Appendix G.11 Social Impact Assessment

SOCIAL IMPACT ASSESSMENT

IGOLIDE GRID CONNECTION

GAUTENG PROVINCE

JULY 2024

Prepared for

WSP

by

Tony Barbour and Schalk van der Merwe

Tony Barbour
ENVIRONMENTAL CONSULTING

10 Firs Avenue, Claremont, 7708, South Africa
(Cell) 082 600 8266
(E-Mail) tony@tonybarbour.co.za.

EXECUTIVE SUMMARY

INTRODUCTION AND LOCATION

WSP Group Africa (Pty) Ltd (WSP) was appointed to manage the Basic Assessment (BA) for a 4km 132kV overhead powerline associated with the Igolide Wind Energy Facility (WEF). The project area is located northeast of Fochville, within the Merafong City Local Municipality (MCLM) in the Gauteng Province.

Tony Barbour Environmental Consulting was appointed to undertake a specialist Social Impact Assessment (SIA) as part of the BA process.

SUMMARY OF KEY FINDINGS

KEY FINDINGS

The key findings of the study are summarised under the following sections:

- Fit with policy and planning.
- Construction phase impacts.
- Operational phase impacts.
- Cumulative impacts.
- Decommissioning phase impacts.
- No-development option.

POLICY AND PLANNING ISSUES

The development of renewable energy and the associated energy infrastructure is strongly supported at a national, provincial, and local level. The development of and investment in renewable energy and associated energy distribution infrastructure is supported by the National Development Plan (NDP), New Growth Path Framework and National Infrastructure Plan, which all highlight the importance of energy security and investment in energy infrastructure. The development of the proposed power line is therefore supported by key policy and planning documents.

CONSTRUCTION PHASE

Potential positive impacts

- Creation of employment and business opportunities, and the opportunity for skills development and on-site training.

The construction phase will extend over a period of approximately 6 months and create in the region of 20 employment opportunities. The total wage bill will be in the region of R 1.8 million (2024 Rand values). Most of the employment opportunities are likely to benefit residents from the MCLM. Most of the beneficiaries are likely to be HD members of the community. This would represent a short term positive social benefit in an area with limited employment opportunities. A percentage of the wage bill will be spent in the local economy which will also create opportunities for local businesses in MCLM.

The capital expenditure associated with the construction of power line will be ~R18 million (2024 Rand values) and will create opportunities for local companies and local economy. The local service industry will also benefit from the provision of catering, cleaning, transport, and security, etc. associated with the construction workers on the site. However, given the relatively small scale of the development and short construction period the benefits will be limited.

Potential negative impacts

- Impacts associated with the presence of construction workers on local communities.
- Noise, dust, and safety impacts of construction related activities and vehicles.
- Risk of veld fires.
- Risks to landowners and land uses posed to activities by construction workers.

The findings of the SIA indicate that the significance of the potential negative impacts is likely to be negligible. With mitigation they are rated as **Low Negative**. The potential negative impacts associated with the proposed construction of the power line can therefore be effectively mitigated if the recommended mitigation measures are implemented. Table 1 summarises the significance of the impacts associated with the construction phase.

Table 1: Summary of social impacts during construction phase

Impact	Significance No Mitigation / Enhancement	Significance With Mitigation / Enhancement
Creation of employment and business opportunities	Low (Positive)	Moderate (Positive)
Presence of construction workers and potential impacts on family structures and social networks	Low (Negative)	Low (Negative)
Nuisance impacts, such as noise and dust associated with construction activities and vehicles	Low (Negative)	Low (Negative)
Risk of veld fires	Moderate Negative)	Low (Negative)
Safety risk, stock theft and damage to property infrastructure associated with presence of construction workers	Moderate Negative)	Low (Negative)

OPERATIONAL PHASE

The benefits associated with the Igolide WEF are dependent upon being able to connect to the national grid. The key social issues associated with the operational phase include:

Potential positive impacts

- Improve energy security and establishment of energy infrastructure.
- Creation of employment and local procurement opportunities.
- Generate income for landowners.

Potential negative impacts

- Visual impacts and associated impacts on sense of place.

- Impact on tourism facilities.
- Risks posed to activities by maintenance workers.

The findings of the SIA indicate that the significance of the potential negative impacts is likely to be **Low Negative** if the required mitigation measures are effectively implemented. The significance of the impacts associated with the operational phase are summarised in Table 2.

Table .2: Summary of social impacts during operational phase

Impact	Significance No Mitigation / Enhancement	Significance With Mitigation / Enhancement
Improve energy security and establishment of energy infrastructure	Moderate (Positive)	Moderate (Positive)
Creation of employment and business opportunities during maintenance	Low (Positive)	Moderate (Positive)
Generate income for landowners	Low (Positive)	Moderate (Positive)
Visual impact and impact on sense of place	Low (Negative)	Low (Negative)
Impact on tourism facilities	Low (Negative)	Low (Negative)
Safety risk and damage to infrastructure associated with presence of maintenance workers	Moderate (Negative)	Low (Negative)

CUMULATIVE IMPACTS[1]

Cumulative impact on sense of place

There are several existing power lines in the area. The potential for cumulative impacts associated with combined visibility (whether two or more power lines will be visible from one location) and sequential visibility (e.g., the effect of seeing two or more power lines along a single journey, e.g., road or walking trail) does therefore exist. However, the area's sense of place has been impacted by mining and existing transmission lines. The cumulative impact on the area's sense of place is therefore likely to be low.

NO-DEVELOPMENT OPTION

The No-Development option would represent a lost opportunity for South Africa to improve energy security and supplement its current energy needs with renewable energy. Given South Africa's current energy security challenges and its position as one of the highest per capita producers of carbon emissions in the world, this would represent a negative social cost.

[1] Note: The final grid route has not yet been determined. The cumulative assessment does not therefore consider the potential impact of the grid.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The energy security benefits associated with the proposed Igolide WEF are dependent upon it being able to connect to the national grid via the establishment of grid connection infrastructure. The construction and operational phase will also create employment and business opportunities which will benefit the MCLM. The findings of the SIA also indicate that the significance of the potential negative social impacts for both the construction and operational phase of the proposed 132 kV Igolide overhead power line and associated infrastructure are **Low Negative** with mitigation. The potential negative impacts can therefore be effectively mitigated if the recommended mitigation measures are implemented.

Statement and reasoned opinion

The establishment of the proposed 132 kV Igolide overhead power line and associated infrastructure is supported by the findings of the SIA.

TABLE OF CONTENTS

CONTENTS OF THE SPECIALIST REPORT – CHECKLIST

Regulation GNR 326 of 4 December 2014, as amended 7 April 2017, Appendix 6	**Section of Report**
(a) details of the specialist who prepared the report; and the expertise of that specialist to compile a specialist report including a *curriculum vitae*;	Section 1.5, Annexure C
(b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	Section 1.6, Annexure D
(c) an indication of the scope of, and the purpose for which, the report was prepared;	Section 1.1, Section 1.2
(cA) an indication of the quality and age of base data used for the specialist report;	Section 1.2, Section 3
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 4
(d) the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Annexure A
(e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 1.2, Annexure B
(f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 4
(g) an identification of any areas to be avoided, including buffers;	Section 4
(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;	Section 3
(i) a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 1.4,
(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, or activities;	Section 4
(k) any mitigation measures for inclusion in the EMPr;	Section 4
(l) any conditions for inclusion in the environmental authorisation;	Section 4
(m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	Section 4
(n) a reasoned opinion— i. as to whether the proposed activity, activities or portions thereof should be authorised; iA. Regarding the acceptability of the proposed activity or activities; and ii. if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr or Environmental Authorization, and where applicable, the closure plan;	Section 5.3
(o) a description of any consultation process that was undertaken during the course of preparing the specialist report	Annexure A
(p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	N/A
(q) any other information requested by the competent authority	N/A
Where a government notice gazetted by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	Comply with the Assessment Protocols that were published on 20 March 2020, in Government

	Gazette 43110, GN 320. This specifically includes Part A, which provides the Site Sensitivity Verification Requirements where a Specialist Assessment is required but no Specific Assessment Protocol has been prescribed. As at September 2020, there are no sensitivity layers on the Screening Tool for Socio-economic-features. Part A has therefore not been compiled for this assessment.

ACRONYMS

BESS	Battery Energy Storage System
DEA	Department of Environmental Affairs
DEA&DP	Department of Environmental Affairs and Development Planning
DM	District Municipality
HD	Historically Disadvantaged
EIA	Environmental Impact Assessment
IDP	Integrated Development Plan
IPP	Independent Power Producer
kV	Kilovolts
LED	Local Economic Development
LM	Local Municipality
MCLM	Merafong City Local Municipality
MW	Megawatt
SDF	Spatial Development Framework
SIA	Social Impact Assessment
WEF	Wind Energy Facility
WRDM	West Rand District Municipality.

SECTION 1: INTRODUCTION

1.1 INTRODUCTION

WSP Group Africa (Pty) Ltd (WSP) was appointed to manage the Basic Assessment (BA) for an approximately 4km 132kV overhead powerline associated with the Igolide Wind Energy Facility (WEF). The project area is located northeast of Fochville, within the Merafong City Local Municipality (MCLM) in the Gauteng Province (Figure 1.1).

Tony Barbour Environmental Consulting was appointed to undertake a specialist Social Impact Assessment (SIA) as part of the BA process.

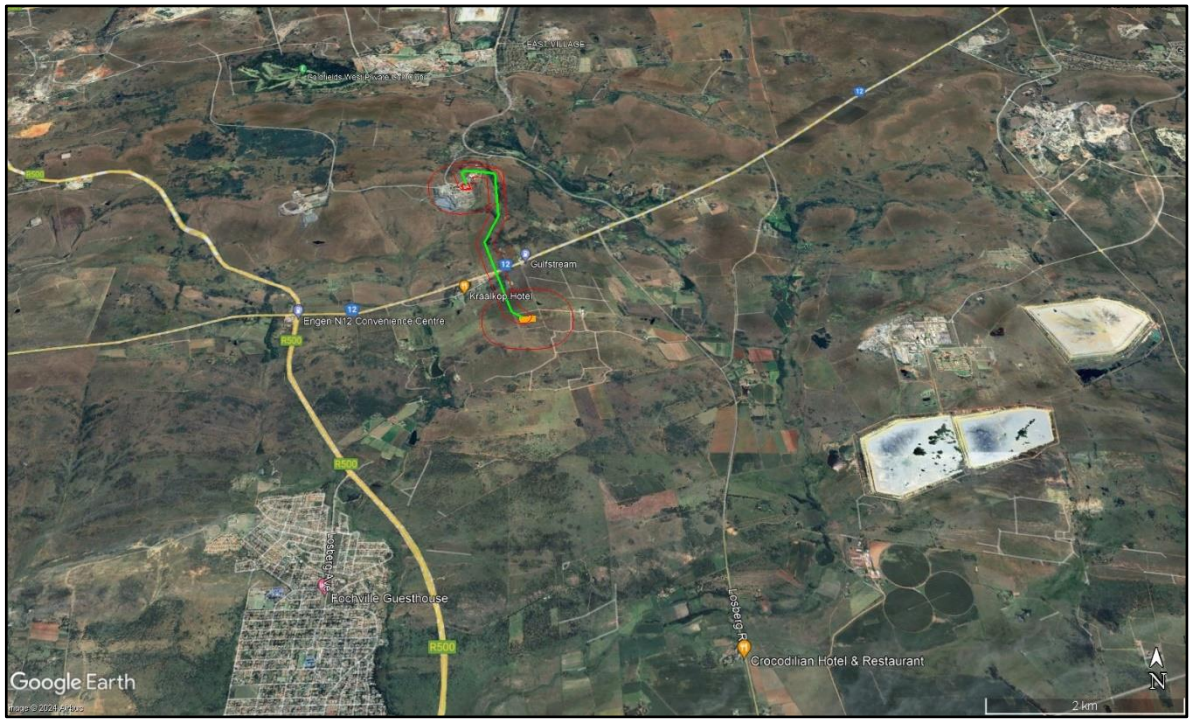


Figure 1.1: Location of Igolide transmission line (green line)

1.2 TERMS OF REFERENCE AND APPROACH

The approach to the SIA study is based on the Western Cape Department of Environmental Affairs and Development Planning Guidelines for Social Impact Assessment (February 2007). These guidelines are based on international best practice. The key activities in the SIA process embodied in the guidelines include:

- Describing and obtaining an understanding of the proposed intervention (type, scale, and location), the settlements, and communities likely to be affected by the proposed project.
- Collecting baseline data on the current social and economic environment.
- Identifying the key potential social issues associated with the proposed project. This requires a site visit to the area and consultation with affected individuals and communities. As part of the process a basic information document was prepared and

made available to key interested and affected parties. The aim of the document was to inform the affected parties of the nature and activities associated with the construction and operation of the proposed development to enable them to better understand and comment on the potential social issues and impacts.
- Assessing and documenting the significance of social impacts associated with the proposed intervention.
- Identifying alternatives and mitigation measures.

In this regard the study involved:

- Review of socio-economic data for the study area.
- Review of relevant planning and policy frameworks for the area.
- Review of information from similar studies, including the SIAs undertaken for other renewable energy projects.
- Site visit and interviews with key stakeholders.
- Identifying the key potential social issues associated with the proposed project.
- Assessing the significance of social impacts associated with the proposed project.
- Identification of enhancement and mitigation measures aimed at maximizing opportunities and avoiding and or reducing negative impacts.

Annexure A contains a list of the secondary information reviewed. Annexure B summarises the assessment methodology used to assign significance ratings to the assessment process.

1.3 PROJECT DESCRIPTION

The ENERTRAG South Africa (Pty) Ltd is proposing to develop a 132kV switching station, a 132kV single or double circuit powerline, and termination point upgrades (as may be necessary), including possible expansion, to allow for the proposed new 132kV powerline connection (hereafter the "Project"). The Project is intended to feed the electricity generated by the approved 100MW Igolide Wind Energy Facility (WEF) (DFFE reference number: 14/12/16/3/3/2/2385, EA date 31 January 2024) to the national energy grid, with the point of connection being the existing East Drie Five Substation. The 132kV power line extends over a distance of approximately 4km. The overhead power line will have a height of up to 40m. The entire extent of the Project is located within the Central Corridor of the Strategic Transmission Corridors. Table 1.1 provides an overview of the project.

Table 1.1: Details of Igolide grid connection

Facility Name:	Igolide WEF Electrical Grid Infrastructure
Applicant:	ENERTRAG South Africa (Pty) Ltd
Municipalities:	Merafong City Local Municipality in the Gauteng Province of South Africa
132kV powerline (single or double circuit):	• Single or double circuit 132kV between the proposed switching station and the existing East Drie Five Substation. The powerline design may include: ➢ Intermediate self-supporting monopole. ➢ Inline or angle-strain self-supporting monopole. ➢ Suspension self-supporting monopole. ➢ Triple pole structure. ➢ Steel lattice structure; or ➢ Similar powerline design at 132kV specification.

	• The above designs may require anchors with guy-wires or be anchorless. For up to 132kV structures, concrete foundation sizes may vary depending on design type up to 80m^2, with depths reaching up to 3.5m typically in a rectangular 'pad' shape. • A working area of approximately 100m x 100m is needed for each of the proposed structures to be constructed. • Gridline length: approximately 4km • Height of powerline: up to 40m • Width of gridline servitude: 32m A 250m wide corridor (125m on either side of the centre line) has been identified for the assessment and micro-siting of the powerline to avoid sensitivities and ensure technical feasibility.
Switching Station:	• Development footprint (permanent infrastructure area): approximately 2.5ha as the switching station will be located adjacent to the approved 33/132kV on-site IPP substation (DFFE reference number: 14/12/16/3/3/2/2385, EA date 31 January 2024) which was assessed as part of the Igolide WEF Environmental Authorisation process. • Capacity: 132kV • Standard substation electrical equipment, including, but not limited to, busbars, control building, telecommunication infrastructure, office area, operation and control room, workshop and storage area, feeder bays, stringer strain breams, insulators, arrestors, relays, capacitor banks, batteries, wave trappers, switchyard, metering and indication instruments, equipment for carrier current, surge protection and outgoing feeders, as may be required. • Associated infrastructure, including, but not limited to, lighting, fencing (~2m high), gating, parking area, and buildings required for operation (ablutions, office, workshop and control room, concrete batching plant (if required), waste storage/disposal and storerooms).
Termination point upgrades:	Upgrades to the existing East Drie Five Substation will also be required, including possible expansion within the yard, where required, with a footprint of up to 4ha. This includes the installation of additional feeder bays to accommodate the power being evacuated from the proposed Igolide WEF and transformer upgrades.
Access roads:	• During construction, a permanent access road along the length of the powerline corridor, between 4 – 6m wide will be established to allow for large crane movement. This track will then be utilised for maintenance during operation. • Permanent access roads to and within the substation, up to 8m wide, will be established.
Affected farm portion/s	• Portion 20 of Kraalkop 147 IQ • Portion 31 of Kraalkop 147 IQ • Portion 45 of Kraalkop 147 IQ • Porton 46 of Kraalkop 147 IQ • Portion 53 of Kraalskop 147 IQ • Portion 68 of Kraalkop 147 IQ • Portion 11 of Leeuwpoort 356 IQ • Portion 77 of Leeuwpoort 356 IQ

1.4 ASSUMPTIONS AND LIMITATIONS

1.4.1 Assumptions

Technical suitability
It is assumed that the development site represents a technically suitable site for the establishment of the proposed development.

Strategic importance of the project
The strategic importance of promoting renewable energy and the associated infrastructure is supported by national and provincial energy policies.

Fit with planning and policy requirements
Legislation and policies reflect societal norms and values. The legislative and policy context therefore plays an important role in identifying and assessing the potential social impacts associated with a proposed development. In this regard, a key component of the SIA process is to assess the proposed development in terms of its fit with key planning and policy documents. As such, if the findings of the study indicate that the proposed development in its current format does not conform to the spatial principles and guidelines contained in the relevant legislation and planning documents, and there are no significant or unique opportunities created by the development, the development cannot be supported.

1.4.2 Limitations

Site visit and interviews
The site visit to the area was undertaken in 2023 as part of the SIA for the Igolide WEF. Interviews for the grid connection were undertaken telephonically. Based on the authors experience this does not have a material bearing on the findings of the SIA.

1.5 SPECIALIST DETAILS

Tony Barbour, the lead author of this report, is an independent specialist with 30 years' experience in the field of environmental management. In terms of SIA experience Tony Barbour has undertaken in the region of 300 SIAs and is the author of the Guidelines for Social Impact Assessments for EIA's adopted by the Department of Environmental Affairs and Development Planning (DEA&DP) in the Western Cape in 2007. Annexure C contains a copy of Tony Barbour's CV.

Schalk van der Merwe, the co-author of this report, has an MPhil in Environmental Management from the University of Cape Town and has worked closely with Tony Barbour over the last eighteen years.

1.6 DECLARATION OF INDEPENDENCE

This confirms that Tony Barbour and Schalk van der Merwe, the specialist consultants responsible for undertaking the study and preparing the SIA Report, are independent and do not have any vested or financial interests in the proposed power line being either approved or rejected. Annexure D contains a signed declaration of independence.

1.7 REPORT STUCTURE

The report is divided into five sections, namely:

- Section 1: Introduction.
- Section 2: Summary of key policy and planning documents.
- Section 3: Overview of the study area.
- Section 4: Identification and assessment of key social issues.
- Section 5: Summary of key findings and recommendations.

SECTION 2: POLICY AND PLANNING ENVIRONMENT

2.1 INTRODUCTION

Legislation and policy embody and reflect key societal norms, values, and developmental goals. The legislative and policy context therefore plays an important role in identifying, assessing, and evaluating the significance of potential social impacts associated with any given proposed development. An assessment of the "policy and planning fit[2]" of the proposed development therefore constitutes a key aspect of the Social Impact Assessment (SIA). In this regard, assessment of "planning fit" conforms to international best practice for conducting SIAs. Furthermore, it also constitutes a key reporting requirement in terms of the applicable Western Cape Department of Environmental Affairs and Development Planning's *Guidelines for Social Impact Assessment* (2007).

The proposed grid connection infrastructure is linked to the proposed Igolide WEF. The review therefore includes reference to key policy documents that have a bearing on renewable energy. At the local level the focus of the review has been on Local Municipal level policy and planning documents.

- National Development Plan (2011).
- New Growth Path Framework (2010).
- National Infrastructure Plan (2012).
- Gauteng Provincial Employment, Growth and Development Strategy.
- Gauteng Provincial Spatial Development Framework 2030.
- Gauteng Integrated Energy Strategy (2012).
- Growing Gauteng Together 2030.
- Merafong City Local Municipality Integrated Development Plan (2022-23).
- Merafong City Local Municipality Spatial Development Framework (2019).

The section also provides a review of the renewable energy sector in South Africa.

2.2 NATIONAL POLICY ENVIRONMENT

2.2.1 National Development Plan

The National Development Plan (NDP) aims to eliminate poverty and reduce inequality by 2030. The NDP identifies a number of enabling milestones. Of relevance to the proposed development the NDP refers to the need to produce sufficient energy to support industry at competitive prices and ensure access for poor households, while reducing carbon emissions per unit of power by about one-third. In this regard the infrastructure is not just essential for faster economic growth and higher employment. It also promotes inclusive growth, providing citizens with the means to improve their own lives and boost their incomes. Infrastructure is essential to development.

Chapter 3, Economy, and Employment, identifies some of the structural challenges specific to South Africa, including an energy constraint that will act as a cap on growth and on options for industrialisation. The NDP notes that from an environmental

[2] "Planning fit" can simply be described as the extent to which any relevant development satisfies the core criteria of appropriateness, need, and desirability, as defined or circumscribed by the relevant applicable legislation and policy documents at a given time.

perspective South Africa faces several related challenges. The reduction of greenhouse gas emissions and shift to a green, low-carbon economy, is one of these challenges.

In terms of implementation the NDP identifies three phases. The first two are of specific relevance to the proposed project. The first phase (2012–2017) notes that ensuring the supply of energy and water is reliable and sufficient for a growing economy. The second phase (2018–2023) involves building on the first phase to lay the foundations for more intensive improvements in productivity. The provision of affordable and reliable energy is a key requirement for this to take place.

Chapter 4, Economic infrastructure, notes that economic infrastructure provides the foundation for social and economic development. In this regard South Africa must invest in a strong network of economic infrastructure designed to support the country's medium- and long-term economic and social objectives. The plan envisages that, by 2030, South Africa will have an energy sector that promotes:

- Economic growth and development through adequate investment in energy infrastructure. The sector should provide reliable and efficient energy service at competitive rates, while supporting economic growth through job creation.
- Environmental sustainability through efforts to reduce pollution and mitigate the effects of climate change. More specifically, South Africa should have adequate supply security in electricity and in liquid fuels, such that economic activity, transport, and welfare are not disrupted.

2.2.2 The New Growth Path Framework

The government released the New Economic Growth Path Framework on 23 November 2010. The aim of the framework is to enhance growth, employment creation and equity. The policy's principal target is to create five million jobs over the next 10 years and reflects the government's commitment to prioritising employment creation in all economic policies. The framework identifies strategies that will enable South Africa to grow in a more equitable and inclusive manner while attaining South Africa's developmental agenda. Central to the New Growth Path is a massive investment in infrastructure as a critical driver of jobs across the economy. In this regard the framework identifies investments in five key areas namely: ***energy***, transport, communication, water, and housing.

2.2.3 National Infrastructure Plan

Government adopted a National Infrastructure Plan (NIP) in 2012. The aim of the plan is to transform the economic landscape while simultaneously creating significant numbers of new jobs and strengthening the delivery of basic services. The aim of the NIP is to support investments, improve access by South Africans to healthcare facilities, schools, water, sanitation, housing and electrification. The plan also notes that investment in the construction of ports, roads, railway systems, ***electricity plants***, hospitals, schools, and dams will contribute to improved economic growth.

As part of the National Infrastructure Plan, Cabinet established the Presidential Infrastructure Coordinating Committee (PICC). The Committee identified and developed 18 strategic integrated projects (SIPS). The SIPs cover social and economic infrastructure across all nine provinces (with an emphasis on lagging regions) and included three energy SIPs, namely SIP 8, 9 and 10.

- SIP 8: Green energy in support of the South African economy.

- SIP 9: Electricity generation to support socio-economic development.
- SIP 10: Electricity transmission and distribution for all.

The NIP 2050 was gazetted for public comment on 10 August 2021[3]. The first phase of the NIP 2050 focuses on four critical network sectors that provide a platform, namely, energy, freight transport, water, and digital infrastructure. In line with the NDP, the vision for the energy sector is to promote:

- Economic growth and development through adequate investment in energy infrastructure" (generation, transmission, and distribution) and reliable and efficient energy service at competitive rates, while supporting economic growth through job creation by stimulating supply chains.
- Social equity through expanded access to energy at affordable tariffs and through targeted, sustainable subsidies for needy households.
- Environmental sustainability through efforts to reduce pollution, reduce water usage and mitigate the effects of climate change.

The NIP 2050 notes that by 2030, the NDP set a target that more than 90% of the population should enjoy access to grid connected or off-grid electricity by 2030. To realise this vision, South Africa's energy system will be supported by effective policies, institutions, governance systems, regulation and, where appropriate, competitive markets. In terms of energy mix, NIP 2050 notes that coal will contribute significantly less to primary-energy needs in the future, while gas will have an important enabling role, energy supply will be ***increasingly dominated by renewable energy resources– especially wind and solar which are least cost and where South Africa has a comparative advantage.***

NIP 2050 also notes that South Africa is signatory of the Paris Agreement which aims to achieve Net Zero greenhouse gas emissions by 2050. To achieve this will require a shift to a least cost energy path that is increasingly reliant on renewables.

2.3 PROVINCIAL AND LOCAL LEVEL POLICY AND PLANNING

2.3.1 Gauteng Provincial Employment, Growth and Development Strategy

The Gauteng Provincial Employment, Growth and Development Strategy (GEGDS) identifies the need for creating accessible and decent work within a growing, sustainable, and inclusive economy as a priority for the province. The GEGDS aims to address the deep structural weaknesses within the economy that has yielded persistent high unemployment and excluded marginalized populations despite the economic growth of the region.

Key aims of GEGDS:

- Provide a framework within which relevant government departments can develop and/or refine their strategic policy interventions or drivers, while creating decent work and building a growing, inclusive economy.
- Identify effective interventions for provincial government to mitigate the impact of economic crises while initiating programmes that can maximise (decent) employment creation in the medium term.
- Address inequality through the investment in people and the progressive realisation of decent jobs.

[3] Gazette No. 44951

- Support social cohesion through interventions that directly contribute towards employment creation and a healthy, well-nourished, and safe labour force.
- Highlight the need for effective monitoring, reviewing, and evaluating of the various interventions or drivers.
- To act as the framework that leads to the Gauteng Growth Path, which is the living or real implementation of the GEGDS.

To achieve this GEGDS proposes necessary and profound structural changes to the Gauteng economy that are based on a rapid shift to an endogenous economy rooted in three key factors:

- Innovation.
- Green Growth.
- Inclusivity.

There are three integral components that make up the strategy, namely: the seven foundational provincial priorities, the five strategic pillars, and seven cross-cutting drivers. The foundational provincial priorities of relevance include:

- Creating Decent Work and Building a Sustainable and Inclusive Economy.
- Building Cohesive and Sustainable Communities including Spatial Development.

This GEGDS outlines the strategic interventions by which Gauteng will work to make this innovating, green and inclusive economy a reality. These interventions are organised into five strategic pillars. The strategic pillars of relevance include:

- Transforming the provincial economy through improved efficiency.
- Sustainable employment creation.
- Sustainable communities and social cohesion.

Each pillar contains several government interventions, which enable them to implement this strategy. These are called drivers. Cross-cutting drivers of relevance include:

- Green Economy and Sustainable Energy Usage.
- Innovation and the Knowledge Economy.
- Infrastructure – Strategic, Socio-economic and Bulk.
- Green Jobs.
- Spatial Planning.

2.3.2 Gauteng Provincial Spatial Development Framework 2030

The Gauteng Provincial Spatial Development Framework (GSDF) 2030 aspires to establish a compact urban form that has a balanced, polycentric spatial network, with strong and resilient nodes enabling mutually beneficial exchanges of goods and services, and movement of people as well as the protection of green spaces and sustainable energy use. To support this vision, four spatial development strategies are to be followed:

- Capitalising on proximity.
- Managing new settlement development.
- Building an economic network.
- Creating a viable and productive hinterland.

The effective provision and maintenance of bulk infrastructure, including energy production, is prioritised within the capitalising on proximity strategy. Ten high-priority

provincial spatial development proposals are outlined. While none focus specifically on energy production, the following are important in terms of conservation and bulk infrastructure development:

- Municipal urban growth management.
- Strengthening and enhancing agricultural production and agro-processing.
- Actively pursuing environmental management and eco-system protection.
- Boosting and optimising provincial tourism opportunities.

The GSDF notes that the West Rand District Municipality (WRDM) is currently operating at near capacity in terms of energy production and the lack of stable generation capacity from current providers act as a major constraint to economic development and investor confidence. The GSDF also notes that Merafong's electricity network was not designed to supply the developments and extensions that are currently underway in the district.

2.2.3 Gauteng Integrated Energy Strategy (2012)

The aim of the Gauteng Integrated Energy Strategy (GIES) is to direct the energy supply and consumption of the Gauteng province over the next five to forty-five years by integrating and supporting sustainable energy and climate change initiatives, both locally and internationally. The key goals of this strategy include:

- Facilitating the development and growth of renewable and alternative energy options.
- Supporting the move towards a low carbon economy.
- Prioritizing energy security and access to safe, clean, and affordable energy.
- Developing and growing the alternative and energy efficiency industry as a critical aspect of Gauteng's economy.

The relative policy implications include:

- Shifting to a low carbon economy.
- Maximizing the use of local energy resources.
- Development of the renewable energy industry as an employment creation opportunity.

The GIES hopes to achieve a low carbon economy, Gauteng as a hub of innovation, focused on clean energy technology, decentralised energy generation-micro generation, as well as clean and renewable energy contributing 50% of the total energy mix of the province.

2.2.4 Growing Gauteng Together 2030

Growing Gauteng Together 2030 (GGT2030) is a plan of action realised by the Gauteng government to drive the province towards a more sustainable and inclusive future. The plan includes seven priorities that are to be executed to achieve this vision. The relevant priorities include:

- The Economy, Jobs, and Infrastructure.
- Integrated Human Settlements and Land Release.
- Safety, Social Cohesion and Food Security.
- Sustainable Development for Future Generations.

This vision will be implemented along five developmental corridors of Gauteng. The Western Development Corridor includes WRDM, and the focus is around diversifying the

district economy to include tourism, agriculture, and agro-processing, and renewable energy projects.

2.2.5 Merafong City Local Municipality Integrated Development Plan (2020)

The vision for the Merafong City Local Municipality (MCLM) Integrated Development Plan (IDP) is "A prosperous, Sustainable and Community-oriented City". The mission statement that underpins the vision is "To provide quality services to our community through accountable governance". The Key Performance Areas (KPA) adopted by the municipality to realise this vision are:

- KPA 1: Basic Service Delivery
- KPA 2: To Promote Local Economic Development
- KPA 3: To Promote Municipal Transformation & Organisational Development
- KPA 4: To ensure Municipal Financial Viability & Management
- KPA 5: To ensure Good Governance and Public Participation
- KPA 6: Spatial Development Framework

Section 5.2, of the IDP lists the response to the MECs comments on the 2021/2026 (2021-2022) IDP. Under the section of Service Delivery, the IDP notes that the Municipality must consider renewable energy initiatives which can be considered for low-income housing to reduce electricity demand on the grid and support a low carbon and green economy such as solar geysers and PV panels on the roofs. However, the section goes on to note that the IDP does not contain information on renewable energy projects.

In terms of local economic development, the IDP highlights the lack of diversity in the economy and the reliance on agriculture and mining. However, the closure of mines has reduced the role played by mining. There is therefore a need to diversify the local economy and the provision of a reliable supply of energy and the associated infrastructure is key to diversifying the economy.

2.2.6 Merafong City Local Municipality Spatial Development Framework (2020)

Merafong Spatial Development Framework (MSDF), forms part of a hierarchy of plans that consolidate into the IDP. It concentrates on the spatial aspects of development planning and identifies the opportunities and constraints associated with the district. The Merafong City's SDF proposes the following structuring tools:

- Improve urban efficiency and rectify Apartheid spatial disparities through realigning the urban structure of Merafong settlements into three distinct urban areas.
- Improve urban and rural liveability where basic needs are met, the cost of living is bearable, amenities and employment are accessible, and urban space is aesthetically pleasing and healthy.
- Facilitate sustainable economic growth and diversification, through identified strategic nodes, which include a bio-energy eco-industrial park.
- Protect natural and agricultural resources to ensure a sustainable coexistence between urban, mining, agricultural and ecological land uses.

Opportunities in the MSDF of relevance to the project include a Bioenergy Agro-Industrial Park and the Merafong Solar Farm Cluster Concept. Additionally, the adaptation of unsustainable, unused, or old mines and mine dumps for reuse or rehabilitation also presents an opportunity. The mines Driefontein North and Kusasalethu/Elandsrand were identified as particularly promising for the establishment of solar farms or other renewable energy sources.

SECTION 3: OVERVIEW OF STUDY AREA

3.1 INTRODUCTION

Section 3 provides a baseline description of the study area with regard to:

- The administrative context.
- Provincial context.
- Overview of district and local municipalities.
- Site and the surrounding land uses.

3.2 ADMINISTRATIVE CONTEXT

The study area is located within the Merafong City Local Municipality (MCLM), which falls within the West Rand District Municipality (WRDM) in the Gauteng Province. The WRDM is made up of three category B local municipalities which include Merafong, Mogale, and Rand West municipalities. Randfontein is the administrative seat of the WRDM. The administrative seat of the MCLM is Carletonville.

Figure 3.1: Location of the Merafong City Local Municipality within Gauteng Province

3.3 PROVINCIAL CONTEXT

Economic sectors
Although the smallest province in South Africa, Gauteng contributes over 30% of the country's GDP, and around 10% of the total GDP of sub-Saharan Africa. The financial, real estate and business services sector is the largest contributor to the provincial GDP, contributing approximately 22.8% in 2013. This highlights the province's importance as the financial seat of South Africa. Gauteng is home to over 100 foreign and local banks' head offices, stockbrokers, and insurance giants.

The manufacturing and wholesale sectors are also key economic sectors, contributing 16.5% and 12.6% to the provinces GDP respectively. It is estimated that around 40% of South Africa's manufacturing and finance activity is done in Gauteng, as well as around 30% of the country's wholesale, retail, motor trade and accommodation.

Employment
The first quarter labour market snapshot for 2022 showed that in Gauteng employment has increased across six of the 10 sectors with key drivers including the Manufacturing, Community Services, and Trade Sectors. Employment in the mining sector has also increased to above pre-COVID levels in this time. In contrast, employment in the Private Households as well as Construction and Transport sectors has decreased in recent years, which mirrors national trends.

3.4 DEMOGRAPHIC OVERVIEW

Population
Based on Census 2022 Gauteng had a population of 15 099 422. Of the five municipalities, Johannesburg MM has the largest population (32%), followed by Ekurhuleni MM and Tshwane (~27%). The population of the WRDM was 998 466 which made up 6.6% of the total population. The population of the MCLM was 225 476 in 2022, ~ 23% of the population of the WRDM. In terms of age structure 24.2% were under the age of 15, 70.9% fell within the economically active age group of 15-64 and the remaining 4.8% were older than 65. Based on this data the dependency ratio was 41, which is higher than the ratio in 2011, namely 37.9%. A higher dependency ratio implies more people are dependent on a smaller economically active population, which in turn reduces the number of people that can afford rates and taxes.

Most of the population were Black African (84%), followed by Whites (15%) and Coloureds (1.2%). Setswana (25%), followed by IsiXhosa (23%) and Sesotho (19%) were the main languages spoken in the MCLM.

Based on the information from the 2022 Census there were a total of 77 599 households in the MCLM, with an average household size of 2.9 persons. Most of the households reside in formal houses (91.6). This figure is significantly higher than the figure from the 2016 Community Household Survey of 81.3%. Based on the information from the 2016 Community Household Survey 29.2% of the households in the MCLM were headed by females. The figure for MCLM was lower than the District and Provincial figures of 31.7% and 35.9% respectively.

Household income[4]
Based on the data from the 2011 Census, 16% of the population of the MCLM had no formal income, 4% earned less than R 4 800, 5.9% earned between R 5 000 and R 10

[4] No 2022 Census data on household income was available at the time of preparing the report.

000 per annum, 11.1% between R 10 000 and R 20 000 per annum, and 14.9% between R 20 000 and 40 000 per annum. This indicates that almost half of the population earns less than R 40 000 per annum. Around 26.4% of the population earns between R 40 000 and R 75 000, which represents the largest income bracket for the region. Just under 20% of the population earns between R75 000 and R 1 200 000.

The poverty gap indicator produced by the World Bank Development Research Group measures poverty using information from household per capita income/consumption. This indicator illustrates the average shortfall of the total population from the poverty line. This measurement is used to reflect the intensity of poverty, which is based on living on less than R3 200 per month for an average sized household (~ R40 000 per annum). Based on this measure, in the region of 43% of the households in the MCLM live close to or below the poverty line. This figure is lower than the provincial level of 53.8%.

The low-income levels are a major concern given that an increasing number of individuals and households are likely to be dependent on social grants. The low-income levels also result in reduced spending in the local economy and less tax and rates revenue for the MCLM. This in turn impacts on the ability of the MCLM to maintain and provide services.

Household income levels are likely to have been impacted by the COVID-19 pandemic. The number of households in the MCLM that live close to or below the poverty line is likely to have increased over the last 18 months. This, coupled with the high dependency ratio, is a major cause of concern for the area.

Employment[5]

The official unemployment figure in 2011 for the MCLM was 17.4%. The figures also indicate that a large portion of the population are not economically active, namely 32.7%. These figures are similar to the official unemployment rate for the Gauteng Province (18.1%) and West Rand District (17.8%). The lower unemployment rate seen in the MCLM has been linked to both job opportunities in mining related activities as well as high municipality out-migration rates. The MCLM IDP notes that this migration was due to the low quality of life and low economic growth in the region. This means that individuals who are unable to find work within the MCLM tend to migrate to other parts of the country rather than remain within the district.

Unemployment Rate in South Africa averaged 26.32% from 2000 until 2021, reaching an all-time high of 34.90 % in the third quarter of 2021 (StatsSA). Even more concerning, the Youth Unemployment Rate in South Africa averaged 54.21% from 2013 until 2021, reaching an all-time high of 64.40 % in the second quarter of 2021. The current rates in the MCLM are therefore likely to be significantly higher than the 2011 rates. These rates will also have been exacerbated by the impact of COVID-19 pandemic.

Education

Based on Community Household Survey of 2016, 4.2% of persons 20 years and older had no education, while 31.3% had a matric and 5.7% had a higher level of education. MUNICIPAL SERVICES

Electricity

Based on the 2022 Census, 98.1% of households in the MCLM had access to electricity and used it for lighting.

[5] No 2022 Census data on unemployment was available at the time of preparing the report.

Access to water
Based on the 2022 Census, 81.9% of households had piped water inside their dwelling.

Sanitation
Based on the 2022 Census, 94.1% of households have flush toilets connected to sewerage systems.

Refuse collection
Based on the 2022 Census, 81.4% of households have their refuse collected on a weekly basis.

3.5 HEALTH AND COMMUNITY FACILITIES

The WRDM has 66 health care facilities, with nine of them located in MCLM. In the WRDM, 13 of the 45 clinics are located in Merafong, along with one of two district hospitals, and one of three Community Health Care Facilities. The regional hospital of the district is located in Mogale City. In terms of disability prevalence within the district, persons with disability made up 8% of the population, which was higher than the provincial prevalence rate of 6.7%.

3.6 ECONOMIC OVERVIEW

Mining
Despite mining sector contributing only 3.3% of Gauteng's GDP, mining sits at the core of the WRDM and contributes over 50% of Gross Value Add. This is prevalent in MCLM, as not only does one in four people in the region rely on mining for employment, but mining sector also contributes to 29.1% GDP locally. Gold and uranium are the primary materials mined in the region.

Manufacturing
Around 40% of South Africa's manufacturing is done in Gauteng, and the manufacturing sector contributes over 16% to the overall GDP of the province. Locally, despite sectoral employment only contributing 7.2% the MCLM manufacturing sector has grown significantly since 2011 and contributed 20.8% to local GDP in 2016.

Finance, Real Estate, and Business Services
The finance and business sector is growing steadily and contributed 13.8% to MCLM GDP in 2016. This has resulted in the decline in the number of people employed in the mining sector since 2011 being offset by the growth in employment in this sector as well as the trade sector during this time.

Renewable energy
The Merafong Growth and Development Strategy offers an outline for the future development of the area, and both the Green Economy and Industrial Beneficiation have been identified as significant drivers to revitalise the economy and mining towns of West Rand. The Merafong Solar Farm Cluster Concept and Bio-energy farm proposes a Solar Farm Cluster and Bio- energy farm in Merafong City, in order to develop a renewable energy sector and reindustrialise and create opportunities in local downstream sectors like manufacturing industries and reduce electricity costs and carbon footprint in both private and public sectors.

3.7 OVERVIEW OF STUDY AREA

3.7.1 Introduction

The proposed Igolide WEF transmission (Tx) line is located 3.5 km north-east of the town of Fochville in the Merafong City Local Municipality (MCLM) in the south-western portion of Gauteng Province. MCLM is one of three LMs which constitute the West Rand District Municipality (DM). The large town of Carltonville, located approximately 10 km north-west of the site, is the administrative seat of the MCLM, and the largest settlement in the LM. Several small mining settlements are scattered across the LM. The large town of Randfontein, the administrative seat of the West Rand DM, is located approximately 30 km north-east of the site.

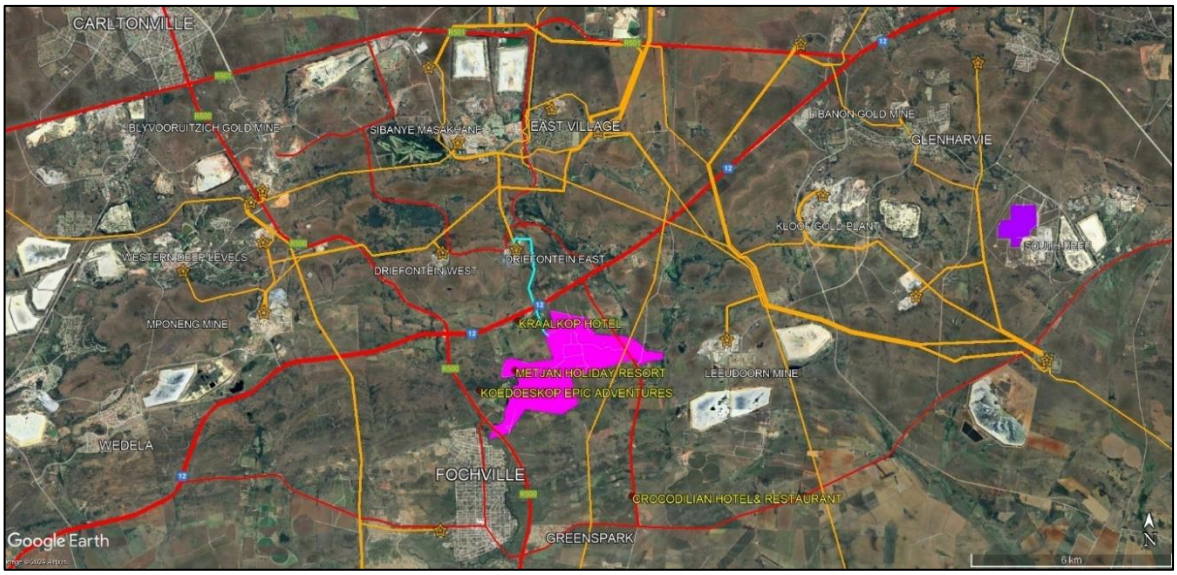


Figure 3.2. Proposed Igolide transmission line (blue line) in relation to Igolide WEF site (pink fill) local settlements, mines, key roads (red lines), existing Eskom lines (orange lines), and operational solar PV SEF at South Deep mine (purple fill). The prominent white objects are associated with historic and ongoing mining operations.

The key roads in the broader study area are the roughly west-east aligned N12 (Potchefstroom-Soweto) which would be traversed by the proposed line, the north-south aligned R500 (Carltonville-Parys, via Fochville) ~3 km to the west of the site, and the east-west aligned R501 (Carltonville-N7) ~6 km to the north of the site (Photograph 3.1). Sibanye Driefontein East mine is accessed via a road ('Sibanye access road') which links the N1 (from 2.1 km east of the proposed N12 line crossing) to the R501. The two northernmost study properties (Leeuwpoort 356/11 and 356/77) are accessed off the 'Sibanye access road'. The other study properties are accessed off the N1, either directly, or via a short service road directly to the south of the N1 (small node around Kraalkop Hotel).

Photograph 3.1: View towards Fochville from R 500

The key land uses in the broader study area are mining and agriculture. The broader study area forms part of Far West Witwatersrand gold fields, of which Carltonville is the premier mining centre. It forms part of historically the most productive gold fields in the world. The landscape context is dominated by historic and ongoing mining activities. The world's deepest mine, Mponeng gold mine (~4 km) is located approximately 7 km west of the proposed line. The proposed line would feed into an existing substation at Sibanye's Driefontein East mine. Driefontein West mine is located ~2.5 km west of the proposed line.

The study area is located in the western Highveld. The area around Fochville is mainly comprised of grassveld, but also includes mountain bushveld. Livestock farming predominates in the immediate study area. Cropping activities are concentrated in the vicinity of natural watercourses such as the Kraalkopspruit and Loopspruit. Fodder and cash crops such as maize and soy are grown, mainly under irrigation. The study area is considered good cattle country. Small stock is also kept. Veld carrying capacities are high, 6 ha per head of cattle[6]. Game is kept on several properties in the study area, but commercial hunting appears to be restricted to Metjan on the Igolide WEF site (see below). The veld is very susceptible to veld fires, especially in winter. The grazing resource may take more than one growing season to recover to full productivity. The study area rural settlement pattern is concentrated along public and mining roads (N12, the R500, Sibanye access road, Losberg Road), and the courses of the Kraalkopspruit and Loopspruit. A small loose mixed node is located along the short service road south of the N12 immediately to the west of the proposed line. The node includes a construction company (Lomo), the Kraalkop Hotel, Kraalkop Diesel Depot& Stop and a few dwellings.

[6] https://gis.elsenburg.com/apps/cfm/#

A butchery (Lethabong Inn) and fuel station (Konigs Garage) are located along the N12 ~360 m east of the proposed line crossing (Photograph 3.2). Tourism facilities in the study area mainly cater to local and regional (Rand) patrons and passing traffic. As indicated, the broader landscape context is dominated by historic and ongoing mining. It is therefore less sensitive to visual and sense of place impacts. No protected natural areas are located in significant proximity to the site. Facilities in significant proximity (2 km) of the proposed line are Metjan Holiday Resort, and the Kraalkop Hotel (Photograph 3.3).

Photograph 3.2: Kraalkop Petrol station on N12

Photograph 3.3: View looking south from N12 towards site with lodge in middle ground

Given the widespread presence of large mines, there are numerous Eskom lines in several corridors in the broader study area, but especially affecting the area to the north of the N12 (Photograph 3.4). Leeuwpoort 356/11 and 356/77 are currently affected by 2 x 132 kV lines feeding onto Driefontein East substation from the north. None of the other study properties are affected by existing lines. The nearest existing N12 line crossing is located 4.7 km east of the proposed Igolide line crossing. No renewable energy facilities are currently located in the immediate study area – the nearest is a PV plant at South Deep mine ~13 km east of the proposed line.

Photograph 3.4: Eskom power lines in the general study area

3.7.2 Affected properties

The proposed Igolide WEF 132 kV line directly affects 7 properties (N12 road parcel excluded), namely (south to north) Kraalkop 147/20, 147/45, 147/31, 147/68, 147/46, Leeuwpoort 356/77 and 357/11 (Figure 3.3). The switching substation is proposed on 147/20. The power would be fed into the existing substation at Driefontein East mine on 356/77 from the north. Assessment buffers of 500 m are associated with the substations and 250 m width corridor (125 lateral from midline). Nine additional properties are affected by the buffers, namely Kraalkop 147/7/RE, Leeuwpoort 356/8, 356/65, 356/66 and Kraalkop 147/24/RE south of the N12, and Kraalkop 147/65, Leeuwpoort 356/48, 356/45 and 356/15 to the north.

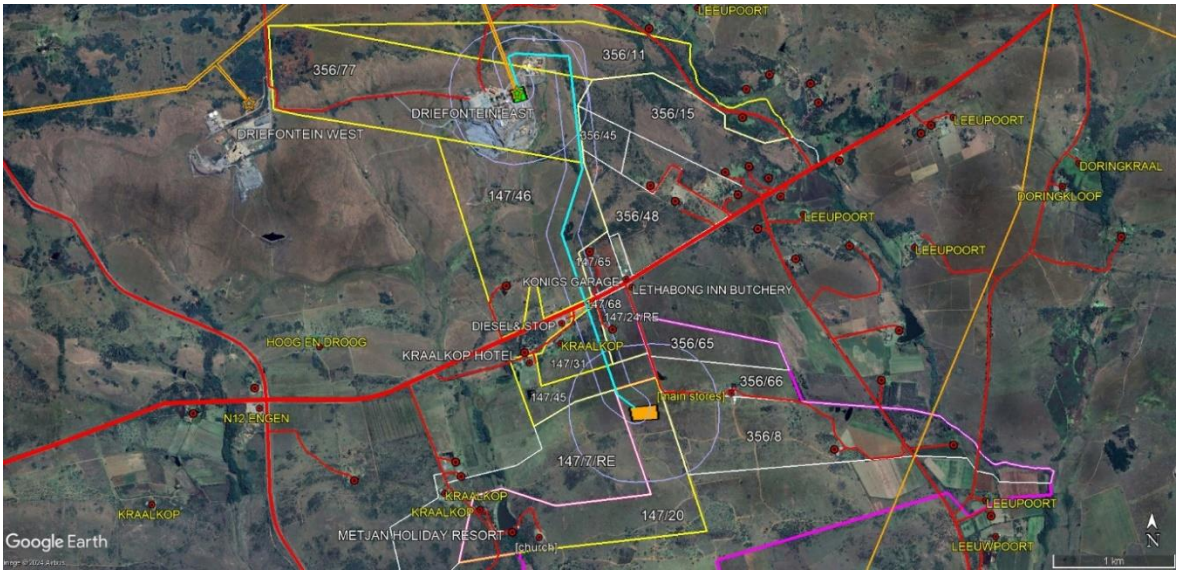


Figure 3.3. Igolide Tx line (light blue line), switching substation (orange fill), Driefontein East substation (green fill) and buffers (grey lines) in relation to Igolide WEF site (pink outline), directly affected properties (yellow outlines), properties affected by buffer only (white outlines), residential and other receptors, key roads (red) and existing Eskom lines (orange)

Kraalkop 147/20 (substation site), Leeuwpoort 356/8, 356/66 and 356/65 form part of Metjan Estate on which the Igolide WEF is proposed (Table 3.1). The property is used for farming, commercial hunting, tourism, and residential purposes. Commercial hunting (only May-August) accounts for 56-70% of income. Metjan also processes and sells meat at Lethabong Inn butchery along the N12. Metjan Resort offers self-catering chalets (20 guests) at a dam. Other facilities include a pool and private church. The Resort is popular with local and regional anglers (dam), and for 'break-aways.' The dwellings and chalets are in a valley and are screened from the project.

Table 3.1: Overview of properties affected by proposed infrastructure and buffers (south to north)

PROPERTY[7]	LAND USE	KEY RECEPTORS	COMMENT
Kraalkop 147/20	Residential; Metjan Resort& hunting estate; Extensive grazing	Holiday Resort; Hunting area; Farmstead; Private church	Proposed switching station 2.5 ha; Proposed line segment: 230 m; Part of Igolide WEF site
Leeuwpoort 356/8		Stores	Substation buffer only
Leeuwpoort 356/66		Main stores	Substation buffer only
Leeuwpoort 356/65		n.a.	Substation buffer only
Kraalkop 147/7/RE	Residential; Grazing	Farmstead	Line& substation buffers only Line buffer segment 300 m
Kraalkop 147/45	Residential; Business; Grazing	Built complex	Proposed line distance: 200 m; Lomo Labor Construction; MSP (water pumps supplier)

[7] Shading indicates directly affected properties.

Kraalkop 147/31	Residential	Farmstead	Proposed line distance: 480 m Farmstead leased out
Kraalkop 147/24/RE	Residential; Grazing (potential)	Farmstead	Line& substation buffers only Line buffer segment 540 m
Kraalkop 147/68	Vacant	n.a.	Proposed line distance: 40 m
N12			
Kraalkop 147/65	Residential; Small orchard	Farmstead	Line buffer only – segment: 380 m
Kraalkop 147/46/RE	Driefontein East mine (small portion); Residential; Extensive grazing	Farmstead	Proposed line distance: 1.2 km Farmstead located near the N12
Leeuwpoort 356/48	Residential; Grazing	Farmstead	Line buffer only – segment: 240 m
Leeuwpoort 356/77	Driefontein East mine East 5 shaft complex	n.a.	Proposed line distance: 910 m; Driefontein East substation; Existing 2 x 132 kV lines
Leeuwpoort 356/45	Residential; Grazing	n.a.	Line& substation buffers; Line buffer segment 380 m
Leeuwpoort 356/15	Grazing	n.a.	Line& substation buffers Line buffer segment 200 m
Leeuwpoort 356/11	Driefontein East mine reservoirs; Residential; Grazing	Farmstead	Proposed line distance: 740 m; Existing 2 x 132 kV lines;

Kraalkop 147/45, 147/31, 147/24/RE (south) and 147/65 (north) bordering onto the N12 and N12 service road are largely used for rural-residential purposes. Grazing is associated with 147/7/RE and 147/45, and a small orchard with 147/65. The offices of a construction company (Lomo Labour) and a water pump supplier (MSP) are located on 147/45 along the service road. Plans to develop a wedding venue between the proposed Tx line and the property's eastern boundary have been shelved (Vierra, pers. comm). Kraalkop 147/68 is a small parcel of vacant land at the northern junction of the N12 and service road next to the Diesel Depot and Truck Stop.

North of the N1, Kraalkop 147/46 and Leeuwpoort 356/77 form part of the premises of Sibanye's Driefontein East mine. The mine (shaft 5) complex occupies most the eastern portion of 356/77, extending slightly into the northern portion of 147/46. The balance of the Sibanye properties consists of veld, likely leased out for grazing. A farmstead is located near the N12 in the south-western corner of 147/46. The balance of directly affected properties (356/11) and properties affected by the line buffers (356/48, 356/45, 356/15) north of the N1 are used for grazing and residential (apart from 356/15) purposes. The dwellings on these properties are located near the N12 and the 'Sibanye access road', i.e. on property portions the furthest away from the buffer. Driefontein East mine's water treatment plant and reservoirs are located on a portion of 356/11.

3.7.3 Relationship with receptors

Transmission line and buffers

With the exception of Leeuwpoort 356/11, the proposed line and associated buffers affect the peripheral portions of properties (i.e., near cadastral boundaries). With the exception of Kraalkop 147/45, Leeuwpoort 356/77 and 356/11, the impacts would be confined to linear impacts near boundaries. The affected portion of 147/45 is part of a larger camp used for limited grazing. The affected portions of 356/77 and 356/11 form part of the Driefontein East mine and associated built complex. No significant land

fragmentation issues are therefore associated with the line. The lateral buffers are in general further away from boundaries, i.e. less desirable.

Properties would be affected over relatively short distances, namely 40 m-540 m (see Table 3.1 above) for the properties south of the N12, and 200 m – 1.2 km to the north. The only landowners affected over a distance of more than 500 m are the two Sibanye mining properties 147/46/RE (1.2 km) and 356/77 (910 m), and 356/11 (740 m). The affected portion of 356/11 accommodates the mine's water treatment plant and reservoirs on the mine's northern periphery.

The line and western line buffer would physically impact only undeveloped land, mostly veld actively or potentially used for grazing. The eastern line buffer also largely consists of veld, but also includes a portion of the yard (garden around farmstead) on Kraalkop 147/24/RE adjacent to the south of the N12, the entire sole access road to 147/24/RE, and a portion of the sole access road to 147/45 north of the N12. The orchard on 147/45 is not affected by the buffer. No footprint land use issues are therefore associated with the line and western buffer. Potential issues are however associated with regard to receptors on 147/24/RE and 147/65 adjacent to the N12 affected by the eastern buffer.

In terms of visual and sense of place impacts, the line is located in the immediate vicinity (<250 m) of two receptors, namely the farmsteads on Kraalkop 147/24/RE (140 m) and 147/65 (170 m), both to the east of the line (Table 3.2). The nearest receptor to the west is the farmstead on 147/31 (300 m) south of the N12. Kraalkop 147/24/RE and 147/31 both benefit from tree screening relative to the line (and less so buffers). All other receptors on both sides of the line are located >500 m.

Table 3.2: Overview of infrastructure in relation to receptors on properties directly affected or by buffer zones and significant nearby receptors (south to north, west to east)

PROPERTY[8]	RECEPTOR	LINE km[9]	BUF km[10]	SS km[11]	BUF km[12]	COMMENT
Kraalkop 147/20	Resort	1.4	1.3	1.3	0.84	Directly: 230 m; Part of Igolide WEF site
	Farmstead	1.5	1.3	1.4	0.94	
	Church	1.3	1.2	1.2	0.7	
Kraalkop 147/7/RE	Farmstead	1.6	1.5	1.6	1.2	Line buffer: 300 m
Kraalkop 147/45	Built node	0.56	0.46 West	0.86	0.39	Directly: 200 m
Kraalkop 147/31	Farmstead	0.3	0.17 West	0.76	0.26	Directly: 480 m; Existing tree screening
Kraalkop 147/24/RE	Farmstead	0.14	0.01 East	0.65	0.16	Line buffer: 540 m Existing tree screening; Access road within buffer
Kraalkop 147/40	Kraalkop Hotel	0.56	0.44 West	0.94	0.44	Located along N12
N12						
Kraalkop 147/65	Farmstead	0.17	0.04 East	1.3	0.82	Line buffer: 380 m Access road within buffer
Kraalkop 147/46	Farmstead	0.57	0.44 West	1.4	0.92	Directly: 1.2 km
Leeuwpoort 356/48	Farmstead	0.79	0.68	1.7	1.2	Line buffer: 240 m

[8] Shading indicates directly affected properties.
[9] Shading indicates receptors within 250 m of line (midline).
[10] Shading indicates receptors within 250 m of line buffer.
[11] Shading indicates receptors within 500 m of switching substation.
[12] Shading indicates receptors within 500 m of switching substation.

Leeuwpoort 356/15	Farmstead	1.2	1	2	2.5	Line buffer: 200 m
Leeuwpoort 356/11	Farmstead	1.4	1.2	2.5	1.3	Directly: 740 m

The same three receptors within 250 m of the line are also within 250 m of the line buffer, at closer proximity. The two receptors associated with the eastern buffer are particularly close to the buffer boundary, namely ~10 m (147/24/RE) and ~40 m (147/65), while the single receptor associated with the western buffer, the farmstead on 147/31, would be ~170 m from the buffer boundary. With regard to all study properties, the proposed line alignment is further away from receptors than the nearest buffer.

Only two tourism receptors are located in meaningful proximity to the proposed line, namely the Kraalkop Hotel to the west and Metjan Resort. The hotel is located 560 m west of the proposed line (440 m of western buffer). The hotel backs onto the N12. The context is rural-residential-business. The hotel is not located in immediate proximity (<250 m) of the line or buffer and is moreover not deemed a visually sensitive receptor. The Metjan Resort and dam on 147/20 are located in a significant depression, so would be screened from the proposed infrastructure. All Metjan receptors, including the private church are located >1.3 km of the line, and >1.2 km of the buffer. No significant impacts on tourism receptors are therefore anticipated.

Switching station and buffer

The switching station site is located in the north-westernmost part of Metjan estate, approximately 180 m south of the estate boundary, and near the existing access road off the N12 to Metjan's main store complex on Leeuwpoort 356/8 and 356/65. The site would occupy approximately 2.5 ha. The relevant area is currently used as grazing. Given the peripheral location, it would be possible to isolate the portion of the property for security purposes and from hunting activities. The substation location is acceptable to the owner (Botha, pers. comm).

The substation is not located in immediate proximity (<500 m) of any receptors. The nearest is the farmstead on Kraalkop 147/24/RE ~650 m to the north. Four receptors are located within 500 m of the buffer, all to the north, namely 147/45 (390 m), 147/31 (260 m), 147/24/RE (160 m) and the Kraalkop hotel (440 m). Northward movement of the site within the buffer is therefore less desirable.

Construction traffic would make use of the existing access road to Metjan estate's main store complex off the N12. The road serves only Metjan. The Resort and farmyard on 147/20 are accessed via another road off the N12 further to the west. The store complex is also accessible via internal roads, and off the Losberg/ Leeuwpoort gravel road which traverses the easternmost portion of the estate to the east of the project. No significant impacts on access property access are therefore anticipated.

Feed-in substation

The proposed feed-in substation is the existing substation at Driefontein East mine. No additional impacts (to the existing) are therefore anticipated.

SECTION 4: OVERVIEW OF KEY SOCIAL ISSUES

4.1 INTRODUCTION

Section 4 provides an assessment of the key social issues identified during the study. The identification of key issues was based on:

- Review of project related information, including other specialist studies.
- Site visit and interviews with key interested and affected parties.
- Experience/ familiarity of the author with the area and local conditions.
- Experience with similar projects.

The assessment section is divided into the following sections:

- Assessment of compatibility with relevant policy and planning context ("planning fit").
- Assessment of social issues associated with the construction phase.
- Assessment of social issues associated with the operational phase.
- Assessment of social issues associated with the decommissioning phase.
- Assessment of the "no development" alternative.
- Assessment of cumulative impacts.

4.2 ASSESSMENT OF POLICY AND PLANNING FIT

The findings of the SIA indicate that investment in renewable energy and the associated energy infrastructure is strongly supported at a national, provincial, and local level. The development of and investment in renewable energy and associated energy distribution infrastructure is supported by the National Development Plan (NDP), New Growth Path Framework and National Infrastructure Plan, which all highlight the importance of energy security and investment in energy infrastructure.

4.3 CONSTRUCTION PHASE SOCIAL IMPACTS

The findings of the SIA indicate that social impacts associated with the construction of the proposed 4km overhead power will be negligible.

Potential positive impacts

- Creation of employment and business opportunities.

Potential negative impacts

- Impacts associated with the presence of construction workers on local communities.
- Impact on local farmers and farming operations.
- Noise, dust, and safety impacts of construction related activities and vehicles.
- Increased risk of veld fires.

4.3.1 Creation of local employment and business opportunities

Based on similar projects the construction phase of the grid connection will extend over a period of approximately 6 months and create in the region of 20 employment opportunities. Given the well-developed mining sector in the area most of the

employment opportunities are likely to be filled by members from the local community and Historically Disadvantaged Individuals (HDIs).

The total wage bill will be in the region of R 1.8 million (2024 Rand values). A percentage of the wage bill will be spent in the local economy which will also create opportunities for local businesses in MCLM. The capital expenditure associated with the construction of grid infrastructure will be ~ R 18 million and will create opportunities for local companies and the local economy. Implementing the enhancement measures listed below can enhance these opportunities. The sector of the local economy that is most likely to benefit from the proposed development is the local service industry. The potential opportunities for the local service sector would be linked to catering, cleaning, transport, and security, etc. associated with the construction workers on the site. However, given the relatively small scale of the project and short duration of the construction phase these benefits will be limited.

Table 4.1: Impact assessment of employment and business creation opportunities during the construction phase

Nature: Creation of employment and business opportunities during the construction phase		
	Without Mitigation	**With Enhancement**
Extent	Local (1)	Local (2)
Duration	Short term (2)	Short term (2)
Magnitude	Low (2)	Medium (3)
Reversibility	N/A	N/A
Probability	Probable (3)	Highly probable (4)
Significance	Low (15)	Low (28)
Status	Positive	Positive
Can impact be enhanced?	Yes	

Enhancement:

Employment

- Where reasonable and practical, the proponent should appoint local contractors and implement a 'locals first' policy, especially for semi and low-skilled job categories. However, due to the low skills levels in the area, the majority of skilled posts are likely to be filled by people from outside the area.
- Where feasible, efforts should be made to employ local contractors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria.
- Before the construction phase commences the proponent should meet with representatives from the MCLM to establish the existence of a skills database for the area. If such a database exists, it should be made available to the contractors appointed for the construction phase.
- The local authorities, community representatives, and organisations on the interested and affected party database should be informed of the final decision regarding the project and the potential job opportunities for locals and the employment procedures that the proponent intends to follow for the construction phase of the project.
- Where feasible, training and skills development programmes for locals should be initiated prior to the initiation of the construction phase.
- The recruitment selection process should seek to promote gender equality and the employment of women wherever possible.

Business

- The proponent should liaise with the MCLM with regards the establishment of a database of local companies, specifically BBBEE companies, which qualify as potential service providers (e.g., construction companies, catering companies, waste collection companies, security

companies etc.) prior to the commencement of the tender process for construction service providers. These companies should be notified of the tender process and invited to bid for project-related work. Note that while preference to local employees and companies is recommended, it is recognised that a competitive tender process may not guarantee the employment of local labour for the construction phase
Residual impacts: Opportunity to up-grade and improve skills levels in the area.

Assessment of No-Go option
There is no impact as the current status quo would be maintained.

4.3.2 Impact of construction workers on local communities

The presence of construction workers can pose a potential risk to family structures and social networks. While the presence of construction workers does not in itself constitute a social impact, the manner in which construction workers conduct themselves can impact on local communities. The most significant negative impact is associated with the disruption of existing family structures and social networks. This risk is linked to potentially risky behaviour, mainly of male construction workers, including:

- An increase in alcohol and drug use.
- An increase in crime levels.
- The loss of girlfriends and/or wives to construction workers.
- An increase in teenage and unwanted pregnancies.
- An increase in prostitution.
- An increase in sexually transmitted diseases (STDs), including HIV.

Given the relatively small number of construction workers (~ 20) and likelihood that most will come from the local area, the potential impact on the local community is likely to be negligible.

Table 4.2: Assessment of impact of the presence of construction workers in the area on local communities

Nature: Potential impacts on family structures and social networks associated with the presence of construction workers		
	Without Mitigation	**With Mitigation**
Extent	Local (2)	Local (1)
Duration	Short term (2)	Short term (2)
Magnitude	Low (2)	Very Low (1)
Reversibility	N/A	N/A
Probability	Low Probability (2)	Low Probability (2)
Significance	Low (12)	Low (8)
Status	Negative	Negative
Can impact be mitigated?	Yes, to some degree. However, the risk cannot be entirely eliminated.	
Mitigation:		

• Where possible, the proponent should make it a requirement for contractors to implement a 'locals first' policy for construction jobs, specifically for semi and low-skilled job categories. • The proponent and contractor should develop a Code of Conduct (CoC) for construction workers. The code should identify which types of behaviour and activities are not acceptable. Construction workers in breach of the code should be subject to appropriate disciplinary action and/or dismissed. All dismissals must comply with the South African labour legislation. The CoC should be signed by the proponent and the contractors before the contractors move onto site. • The proponent and the contractor should implement an HIV/AIDS, and Tuberculosis (TB) awareness programme for all construction workers at the outset of the construction phase. • The contractor should provide transport for workers to and from the site on a daily basis. This will enable the contactor to effectively manage and monitor the movement of construction workers on and off the site. • The contractor must ensure that all construction workers from outside the area are transported back to their place of residence within 2 days for their contract coming to an end. No construction workers, except for security personnel, should be permitted to stay over-night on the site
Residual impacts: Impacts on family and community relations that may, in some cases, persist for a long period of time. Also, in cases where unplanned / unwanted pregnancies occur or members of the community are infected by an STD, specifically HIV and or AIDS, the impacts may be permanent and have long term to permanent residual/cumulative impacts on the affected individuals and/or their families and the community.

Assessment of No-Go option
There is no impact as the current status quo would be maintained.

4.3.3 Risk to safety of landowners and economic activities

The presence on and movement of construction workers on and off the site poses a potential safety threat to local landowners and the activities on the affected properties. In this regard farm infrastructure, such as fences and gates, may be damaged and stock losses may also result from gates being left open and/or fences being damaged, or stock theft linked either directly or indirectly to the presence of construction workers on the site. Stock theft in the area was raised a key concern.

In terms of the potential risk to Metjan Estate, the switching station is located on the northern boundary and will not impact on hunting operations. The potential risks (safety, livestock, and farm infrastructure) can be effectively mitigated by careful planning and managing the movement of construction on and off the site workers during the construction phase.

Table 4.3: Assessment of risk to safety, livestock, and damage to farm infrastructure

Nature: Potential risk to safety of landowners and disruption to current activities and land uses associated with the presence of construction workers on site and construction activities.		
	Without Mitigation	**With Mitigation**
Extent	Local (2)	Local (1)
Duration	Short term (2)	Short term (2)
Magnitude	Medium (3)	Low (2)
Reversibility	Reversible with compensation (3)	Reversible with compensation (3)
Probability	Probable (3)	Probable (3)
Significance	Moderate (30)	Low (24)
Status	Negative	Negative
Can impact be mitigated?	Yes	
Mitigation • The developer should compensate the directly affected landowners for impact during the construction phase. • The proponent should enter into an agreement with the directly affected farmers whereby damages to farm property etc. during the construction phase will be compensated for. The agreement should be signed before the construction phase commences. • All farm gates must be closed after passing through. • Contractors appointed by the proponent should provide daily transport for low and semi-skilled workers to and from the site. • The proponent should hold contractors liable for compensating farmers and communities in full for any stock losses and/or damage to farm infrastructure that can be linked to construction workers. This should be contained in the Code of Conduct to be signed between the proponent, the contractors, and neighbouring landowners. The agreement should also cover loses and costs associated with fires caused by construction workers or construction related activities (see below). • The Environmental Management Plan (EMP) must outline procedures for managing and storing waste on site, specifically plastic waste that poses a threat to livestock if ingested. • Contractors appointed by the proponent must ensure that all workers are informed at the outset of the construction phase of the conditions contained in the Code of Conduct, specifically consequences of stock theft and trespassing on adjacent farms. • Contractors appointed by the proponent must ensure that construction workers who are found guilty of stealing livestock and/or damaging farm infrastructure are dismissed and charged. This should be contained in the CoC. All dismissals must be in accordance with South African labour legislation. • It is recommended that no construction workers, except for security personnel, should be permitted to stay over-night on the site.		
Residual impacts: No**,** provided losses are compensated for.		

Assessment of No-Go option
There is no impact as the current status quo would be maintained.

4.3.4 Increased risk of grass fires

The presence of construction workers and construction-related activities on the site poses an increased risk of grass fires that could, in turn pose, a threat to livestock, crops, wildlife and farm infrastructure. The risk of grass fires was raised as a key concern. The

potential risk of grass fires will be higher during the dry, windy winter months from May to October. The impacts will be largely local and can be effectively mitigated.

Table 4.4: Assessment of impact of increased risk of grass fires

Nature: Potential loss of livestock and grazing and damage to farm infrastructure associated with increased incidence of grass fires		
	Without Mitigation	**With Mitigation**
Extent	Local (2)	Local (1)
Duration	Short term (2)	Short term (2)
Magnitude	Medium (3)	Low (2)
Reversibility	Reversible with compensation (3)	Reversible with compensation (3)
Probability	Probable (3)	Low Probability (2)
Significance	Moderate (30)	Low (16)
Status	Negative	Negative
Can impact be mitigated?	Yes	
Mitigation • The proponent should enter into an agreement with the directly affected farmers whereby damages to farm property etc., during the construction phase will be compensated for. The agreement should be signed before the construction phase commences. • Contractor should ensure that open fires on the site for cooking or heating are not allowed except in designated areas. • Smoking on site should be confined to designated areas. • Contractor should ensure that construction related activities that pose a potential fire risk, such as welding, are properly managed and are confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include avoiding working in high wind conditions when the risk of fires is greater. In this regard special care should be taken during the high-risk dry, windy winter months. • Contractor should provide adequate fire-fighting equipment on-site. • Contractor should provide fire-fighting training to selected construction staff. As per the conditions of the Code of Conduct, in the advent of a fire being caused by construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor should also compensate the fire-fighting costs borne by farmers and local authorities. • No construction staff, except for security staff, to be accommodated on site overnight.		
Residual impacts: No**,** provided losses are compensated for.		

Assessment of No-Go option
There is no impact as it maintains the current status quo.

4.3.5 Nuisance impacts associated with construction related activities

Construction related activities, including the movement of heavy construction vehicles of and on the site, has the potential to create dust, noise and safety impacts and damage roads. The impacts will be largely local and can be effectively mitigated.

Table 4.5: **Assessment of the impacts associated with construction related activities**

Nature: Potential noise, dust and safety impacts associated with movement of construction related activities and movement of traffic to and from the site		
	Without Mitigation	**With Mitigation**
Extent	Local (2)	Local (1)
Duration	Short term (2)	Short term (2)
Magnitude	Medium (3)	Low (2)
Reversibility	Reversible with compensation (3)	Reversible with compensation (3)
Probability	Probable (3)	Low Probability (2)
Significance	Moderate (30)	Low (12)
Status	Negative	Negative
Can impact be mitigated?	Yes	
Mitigation: • Timing of construction activities should be planned to avoid / minimise impact on key farming activities, including planting and harvesting operations. • Repair private roads at the end of construction period where required. • Dust suppression measures must be implemented on un-surfaced roads, such as wetting on a regular basis and ensuring that vehicles used to transport building materials are fitted with tarpaulins or covers. • All vehicles must be roadworthy, and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits.		
Residual impacts: If damage to local roads is not repaired then this will affect the other road users and result in higher maintenance costs. The costs will be borne by road users who were no responsible for the damage.		

Assessment of No-Go option
There is no impact as it maintains the current status quo.

4.4 OPERATIONAL PHASE SOCIAL IMPACTS

The following key social issues are of relevance to the operational phase:

Potential positive impacts
- Improved energy security and establishment of energy infrastructure.
- Creation of employment and procurement opportunities.
- Generate income for landowners.

Potential negative impacts
- The visual impacts and associated impact on sense of place.
- Impact on tourism facilities.
- Impact of maintenance activities on farming activities and operations.

4.4.1 Improve energy security and support the renewable energy sector

The proposed power line is essential to enable the development and operation of Igolide WEF. The primary goal of the proposed Igolide WEF is to improve energy security in South Africa by generating renewable energy. The proposed power line should therefore

be viewed within the context of the South Africa's current power supply constraints and the reliance on coal powered energy to meet most of its energy needs.

South Africa's energy crisis, which started in 2007 and is ongoing, has resulted in widespread rolling blackouts (referred to as load shedding) due to supply shortfalls. The load shedding has had a significant impact on all sectors of the economy and on investor confidence. The mining and manufacturing sector have been severely impacted and will continue to be impacted until such time as there is a reliable supply to energy. The Minister of Mineral Resources and Energy, Gwede Mantashe, indicated in February 2023 that the cost of load shedding was estimated at R1 billion a day [13]. The South African Reserve Bank indicated in February 2023 that stage 3 and stage 6 loadshedding cost the South African economy between R204 million and R899 million a day.[14]

A survey of 3 984 small business owners in 2019 found that 44% said that they had been severely affected by load shedding with 85% stating that it had reduced their revenue, with 40% of small businesses losing 20% or more or revenue during due to load shedding period[15].

Table 4.6: Improve energy security, reduce reliance on coal generated power sector

Nature: Development of infrastructure to improve energy security and reduce reliance on coal		
	Without Mitigation[16]	**With Mitigation[17]**
Extent	Local, Regional and National (3)	Local, Regional and National (3)
Duration	Long term (4)	Long term (4)
Magnitude	Medium (3)	Medium (3)
Reversibility	N/A	N/A
Probability	Highly Probable (4)	Highly Probable (4)
Significance	Moderate (40)	Moderate (40)
Status	Negative	Positive
Can impact be enhanced?	Yes	
Enhancement: • Maximise the number of employment opportunities for local community members. • Maximise opportunities for local content and procurement		
Residual impacts: Improved energy security and benefit for economic development and investment, reduction in CO_2 emission and reduction in water consumption for energy generation.		

[13] https://www.citizen.co.za/news/load-shedding-cost-economy-billion/
[14] https://businesstech.co.za/news/energy/662515/stage-6-load-shedding-costs-south-africa-r900-million-a-day-sarb/
[15] "How does load shedding affect small business in SA?". The Yoco Small Business Pulse (3: Q1 2019):

[16] Assumes power line is not established.
[17] Assumes power line is established.

Assessment of No-Go option
There is no impact as it maintains the current status quo.

4.4.2 Creation of employment and business opportunities

The potential employment and business-related opportunities associated with the power line will be limited and largely confined to periodic maintenance and repairs. The potential socio-economic benefits are therefore likely to be limited. The potential opportunities can however be enhanced if a local service provider is appointed to undertake the work required.

Table 4.7: Impact assessment of employment and business creation opportunities

Nature: Creation of employment, skills development and business opportunities associated with the operational phase		
	Without Mitigation	**With Enhancement**
Extent	Local and Regional (1)	Local and Regional (2)
Duration	Long term (4)	Long term (4)
Magnitude	Low (2)	Low (2)
Reversibility	N/A	N/A
Probability	Probable (3)	Highly Probable (4)
Significance	Low (21)	Moderate (32)
Status	Positive	Positive
Reversibility	N/A	
Can impact be enhanced?	Yes	
Enhancement: • Appoint a local service provider to undertake maintenance and repairs.		
Residual impacts: Creation of permanent employment and skills and development opportunities for members from the local community and creation of additional business and economic opportunities in the area.		

Assessment of No-Go option
There is no impact as it maintains the current status quo.

4.4.3 Generate income for affected landowners

The proponent will enter into rental agreements with the affected landowners for rental of the land affected by the alignment corridor. The additional income will reduce the risk to his livelihoods posed by droughts and fluctuating market prices for livestock, crops, and farming inputs, such as fuel, feed etc. Given the risks posed by climate change the additional income represents a t benefit for the affected landowner.

Table 4.8: Assessment of benefits associated with income generated for the affected farmer(s)

Nature: The generation of additional income represents a benefit for the local affected farmer(s) and reduces the risks to their livelihoods posed by droughts and fluctuating market prices for sheep and farming inputs, such as feed etc.		
	Without Mitigation	**With Enhancement**
Extent	Local (1)	Local (1)
Duration	Long term (4)	Long term (4)
Magnitude	Low (2)	Medium (3)
Reversibility	N/A	N/A
Probability	Probable (3)	Highly Probable (4)
Significance	Low (21)	Moderate (32)
Status	Positive	Positive
Can impact be enhanced?	Yes	
Enhancement: • Implement agreements with affected landowners. • The loss of high-quality agricultural land should be avoided and or minimised. The recommendations of the agricultural / soil assessment should be implemented.		
Residual impacts: Support for local agricultural sector and farming		

Assessment of No-Go option
There is no impact as it maintains the current status quo.

4.4.4 Visual impact and impact on sense of place

The proposed development has the potential to impact on the area's existing rural sense of place. However, the character of the area has been transformed by mining and there are also a number of existing power lines located in the area. None of the landowners interviewed raised concerns regarding visual impacts.

Table 4.9: Visual impact and impact on sense of place

Nature: Visual impact associated with the proposed facility and associated infrastructure and the potential impact on the areas rural sense of place.		
	Without Mitigation	**With Mitigation**
Extent	Local (2)	Local (2)
Duration	Long term (4)	Long term (4)
Magnitude	Low (2)	Low (2)
Reversibility	N/A	N/A
Probability	Probable (3)	Probable (3)
Significance	Low (24)	Low (24)
Status	Negative	Negative
Can impact be mitigated?	Yes	

Mitigation The recommendations contained in the VIA should be implemented
Residual impacts: Potential impact on current rural sense of place

Assessment of No-Go option
There is no impact as it maintains the current status quo.

4.4.5 Impact on land uses during maintenance[18]

The presence on and movement of maintenance workers on and off the site poses a potential risk to land uses and farming operations. Farm fence and gates may be damaged and stock losses may also result from gates being left open. The presence of maintenance workers on the site also increases the exposure of activities, including farming to the outside world, which, in turn, increased the potential risk of stock theft and crime. Based on experience with maintenance of the existing Eskom power lines this is an issue that will need to be addressed. The potential risks (safety, livestock, and farm infrastructure) can be effectively mitigated by ensuring the maintenance teams take care to ensure that gates are kept closed and affected property owners are kept informed about timing of maintenance operations. Mitigation measures to address these risks are outlined below.

Table 4.10: Assessment of risk to farming operations and damage to farm infrastructure

Nature: Potential risk to safety to farming operations and livestock associated with the presence of maintenance workers on the site		
	Without Mitigation	**With Mitigation**
Extent	Local (2)	Local (1)
Duration	Short term (2)	Short term (2)
Magnitude	Medium (3)	Low (2)
Reversibility	N/A	N/A
Probability	Probable (3)	Probable (3)
Significance	Low (21)	Low (15)
Status	Negative	Negative
Can impact be mitigated?	Yes	
Mitigation • Affected property owners should be notified in advance of the timing and duration of maintenance activities. • Maintenance teams must ensure that all farm gates must be closed after passing through. • Property owners should be compensated for damage to property and or loss of livestock or game associated maintenance related activities. • Movement of traffic and maintenance related activities should be strictly contained within designated areas associated with transmission lines and substations. • Strict traffic speed limits must be enforced on the farm. • No maintenance workers should be allowed to stay over-night on the affected properties.		

[18] The impacts are similar to the impacts associated with construction phase.

Residual impacts: No**,** provided losses are compensated for.

Assessment of No-Go option
There is no impact as the current status quo would be maintained.

4.4.6 Potential impact on tourism

Based on the findings of the SIA the proposed transmission line will not impact on tourism facilities in the area. Only two tourism receptors are located in meaningful proximity to the proposed line, namely the Kraalkop Hotel, which is located 560 m west of the proposed line (440 m of western buffer). The hotel backs onto the N12. The context is rural-residential-business. The Metjan Resort and dam on 147/20 are located in a valley and are screened from the line. All the receptors on Metjan, including the church, are located >1.3 km of the line, and >1.2 km of the buffer. No significant impacts on tourism receptors are therefore anticipated.

Table 4.11: Impact on tourism in the region

Nature: Potential impact on local tourism operations and activities		
	Without Mitigation	**With Mitigation**
Extent	Local (1)	Local (1)
Duration	Long term (4)	Long term (4)
Magnitude	Very Low (1)	Very Low (1)
Reversibility	N/A	N/A
Probability	Low Probability (2)	Low Probability (2)
Significance	Low (12)	Low (12)
Status	Negative	Negative
Can impact be mitigated?	Yes	
Mitigation The recommendations contained in the VIA should be implemented		
Residual impacts: Potential impact on current rural sense of place and future tourism opportunities in the area.		

Assessment of No-Go option
There is no impact as it maintains the current status quo.

4.5 CUMULATIVE IMPACT ON SENSE OF PLACE

The Scottish Natural Heritage (2005) describes a range of potential cumulative landscape impacts associated with wind farms on landscapes. These issues raised in these guidelines as to what defines a cumulative impact are also regarded as pertinent to transmission lines. The relevant issues identified by Scottish Natural Heritage study include:

- Combined visibility (whether two or more transmission lines) will be visible from one location).
- Sequential visibility (e.g. the effect of seeing two or more two or more transmission lines) along a single journey, e.g. road or walking trail).

- The visual compatibility of different two or more transmission lines in the same vicinity.
- Perceived or actual change in land use across a character type or region.
- Loss of a characteristic element (e.g. viewing type or feature) across a character type caused by developments across that character type.

There are existing transmission lines in the study area associated with the mining operations. The potential for cumulative impacts associated with combined visibility (whether two or more power lines will be visible from one location) and sequential visibility (e.g., the effect of seeing two or more power lines along a single journey, e.g., road or walking trail) does therefore exist. However, given that the areas sense of place has been impacted by mining and existing transmission lines the cumulative impact on the areas sense of place is likely to be low. None of the affected property owners interviewed identified visual impacts as a concern.

Table 4.12: Cumulative impacts on sense of place and the landscape

Nature: Visual impacts associated with the establishment of associated grid infrastructure and the potential impact on the area's rural sense of place and character of the landscape.		
	Overall impact of the proposed project considered in isolation	**Cumulative impact of the project and other projects in the area**
Extent	Local (1)	Local (2)
Duration	Long term (4)	Long term (4)
Magnitude	Low (2)	Low (2)
Reversibility	Reversible (1)	Reversible (1)
Probability	Probable (3)	Probable (3)
Significance	Low (24)	Low (27)
Status	Negative	Negative
Can impacts be mitigated?	Limited	
Mitigation The recommendations contained in the VIA should be implemented		

Assessment of No-Go option
There is no impact as it maintains the current status quo.

4.6 ASSESSMENT OF NO-DEVELOPMENT OPTION

The proposed power line is essential to enable the proposed Igolide WEF to connect to the national electricity grid to address the current energy supply constraints and reduce South Africa's reliance on coal generated energy. As indicated above, energy supply constraints and associated load shedding have had a significant impact on the economic development of the South African economy. South Africa also relies on coal-powered energy to meet more than 90% of its energy needs. South Africa is therefore one of the highest per capita producers of carbon emissions in the world and Eskom, as an energy utility, has been identified as the world's second largest producer of carbon emissions.

The No-Development option would represent a lost opportunity for South Africa to improve energy security and supplement is current energy needs with renewable energy. Given South Africa's current energy security challenges and its position as one of the

highest per capita producers of carbon emissions in the world, this would represent a negative social cost.

Table 4.12: Assessment of no-development option

Nature: The no-development option would result in the lost opportunity for South Africa to improve energy security and reduce reliance on coal power.		
	Without Mitigation[19]	**With Mitigation[20]**
Extent	Local-National (3)	Local-National (3)
Duration	Long term (4)	Long term (4)
Magnitude	Medium (3)	Medium (3)
Reversibility	Reversible (1)	Reversible (1)
Probability	Highly Probable (4)	Highly Probable (4)
Significance	Moderate (44)	Moderate (44)
Status	Negative	Positive
Can impact be mitigated?	Yes	
Enhancement: The proposed grid infrastructure should be developed, and the mitigation and enhancement measures identified in the SIA and other specialist studies should be implemented.		
Residual impacts: Improved energy security and benefit for economic development and investment, reduction in CO_2 emission and reduction in water consumption for energy generation.		

[19] Assumes power line is not developed.
[20] Assumes power line is developed.

SECTION 5: SUMMARY OF KEY FINDINGS

5.1 INTRODUCTION

Section 5 lists the key findings of the study. These findings are based on:

- A review of key planning and policy documents pertaining to the area.
- A review of social and economic issues associated with similar developments.
- Site visit and interviews with key stakeholders.
- The experience of the authors with other renewable energy projects.

5.2 SUMMARY OF KEY FINDINGS

The key findings of the study are summarised under the following sections:

- Fit with policy and planning.
- Construction phase impacts.
- Operational phase impacts.
- Cumulative impacts.
- Decommissioning phase impacts.
- No-development option.

5.2.1 Policy and planning issues

The development of renewable energy and the associated energy infrastructure is strongly supported at a national, provincial, and local level. The development of and investment in renewable energy and associated energy distribution infrastructure is supported by the National Development Plan (NDP), New Growth Path Framework and National Infrastructure Plan, which all highlight the importance of energy security and investment in energy infrastructure. The development of the proposed power line is therefore supported by key policy and planning documents.

5.2.2 Construction phase impacts

The key social issues associated with the construction phase include:

Potential positive impacts

- Creation of employment and business opportunities, and the opportunity for skills development and on-site training.

The construction phase will extend over a period of approximately 6 months and create in the region of 20 employment opportunities. The total wage bill will be in the region of R 1.8 million (2024 Rand values). Most of the employment opportunities are likely to benefit residents from the MCLM. Most the beneficiaries are likely to be HD members of the community. This would represent a short term positive social benefit in an area with limited employment opportunities. A percentage of the wage bill will be spent in the local economy which will also create opportunities for local businesses in MCLM.

The capital expenditure associated with the construction of power line will be ~R18 million (2024 Rand values) and will create opportunities for local companies and local economy. The local service industry will also benefit from the provision of catering, cleaning, transport, and security, etc. associated with the construction workers on the

site. However, given the relatively small scale of the development and short construction period the benefits will be limited.

Potential negative impacts
- Impacts associated with the presence of construction workers on local communities.
- Noise, dust, and safety impacts of construction related activities and vehicles.
- Risk of veld fires.
- Risks to landowners and land uses posed to activities by construction workers.

The findings of the SIA indicate that the significance of the potential negative impacts is likely to be negligible. With mitigation they are rated as **Low Negative**. The potential negative impacts associated with the proposed construction of the power line can therefore be effectively mitigated if the recommended mitigation measures are implemented. Table 5.1 summarises the significance of the impacts associated with the construction phase.

Table 5.1: Summary of social impacts during construction phase

Impact	Significance No Mitigation / Enhancement	Significance With Mitigation / Enhancement
Creation of employment and business opportunities	Low (Positive)	Moderate (Positive)
Presence of construction workers and potential impacts on family structures and social networks	Low (Negative)	Low (Negative)
Nuisance impacts, such as noise and dust associated with construction activities and vehicles	Low (Negative)	Low (Negative)
Risk of veld fires	Moderate Negative)	Low (Negative)
Safety risk, stock theft and damage to property infrastructure associated with presence of construction workers	Moderate Negative)	Low (Negative)

5.2.3 Operational phase impacts

The benefits associated with the Igolide WEF are dependent upon being able to connect to the national grid. The key social issues associated with the operational phase include:

Potential positive impacts
- Improve energy security and establishment of energy infrastructure.
- Creation of employment and local procurement opportunities.
- Generate income for landowners.

Potential negative impacts
- Visual impacts and associated impacts on sense of place.
- Impact on tourism facilities.
- Risks posed to activities by maintenance workers.

The findings of the SIA indicate that the significance of the potential negative impacts is likely be **Low Negative** if the required mitigation measures are effectively implemented. The significance of the impacts associated with the operational phase are summarised in Table 5.2.

Table 5.2: Summary of social impacts during operational phase

Impact	Significance No Mitigation / Enhancement	Significance With Mitigation / Enhancement
Improve energy security and establishment of energy infrastructure	Moderate (Positive)	Moderate (Positive)
Creation of employment and business opportunities during maintenance	Low (Positive)	Moderate (Positive)
Generate income for landowners	Low (Positive)	Moderate (Positive)
Visual impact and impact on sense of place	Low (Negative)	Low (Negative)
Impact on tourism facilities	Low (Negative)	Low (Negative)
Safety risk and damage to infrastructure associated with presence of maintenance workers	Moderate (Negative)	Low (Negative)

5.2.4 Cumulative impact on sense of place

There are several existing power lines in the area. The potential for cumulative impacts associated with combined visibility (whether two or more power lines will be visible from one location) and sequential visibility (e.g., the effect of seeing two or more power lines along a single journey, e.g., road or walking trail) does therefore exist. However, the area's sense of place has been impacted by mining and existing transmission lines. The cumulative impact on the area's sense of place is therefore likely to be low.

5.2.5 Assessment of no-development option

The No-Development option would represent a lost opportunity for South Africa to improve energy security and supplement is current energy needs with renewable energy. Given South Africa's current energy security challenges and its position as one of the highest per capita producers of carbon emissions in the world, this would represent a negative social cost.

5.3 CONCLUSIONS AND RECOMMENDATIONS

Conclusion
The energy security benefits associated with the proposed Igolide WEF are dependent upon it being able to connect to the national grid via the establishment of grid connection infrastructure. The construction and operational phase will also create employment and business opportunities which will benefit the MCLM. The findings of the SIA also indicate that the significance of the potential negative social impacts for both the construction and operational phase of the proposed 132 kV Igolide overhead power line and associated infrastructure are **Low Negative** with mitigation. The potential negative impacts can therefore be effectively mitigated if the recommended mitigation measures are implemented.

Statement and reasoned opinion
The establishment of proposed 132 kV Igolide overhead power line and associated infrastructure is supported by the findings of the SIA.

ANNEXURE A

INTERVIEWS

- Botha, Mr Koos (telephonic 2024-05-02). Kraalkop 147/8/RE, 147/14, 147/20; Leeuwpoort 356/8, 356/57, 356/65, 356/66.
- Esterhuizen, Ms Kobie (telephonic 2024-04-30). Kraalkop 147/31.
- Kasselmann, Ms Alma (telephonic 2024-04-30). Kraalkop 147/68.
- Mitchell, Mr Johan (telephonic 2024-04-30). Leeuwpoort 356/11.
- Vierra, Ms Michelle (telephonic 2024-04-30). Kraalkop 147/45.

REFERENCES

- National Development Plan (2011).
- New Growth Path Framework (2010).
- National Infrastructure Plan (2012).
- Gauteng Provincial Employment, Growth and Development Strategy.
- Gauteng Provincial Spatial Development Framework 2030.
- Gauteng Integrated Energy Strategy (2012).
- Growing Gauteng Together 2030.
- Merafong City Local Municipality Integrated Development Plan (2022-23).
- Merafong City Local Municipality Spatial Development Framework (2019).

ANNEXURE B: ASSESSMENT METHODOLOGY

METHODOLOGY FOR THE ASSESSMENT OF POTENTIAL IMPACTS

Assessment of Impacts and Mitigation

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

The key objectives of the risk assessment methodology are to identify any additional potential environmental issues and associated impacts likely to arise from the proposed project, and to propose a significance ranking. Issues / aspects will be reviewed and ranked against a series of significance criteria to identify and record interactions between activities and aspects, and resources and receptors to provide a detailed discussion of impacts. The assessment considers direct[21], indirect[22], secondary[23] as well as cumulative[24] impacts.

A standard risk assessment methodology is used for the ranking of the identified environmental impacts pre-and post-mitigation (i.e. residual impact). The significance of environmental aspects is determined and ranked by considering the criteria[25] presented in **Table 0-1**.

Table 0-1: Impact Assessment Criteria and Scoring System

CRITERIA	SCORE 1	SCORE 2	SCORE 3	SCORE 4	SCORE 5
Impact Magnitude (M) The degree of alteration of the affected environmental receptor	Very low: No impact on processes	Low: Slight impact on processes	Medium: Processes continue but in a modified way	High: Processes temporarily cease	Very High: Permanent cessation of processes
Impact Extent (E) The geographical extent of the impact on a given environmental receptor	Site: Site only	Local: Inside activity area	Regional: Outside activity area	National: National scope or level	International: Across borders or boundaries
Impact Reversibility (R) The ability of the environmental receptor to rehabilitate or restore after the activity has caused environmental change	Reversible: Recovery without rehabilitation		Recoverable: Recovery with rehabilitation		Irreversible: Not possible despite action
Impact Duration (D) The length of permanence of the impact on the environmental receptor	Immediate: On impact	Short term: 0-5 years	Medium term: 5-15 years	Long term: Project life	Permanent: Indefinite

[21] Impacts that arise directly from activities that form an integral part of the Project.

[22] Impacts that arise indirectly from activities not explicitly forming part of the Project.

[23] Secondary or induced impacts caused by a change in the Project environment.

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

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

CRITERIA	SCORE 1	SCORE 2	SCORE 3	SCORE 4	SCORE 5
Probability of Occurrence (P) The likelihood of an impact occurring in the absence of pertinent environmental management measures or mitigation	Improbable	Low Probability	Probable	Highly Probability	Definite
Significance (S) is determined by combining the above criteria in the following formula:	$[S = (E + D + R + M) \times P]$ $Significance = (Extent + Duration + Reversibility + Magnitude) \times Probability$				
IMPACT SIGNIFICANCE RATING					
Total Score	0 – 30		31 to 60		61 – 100
Environmental Significance Rating (Negative (-))	**Low (-)**		**Moderate (-)**		**High (-)**
Environmental Significance Rating (Positive (+))	**Low (+)**		**Moderate (+)**		**High (+)**

ANNEXURE C: CV

Tony Barbour
ENVIRONMENTAL CONSULTING

10 Firs Avenue, Claremont, 7708, South Africa
(Cell) 082 600 8266
(E-Mail) tony@tonybarbour.co.za

Tony Barbour's has 30 years' experience in the field of environmental consulting and management. His experience includes working for ten years as a consultant in the private sector followed by four years at the University of Cape Town's Environmental Evaluation Unit. He has worked as an independent consultant since 2004, with a key focus on Social Impact Assessment. His other areas of interest include Strategic Environmental Assessment and review work.

EDUCATION

- BSc (Geology and Economics) Rhodes (1984).
- B Economics (Honours) Rhodes (1985).
- MSc (Environmental Science), University of Cape Town (1992).

EMPLOYMENT RECORD

- Independent Consultant: November 2004 – current;
- University of Cape Town: August 1996-October 2004**:** Environmental Evaluation Unit (EEU), University of Cape Town. Senior Environmental Consultant and Researcher;
- Private sector: 1991-August 2000: 1991-1996**:** Ninham Shand Consulting (Now Aurecon, Cape Town). Senior Environmental Scientist; 1996-August 2000: Steffen, Robertson and Kirsten (SRK Consulting) – Associate Director, Manager Environmental Section, SRK Cape Town.

LECTURING

- University of Cape Town: Resource Economics; SEA and EIA (1991-2004);
- University of Cape Town: Social Impact Assessment (2004-current);
- Cape Technikon: Resource Economics and Waste Management (1994-1998);
- Peninsula Technikon: Resource Economics and Waste Management (1996-1998).

RELEVANT EXPERIENCE AND EXPERTISE

Tony Barbour has undertaken in the region of 350 SIAs, including SIAs for infrastructure projects, dams, pipelines, and roads. In addition, he is the author of the Guidelines for undertaking SIAs as part of the EIA process commissioned by the Western Cape Provincial Environmental Authorities in 2007. These guidelines have been used throughout South Africa.

Countries with work experience include South Africa, Namibia, Angola, Botswana, Zambia, Lesotho, Swaziland, Ghana, Senegal, Nigeria, Mozambique, Mauritius, Kenya, Ethiopia, Oman, South Sudan, Sudan, Rwanda and Armenia.

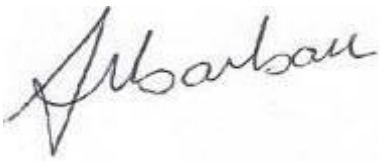
ANNEXURE D: DECLARATION OF INDEPENDENCE

The specialist declaration of independence in terms of the Regulations_

I, Tony Barbour , declare that --

General declaration:

I act as the independent specialist in this application;
I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
I declare that there are no circumstances that may compromise my objectivity in performing such work;
I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
I will comply with the Act, Regulations and all other applicable legislation;
I have no, and will not engage in, conflicting interests in the undertaking of the activity;
I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
all the particulars furnished by me in this form are true and correct; and
I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the specialist:
Tony Barbour Environmental Consulting and Research

Name of company (if applicable):

6 July 2024
Date: