Recommended methods include using temporary wind breakers and limiting construction activities to specific hours of the to minimize disturbances for the nearby community. A thorough Health Impact Assessment (HIA) needs to be carried out in order to satisfy stakeholder concerns over possible health hazards connected to the proposed Gas-to-Power Plant.

7.1.5. Increased traffic and mobility Issues.

The transportation of equipment and large machinery required for construction will affect traffic flows. This can lead to mobility issues for both pedestrians and vehicles, impacting access to properties and public amenities. Increased traffic can also elevate the risk of accidents and pose safety concerns for the community

7.1.6. Security Concerns.

The construction phase will also bring security concerns. Increased construction activity and the influx of workers can lead to heightened security risks, including theft of construction materials and equipment, vandalism, and general crime. There is also the potential for increased property-related crimes such as theft and burglary, which can pose serious risks to the safety of residents and businesses in the vicinity of the construction site. Implementing effective security measures, such as hiring security personnel, installing surveillance systems, and establishing a community policing initiative, can help mitigate these risks and ensure the safety of both the construction site and the surrounding community. Additionally, fostering strong relationships between construction workers, local residents, and law enforcement can enhance overall security and community trust.

7.1.7. Construction Waste

The construction activities will generate a lot of waste, including debris from site clearing and grubbing, excavation materials, packaging materials, and other construction-related waste material If not managed properly, this waste can accumulate, leading to unsanitary conditions, potential health hazards, and environmental pollution. The construction site must have an effective waste management plan that includes the segregation of waste, recycling where possible, and the proper disposal of non-recyclable materials. Furthermore, poor waste management can lead to negative perceptions of the project, reducing community support and cooperation.

7.1.8. Mitigation Measures

Table 10 : Mitigation of Construction Phase impacts

Environmental Feature	Construction Impacts
Project Phase:	Construction Phase
Potential Impact	Proposed Management Objectives / Mitigation Measures
Local Business and employment opportunities	• Establish a local hiring policy to prioritize the employment of residents. • Collaborate with local training institutions to develop skills training programs to prepare local workers for available positions. • Monitor and report on the number of local residents employed to ensure targets are being met.
Job Seeker Influx	• Develop and implement transparent communication channels between the project team and the community about local hiring processes. • Establish a skilled and unskilled database for unemployed residents to ensure that locals are prioritised.
Local Empowerment and Inclusivity	• Prioritize local hiring for project-related jobs. Create specific programs to train and upskill local residents • Encourage local businesses to participate in the project by sourcing equipment, materials, and services locally. • Make provisions for a Community Liaison Officer • Establish a Project Steering Committee
Noise and Dust Pollution	• Ensure that environmental management plan includes health risk monitoring. • Use temporary windbreakers and dust suppression techniques such as water spraying. • Limit construction activities to specific hours of the day to minimize disturbances for the nearby community. • Install noise barriers and use low-noise equipment where possible.
Traffic flows	• Identify and use specific routes for transporting equipment to avoid high-traffic areas and sensitive zones. • Install clear warning signs, speed limit indicators, and road safety measures to alert pedestrians and drivers of construction-related traffic if required.

Environmental Feature		Construction Impacts				
Project Phase:		Construction Phase				
Potential Impact		Proposed Management Objectives / Mitigation Measures				
		• Inform the community/local businesses in advance about construction schedules and potential traffic disruptions.				
Security Concerns		• Hire security personnel to monitor the construction site and surrounding areas. • Install surveillance systems to discourage theft and vandalism. • Conduct regular security audits to identify and address potential vulnerabilities.				
Construction Waste		• Develop a waste management plan. • Establish regular waste collection and disposal schedules. • Promote recycling initiatives to minimize waste.				
	Nature	Extent	Magnitude	Duration	Probability	Significance
Before Mitigation	Negative	Local	Medium	Short Term	Likely	2
After Mitigation	Negative	Local	Low	Short Term	Moderate	1

7.2. Impacts during the Operational Phase

7.2.1. Economic development

The Power Plant will stimulate economic growth, offering employment opportunities and fostering entrepreneurship. By attracting businesses, the development contributes to the overall economic vibrancy locally, regionally and on a national scale.

7.2.2. Improved electricity supply

The national grid will improve the general electricity availability, especially considering the national energy crisis. This will boost economic growth and industrial development.

7.2.3. Mitigation Measures

Table 11: Mitigation measures during the operational phase

Environmental Feature	Operational Impacts
Project Phase:	Operation Phase
Potential Impact	Proposed Management Objectives / Mitigation Measures
Local Economy Development	• Prioritize hiring residents from the local community (Ward 2) and for general labor positions, such as cleaning services, landscaping, and maintenance. This will create job opportunities and boost the local economy. • Seek service providers within the local and regional area of the project.
Improved Energy supply	• Implement regular infrastructure maintenance to prevent power outages and ensure consistent service delivery.
Security Concerns	• Ensure that all pedestrian walkways, entrances, and public spaces are equipped with adequate lighting to eliminate dark or hidden areas that could encourage criminal activities.

Environmental Feature		Operational Impacts				
Project Phase:		Operation Phase				
Potential Impact		Proposed Management Objectives / Mitigation Measures				
		• Prioritize hiring security staff from the local community. This not only creates job opportunities but also fosters trust and familiarity between security personnel and residents, enhancing the sense of safety.				
	Nature	Extent	Magnitude	Duration	Probability	Significance
Before Mitigation	Negative	Local	Medium	Short Term	Likely	2
After Mitigation	Negative	Local	Low	Short Term	Moderate	1

7.3. Cumulative Impacts

It is important to understand the combined impacts of the proposed project in Richards Bay in relation to similar projects in the past, present and future developments. Richards Bay's industrial and economic environment will benefit from the proposed 750MW gas-to-power plant, especially in the RBIDZ. Its combined impacts, however, must be weighed against other industrial developments, such as numerous authorized gas-to-power projects, manufacturing facilities, and port expansion initiatives. Together, these projects will boost infrastructure, job prospects, and regional economic growth, but they may also exacerbate environmental stresses including air pollution, water demand, and the burden on local services. Additionally, local companies, social services, and housing may be impacted by the inflow of temporary workers during construction. A coordinated strategy combining environmental management techniques, stakeholder participation, and municipal planning is necessary to manage these effects in order to minimize negative impacts and increase positive ones.

9. ALTERNATIVE ANALYSIS

7.4. No-Go Alternative

The No-Go Alternative takes into account what would happen if the planned 750MW gas-to-power plant was not built. In this instance, neither the national grid nor the RBIDZ receive any new energy capacity, so the status quo is maintained. Even though this would stop possible environmental and social hazards like air pollution, rising water consumption, and pressures from industrial growth, South Africa would still experience power outages, which have a detrimental impact on creating jobs, industrial productivity, and the economy.

7.5. Technical Alternatives

No technical alternatives were considered for this SIA.

10. SITE SENSITIVITY VERIFICATION

The sensitivity of the project site was assessed using the methodology detailed in this report, confirming compliance with EIA regulations as no significant social themes were identified in the screening tool. The methodology used in the study includes an assessment of current land use patterns, supported by reasoning and evidence for how the land is currently utilized. Given the project's scope and potential impacts, the study area was expanded beyond the immediate site and its adjacent properties to ensure a thorough assessment of potential social implications.

11. IMPACT STATEMENT

It is expected that the proposed 750MW gas-to-power plant in the RBIDZ will have a substantial impact on the environment and the community across different geographic and economic levels, both positively and negatively. Although the project intends to improve energy security, boost regional economic growth, and generate job opportunities, it also raises possible issues with energy usage, environmentally friendly practices, and social issues.

Economically speaking, the project will create approximately 500 jobs during construction and more than 50 skilled employments throughout operation, boosting household earnings and the local economy. Additionally, supply chain connections, infrastructural growth, and local company involvement will create indirect and induced opportunities for employment.

Socially, the project's closeness to local communities and cultural landmarks, such the Richards Bay Cemetery, has raised questions about religious customs, air quality, and legacy preservation. Furthermore, even if industrial growth creates jobs, the inflow of workers may put extra strain on public services, housing, and healthcare. Environmental factors include water use, air pollution, and the cumulative impact of several industrial operations in the RBIDZ. For the project to avoid making the current environmental and public health issues worse, a thorough health impact assessment, pollution control strategies, and water sustainability planning are needed. A well-rounded strategy is necessary to minimize possible risks and maximize the project's benefits.

The project may produce a sustainable and responsible development outcome that promotes South Africa's energy transition and socioeconomic advancement by adhering to environmental and social management frameworks, ensuring strong governance, and engaging stakeholders transparently.

12. REFERENCES

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13. APPENDIX ONE – GOOGLE EARTH FLYOVER