ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED WASTE RECOVERY PLANT AT HIGHVELD STEEL NEAR WITBANK, MPUMALANGA

Socio-Economic Impact Study
Scoping Phase Specialist Report
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ABBREVIATIONS

CAGR	Compounded Average Growth Rate
DM	District Municipality
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
GDP	Gross Domestic Product
GDP-R	Gross Domestic Product per Region
I&AP	Interested and Affected Parties
IDP	Integrated Development Plan
IDZ	Industrial Development Zone
IPAP	Industrial Policy Action Plan
IRP	Integrated Resource Plan
LM	Local Municipality
NDP	National Development Plan
NEA	Not Economically Active
NGPF	New Growth Path Framework
SDF	Spatial Development Framework

1. INTRODUCTION

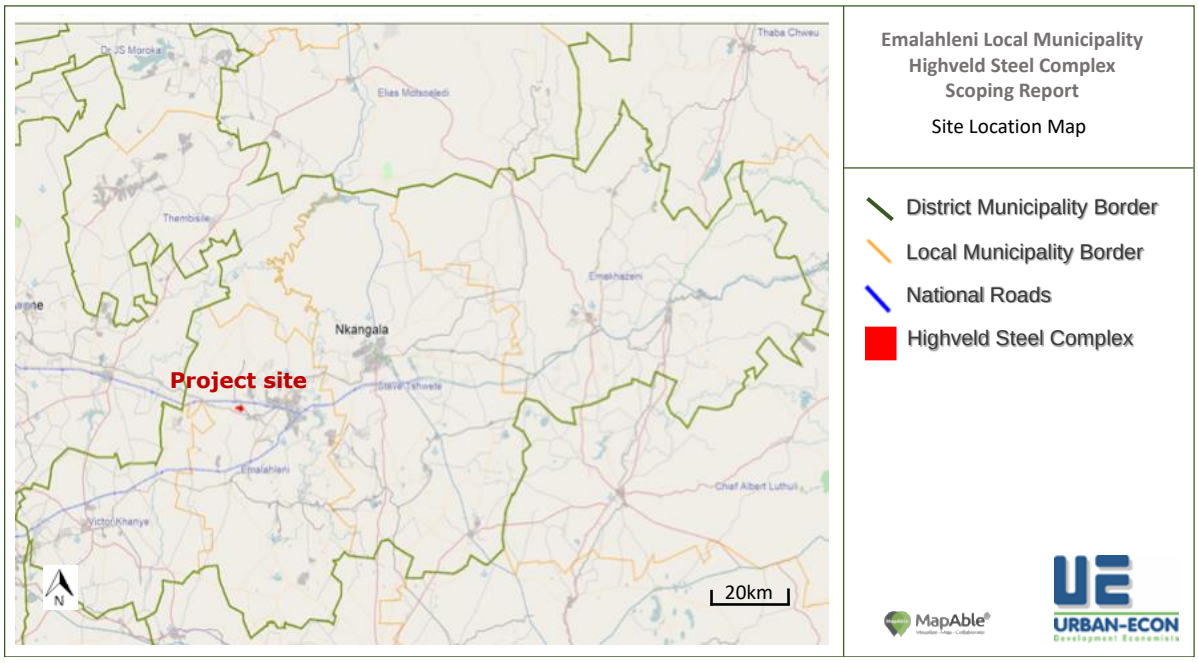
This document is prepared by **Urban-Econ Development Economists** (Urban-Econ) in response to a request by **Savannah Environmental (Pty) Ltd** (Savannah Environmental) to undertake a scoping report for the proposed small-scale waste recovery plant at the Highveld Steel complex in the Mpumalanga Province. The study is conducted as part of the scoping phase process for the project managed by Savannah Environmental, which forms part of the Environmental Impact Assessment (EIA) process.

The aim of the study is to determine the current socio-economic baseline characteristics of the preliminary delineated study area and identify the potential influence of the proposed project on the surrounding economic activities and communities to guide the assessment during the next phase.

1.1 Brief description of the project

Fodere Titanium proposes the development of small industrial waste recovery plant at the Highveld Steel industrial complex in the eMalahleni Local Municipality (LM), Mpumalanga. The facility will be developed with an aim of reducing waste from mineral beneficiation activities while contributing to job creation and economic development in the region.

The process employed at the proposed plant will simultaneously extract vanadium and titanium oxides, aluminium as aluminium oxide (Al_2O_3), magnesium as magnesium oxide (MgO), and calcium as calcium sulphate/gypsum ($CaSO_4$) from slag materials from Highveld Steel.



Map 1.1: Location of the proposed waste recovery plant

1.2 Scope and purpose of the study

The purpose of the scoping report is to determine the key issues and potential impacts of the proposed project that are to be investigated in greater detail during the EIA phase. The report is prepared as part of the socio-economic study and used as an input into the scoping report that is compiled by Savannah Environmental.

The scoping phase inputs address only a portion of the scope of the work involved in the Socio-Economic Impact Assessment Study and enable the project team and the client to make more informed decisions regarding the way forward for the proposed project from an environmental management point of view. The purpose of the socio-economic scoping report is as follows:

- Undertake a policy review and assess the alignment of the proposed project with the national, provincial, and local socio-economic policies
- Create a socio-economic profile for the study area using secondary data
- Identify potential direct, indirect, induced, and cumulative effects that are to be exerted by the proposed project during various stages of its lifespan and that will require further investigation
- Evaluate the preliminary identified impacts in terms of the nature, extent and potential significance
- Identify gaps in knowledge and data that will need to be addressed during the EIA phase.

1.3 Methodology

The methodological approach adopted for conducting the scoping study includes three steps:

1. **Data collection:** Secondary research encompassing the examination of relevant policies, local and provincial strategic documents and secondary data presented by Stats SA and Quantec. The information obtained assists in providing a preliminary profile of the socio-economic environment that could potentially be affected.

2. **Baseline profiling:** A description of the study area is given in terms of selected socio-economic variables. It includes the analysis of spatial context and regional linkages, population size and household numbers, structure and growth of the economy, labour force and employment situation, as well as access to basic services and the state of the local built environment. Profiling for the study is done by making use of the Quantec Research Database, Stats SA's Census 2011 data and various strategic documents produced for the relevant municipality. A brief profile of the directly affected zone of influence is also provided.

3. **Identification and evaluation of the anticipated impacts:** This step includes the identification of the socio-economic impacts that could be expected during various phases of the project's life cycle and their high-level assessment in terms of the nature and extent, as well as the way forward with respect to the collection of data required to quantify and qualify the impacts during the EIA phase.

1.4 Data gathering, consultation process, assumptions and limitations

Due to the remote location of the project relative to settlements and high density economic activities, the assessment during the scoping report relies on secondary data obtained from various documents and databases. A site visit and primary data gathering by means or interviews with various Interested and Affected Parties (I&APs) will be conducted during the EIA phase following the collection of initial feedback obtained during public participation process to be conducted post the Scoping Phase.

The following data sources were considered:

- Stats SA Census, 2011

- Stats SA Labour Force Survey
- Quantec Research Standardised Regional Data, 2010-2019
- Integrated Development Plans (IDPs)
- Spatial Development Frameworks (SDFs)
- National and provincial strategic documents.

The reliance on secondary data does not allow the socio-economic team to determine locality-specific socio-economic issues. However, the project is not envisaged to be located near the concentration of any of the sensitive receptors (i.e. households, farms, tourism facilities, etc.). This suggests that the absence of the primary data at this stage does not prevent the specialist's team from identifying the potential socio-economic issues that could ensue from the project as expertise and past experience with similar projects has been utilised. Absence of primary data is also not seen as a limitation for the preliminary assessment of the extent, nature and potential significance of the identified possible impacts.

2. POLICY REVIEW

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

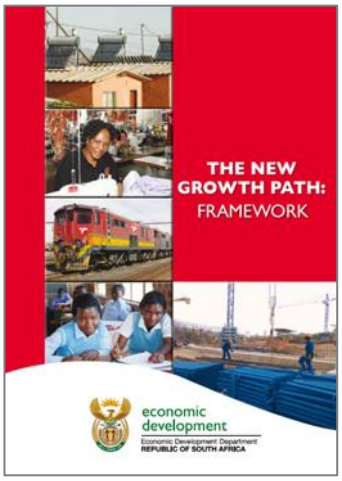
The following government strategic documents applicable to the delineated study areas were examined:

- **National (South Africa):**
  - New Growth Path Framework (NGPF) (2011)
  - National Development Plan (NDP) 2030 (2011–2030)
  - Industrial Policy Action Plan (IPAP) (2018/19–2020/2021)
  - A Beneficiation Strategy for the Minerals Industry of South Africa (2011)
- **Regional (the Mpumalanga Province):**
  - Mpumalanga Economic Growth and Development Path (2011)
  - Draft Green Economy Plan (2016)
  - Mpumalanga Industrial Development Plan (2016)
- **Local (the Nkangala DM and eMalahleni LM):**
  - Nkangala District Municipality Integrated Development Plan 2017/18-2021/22
  - eMalahleni Local Municipality Integrated Development Plan 2017/18-2021/2022
  - eMalahleni Spatial Development Framework (SDF) 2015.

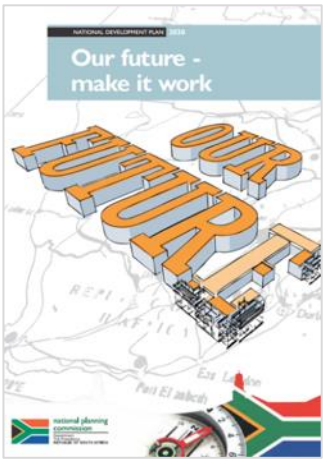
2.1 Project alignment with National policies and strategic documents

The **New Growth Path Framework (NGPF) (2011)** was developed to ensure that economic policy in South Africa reflects the importance of job creation to address the key issues the country faces, such as joblessness, poverty and inequality. The aim of the NGPF

is to restructure the economy of South Africa to improve its performance not only in composition and growth rates, but also in terms of labour absorption.



One of the identified means of achieving this objective is through the increase in local processing of South Africa's natural resources. As one of the key sectors in which employment is created, the manufacturing sector has been targeted to create 350 000 jobs by 2020 by the NGPF. The NGPF therefore supports and promotes the investment into the mineral beneficiation and manufacturing sectors to encourage activities that may lead to large-scale employment generation. The NGPF further emphasises the importance of job creation in the green economy.



Informed by the objectives outlined by the NGPF, the **National Development Plan (NDP) 2030** aims to eliminate poverty and reduce inequality by 2030 through the identification of different sectors that play a pivotal role in its effective implementation. The manufacturing sector has been identified as one of the key sectors in which job creation may be promoted and the NDP encourages the development of local manufacturing.

The importance of stimulating business activity, such as labour-intensive manufacturing, close to dense townships has been highlighted in the NDP to encourage job creation in areas in which unemployment is prevalent. Another goal outlined in the NDP is South Africa's transition to an environmentally sustainable, climate-change resilient, low carbon-economy, which is envisaged through a zero-waste society. The NDP highlights the importance of recognising major opportunities in the manufacturing sector, such as waste reutilisation, and aims to promote the technical capacity of clean technologies that may provide the country with growth opportunities in the carbon-constrained global economy. The NDP emphasises the need for industrial manufacturing to move towards greener industries over time.

The development of the **Beneficiation Strategy for the Minerals Industry of South Africa (2011)** was informed by the NGPF's identification of mineral beneficiation being one of the priority areas in which employment opportunities may be created. The Beneficiation Strategy aims to create a competitive advantage in the mineral sector on the basis of the existing comparative advantage associated with the mineral resource endowments in the country. The Beneficiation Strategy aligns itself with other national industrialisation programmes that aim to improve the quantity and quality of exports, promote the creation of decent employment and diversify the economy.

Given the low levels of mineral beneficiation in the country, the aim of the Beneficiation Strategy is to place focus on developing mineral value chains in South Africa to facilitate the expansion of beneficiation initiatives in the country. Although the country has seen some expansion in value-addition facilities such as manufacturing and mineral processing, the Strategy seeks to further increase South Africa's capacity to export goods that are not only ores or semi-processed goods.

The **Industrial Policy Action Plan (IPAP) 2018/19-2020/21** is guided by government's overall policy objectives to promote economic and industrial growth and address the key challenges identified therein, such as poverty, inequality and unemployment. The objective of the IPAP is to promote long-term industrialisation and industrial diversification in South Africa in the midst of a global deindustrialisation. The IPAP therefore aims to reindustrialise the South African economy to double exports through a number of interventions to support transformation within the industry. This radical economic transformation is guided by its objective of creating sustainable jobs, particularly for the marginalised and most vulnerable in society.

The manufacturing sector has been identified as a priority area to lead the way for IPAP's objectives. Furthermore, greater waste management has been pinpointed to be vital in the meeting of these objectives and the IPAP promotes the recycling of manufacturing by-products to meet South Africa's objective of becoming a zero-waste society.

2.2 Project alignment with Provincial policies and strategic documents

Fostering economic growth that creates jobs and reduces poverty and inequality in the Mpumalanga province is the main goal of the **Mpumalanga Economic Growth and Development Path (MEGDP)** (2011). The Provincial Government of Mpumalanga has set to achieve the following between 2011 and 2021 (Mpumalanga Provincial Government, 2011):

» Reduce the unemployment rate from 28% in 2011 to 15% in 2021 through the creation of approximately 719 000 jobs
» Increase the income level of 620 000 individuals above the poverty line
» Increase the Human Development Index (HDI) from 0.50 by increasing literacy levels from 40 000 individuals per annum to 63 000 individuals per annum and life expectancies from 51 years to 62 years
» Reduce the Gini-coefficient from 0.65 to 0.55 by 2020
» Increase the economic growth rate to between 5 and 7 per cent per annum to achieve the targets listed above.

The MEGDP outlines the importance of the manufacturing industries in the Mpumalanga Province as one of the largest contributors to the provincial economy and one of the biggest absorbers of employment (Mpumalanga Provincial Government, 2011). The manufacturing sector is therefore considered critical to the economic growth and job creation objectives set out in the province. The Provincial Government of Mpumalanga has targeted the creation of 47 000 jobs in the manufacturing sector and intends to target sectors that ensure beneficiation, invest in industrial infrastructure to encourage enterprise development, and recruit technology and skills from outside the borders of Mpumalanga, amongst others.

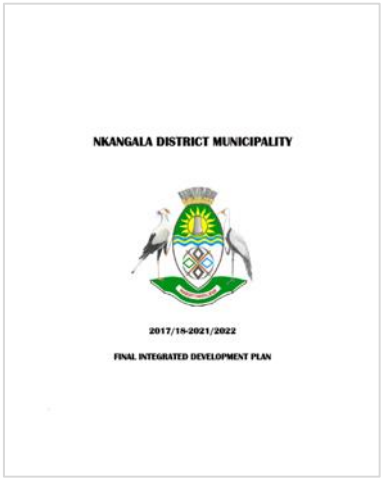
In the MEGDP, the Mpumalanga Provincial Government also highlights the importance of its transition to a green economy and has placed its focus on developing a Clean and Green Development Strategy to fulfil Mpumalanga's contribution to transitioning South Africa to a low-carbon economy.

In 2016, Mpumalanga drafted a **Green Economy Sector Plan**, which identified four core implementation pillars. One of these pillars related to green towns and urban centres and focused on expansion of recycling activities and waste beneficiation. Although the proposed project is not directly linked to the priorities identified in the Draft Green Economy Plan, it does support the overall vision of transition towards a green economy.

A greater emphasis on the industrialisation activities is articulated in the **Mpumalanga Industrial Development Plan (2016)**, which sets "a clear commitment towards industrialisation by the Provincial Government, through enabling infrastructure development and resource allocation, among others". The plan proposes the establishment of the Mining and Metals Industrial Centre of Competence in the region of eMalahleni and Middleburg, where the proposed project is to be located. The Centre of Competence is envisaged to be situated in a technology park, which is likely to be situated outside the location of the proposed project. Nonetheless, these plans emphasise the concentration of mining and mineral activities, knowledge and technologies that the area, where the proposed project is located, currently possess. This suggests that the proposed development is generally in line with the provincial industrial vision for the area.

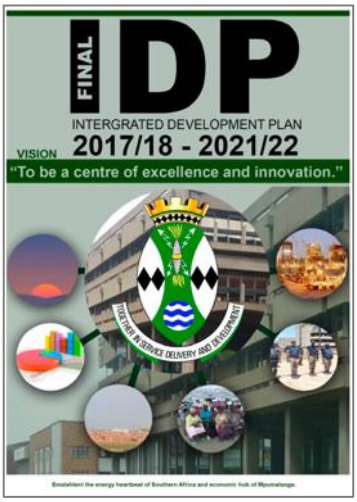
2.3 Project alignment with Local policies and strategic documents

The developmental objectives set in the **Nkangala District Municipality Integrated Development Plan (NDMIDP) 2017/18-2021/22** include the alleviation of poverty, promotion of infrastructural development, and creation of employment opportunities by developing the physical, socio-economic and institutional environment in the district. As manufacturing is one of the sectors which dominates the economic base of the district, the



NDMIDP targets further diversification of manufacturing activities as a key source of achieving the objectives of the NDMIDP.

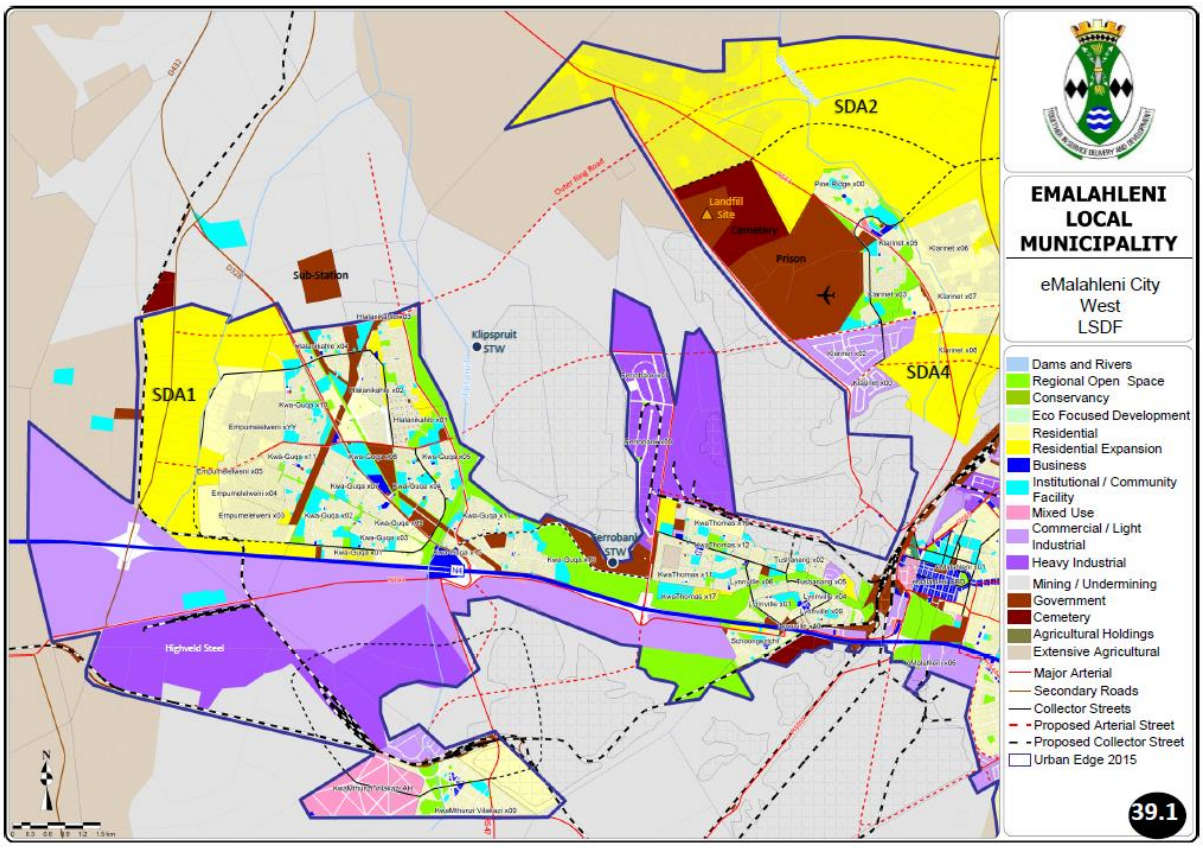
The development plan specifically emphasises that industrial areas such as Columbus Steel in Steve Tshwete and Highveld Steel in eMalahleni should be maintained and enhanced through service maintenance and upgrading programmes. Furthermore, the NDMIDP recommends that developmental focus be placed on these areas, which already contain industrial infrastructure for future manufacturing and industrialisation. The NDMIDP also calls for development and mainstreaming of the green economy and as such, the development of green jobs.



The **eMalahleni Local Municipality Integrated Development Plan (ELMIDP) 2017/18-2021/22** sets out to empower the communities within the municipality by facilitating an environment, which fosters sustainable economic development and social transformation. The eMalahleni LM aims to provide spatial transformation and social cohesion, sustainable and affordable services, clean administration and good governance, financial viability and socio-economic growth and a safe environment.

The municipality has identified comparative advantages in the mining, manufacturing and utilities sectors, and has placed substantial focus on the development of projects and skills in these sectors. The ELMIDP also provides for the strong support of existing industrial and manufacturing activities and recommends that new industrial development be consolidated along the N4 and N12 Development Corridors, which is the area where the proposed project is to be developed.

The **eMalahleni Spatial Development Framework (SDF) (2015)** provides for further insight into the developmental and land zoning objectives for the area, where the proposed project is to be developed. As indicated in Map 2.1, the SDF shows that the project is to be located within the area that is zoned for heavy industrial land use. Considering the nature of the project, its location is in direct alignment with the current spatial development vision for the area.



Map 2.1: Local SDF (Emalahleni LM, 2015)

Overall, it can be concluded that the proposed project is in alignment with the local and provincial developmental policies and spatial frameworks. The project is also expected to make a contribution toward the achievement of the national developmental objectives related to industrialisation, mineral beneficiation and waste management.

3. BASELINE PROFILE

This chapter examines key socio-economic characteristics of the study area. This is essential as it provides both qualitative and quantitative data relevant to the communities and economies under observation and creates a baseline that will assist in identifying the sensitive receptors and potential impacts.

The following socio-economic indicators are analysed in this chapter:

» Spatial Compositions and Land-Use
» Demographic Profiling
» The Economy and its Structure
» The Labour Force and Employment Structure
» Status of Infrastructure.

3.1 Study area's composition and locational factors

a) <u>Spatial context and regional linkages</u>

The small industrial waste recovery plant proposed by Fodere Titanium is planned to be located in Highveld Steel industrial complex in the eMalahleni LM within the Nkangala DM in the Mpumalanga Province. The Mpumalanga Province is located north of the Kwazulu-

Natal Province, sharing borders with Swaziland and Mozambique in the east (Mpumalanga Provincial Government, 2017). The Mpumalanga Province is the second smallest province in South Africa at 76 495 km^2, comprising 6.5% of South Africa's total land area (Global African Network, 2017). With a population of approximately 442 867, Mpumalanga is South Africa's third most densely populated province after Kwazulu-Natal and Gauteng, with approximately 60 people per square kilometre (Quantec, 2020f). The Mpumalanga Province is divided into three district municipalities (DMs) – Ehlanzeni DM, Gert Sibande DM and Nkangala DM – which contain 18 local municipalities collectively.

As outlined in **Figure 3.1**, the Nkangala District comprises six local municipalities, namely Victor Khanye LM, eMalahleni LM, Steve Tshwete LM, Emekhazeni LM, Thembisile Hani LM, and Dr J S Moroka LM. Covering a total area of 16 756 km^2, the Nkangala DM makes up 22% of the Mpumalanga Province's land mass and has a population of approximately 1 572 051 (Nkangala District Municipality, 2017b; Quantec, 2020d). The Nkangala DM is abundant with minerals and natural resources and is said to be at the economic hub of the Mpumalanga Province. The Nkangala DM is host to the Maputo Corridor, which brings further opportunity for its economic growth (Nkangala District Municipality, 2017b). The economy of the Nkangala DM is driven by electricity, manufacturing and mining (Nkangala District Municipality, 2017b).

Figure 3.1: The six municipalities located in the Nkangala District Municipality (Municipalities of South Africa, 2018)

The eMalahleni LM has a geographical area of approximately 2 677 kms^2 and consists of a number of towns, including Balmoral, Clewer, Coalville, Hlalanikahle, Kendal, Kriel, KwaGuqa, Lynnville, Matla, Minnaar, New Largo, Ogies, Paxton, Phola, Rietspruit, Thubelihe, Van Dyks Drif, Wilge, and eMalahleni (Nkangala District Municipality, 2017a).

The eMalahleni LM contains one of the major urban concentrations in the Nkangala DM and the Municipality Province as a whole (Nkangala District Municipality, 2017a).

Predominantly an industrial area, the eMalahleni LM contains 27 economic hubs consisting of 883 businesses with main sectors such as manufacturing, trade, transport and finance and community services (Nkangala District Municipality, 2017a). Further aiding its economic development, the eMalahleni LM is located close to Gauteng with the N4 and N12 national roads facilitating transportation of goods manufactured in the municipality (Nkangala District Municipality, 2017a). The eMalahleni LM is considered a "gateway municipality" into the province for all but one of the nine provinces in South Africa (Emalahleni Local Municipality, 2016).

b) Major towns and settlements

The proposed waste recovery plant is to be located within the Highveld Steel complex. The closest towns to this complex are KwaGuqa and KwaMthunzi Vilakazi (formerly known Clewer), which are approximately 5.9 kilometres and 7 kilometres from the proposed site, respectively.

- KwaGuqa is a township located north of the proposed project site and separated from it by an open space and the N4 national road.
- KwaMthunzi Vilakazi is settlement comprising of agricultural holdings and a township, which is older than the town of eMalahleni itself. It is located close to the Kendal Power Station and is surrounded by a number of collieries and mines.

c) Locational factors and major tourism attractions

Featuring mainly underground and opencast mines, the eMalahleni LM is considered to be the most industrialised LM in the Nkangala DM (Emalahleni Local Municipality, 2016). The eMalahleni LM possesses the largest concentration of power stations in the country and is thought to be the "energy heartbeat" of South Africa (Emalahleni Local Municipality, 2016).

While eMalahleni is known for its coal mines and power stations, the municipality is in the process of rebranding itself as the tourist destination by taking advantage of its tourism resources, such as the Witbank Nature Reserve and the Ezemvelo Nature Reserve, which are currently weekend tourist attractions for Gauteng residents (Emalahleni Local Municipality, 2016).

d) Sense of place, history and cultural aspects

Established in 1903, the town of eMalahleni (Witbank) was named after a ridge of white rock located near the present railway station, which was a halting place for transport wagons and a place of trading (Emalahleni LM, 2015). The principal language in the eMalahleni LM is Zulu, followed by Afrikaans and Northern Sotho.

The LM's concentration of industrial activities is reflected in its heritage places that exhibit a rich historical background, specifically industrial and military history, architectural and engineering sites and historical gravesites (Emalahleni Local Municipality, 2016). The town has a number of cultural heritage sites, such as the Battle of Bakenlaagte site, Clewer railway station and the Roodebloem farmstead.

The town of KwaGuqa is host to a number a valuable heritage resources including historical church buildings and houses, the Indian Cemetery and structures associated with mining activities (Emalahleni LM, 2015). The conservation and protection of these heritage places, especially those around the town of eMalahleni and KwaGuqa, have been identified as a priority for government (Emalahleni Local Municipality, 2016).

3.2 Demographic Profile

The population of any geographical area is the cornerstone of the development process, as it affects the economic growth through the provision of labour and entrepreneurial skills and determines the demand for the production output. Examining population dynamics is essential in gaining an accurate perspective of those who are likely to be affected by any prospective development or project. This sub-section describes the status quo of the study area's population.

a) Population Demographics

In 2019, the eMalahleni LM had a population of approximately 477 938 people comprising of 145 605 households (Quantec, 2020f). The average household size of in the region was approximately 3.3 people during the year (Quantec, 2020f). The eMalahleni LM has the second largest population concentration in the Mpumalanga Province and accounts for the largest proportion of population in the Nkangala District, as well as the highest population growth in the District (Emalahleni Local Municipality, 2016; Quantec, 2020d).

Of the total population, 84.9% are Black African and 12.7% are White, with the remaining 2.4% being Coloured, Indian or Asian (Quantec, 2020f). The majority of residents in the municipality fall in the 30 to 44 age category (30.0%), followed closely by the 15 to 29 age category (27.0%) (Quantec, 2020e). The male population exceeds that of the female population by approximately 9.2 percentage points (Quantec, 2020e).

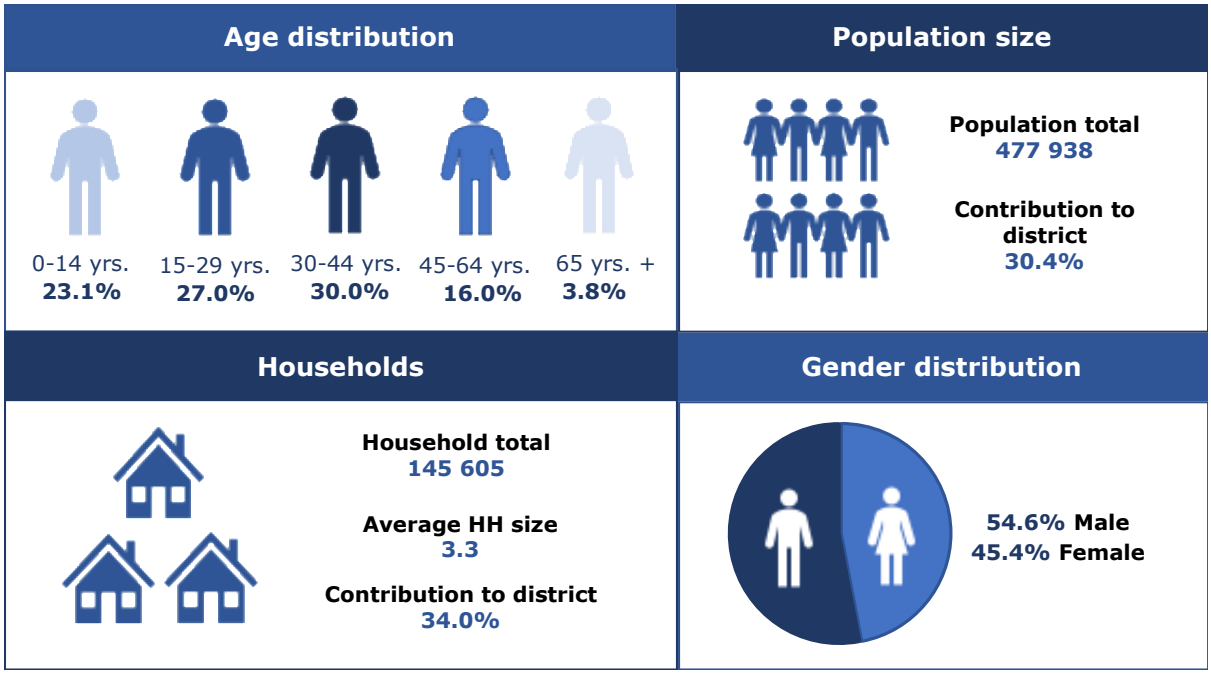


Figure 3.2: Population demographics of eMalahleni Local Municipality, 2019 (Quantec, 2020e; 2020f)

The demographic profile in the eMalahleni LM is indicative of the economic structure of the municipality and its historical development, which was dependent on the establishment of the mining and electricity generation sectors. Areas that have a relatively large presence of the mining sector, tend to have a higher proportion of male population and population within a working age group due to the settlement structures designed to accommodate a single-living, working male population employed in the mining sector.

b) Income Levels

According to the Census 2011[1], nearly half of households (46.0%) in the eMalahleni LM earned between R0 and R3 200 a month, with over 9 161 households (6.5%) having no source of income (Stats SA, 2011). In 2012, the average annual household income in the eMalahleni LM was ranked third after Steve Tshwete and Govern Mbeki (Emalahleni Local Municipality, 2016). However, it could be argued that due to the proximity of the location of the municipality relatively to the economic hubs of Ekurhuleni and Johannesburg, many of the higher income groups of households who have members working in the municipality reside outside the eMalahleni LM.

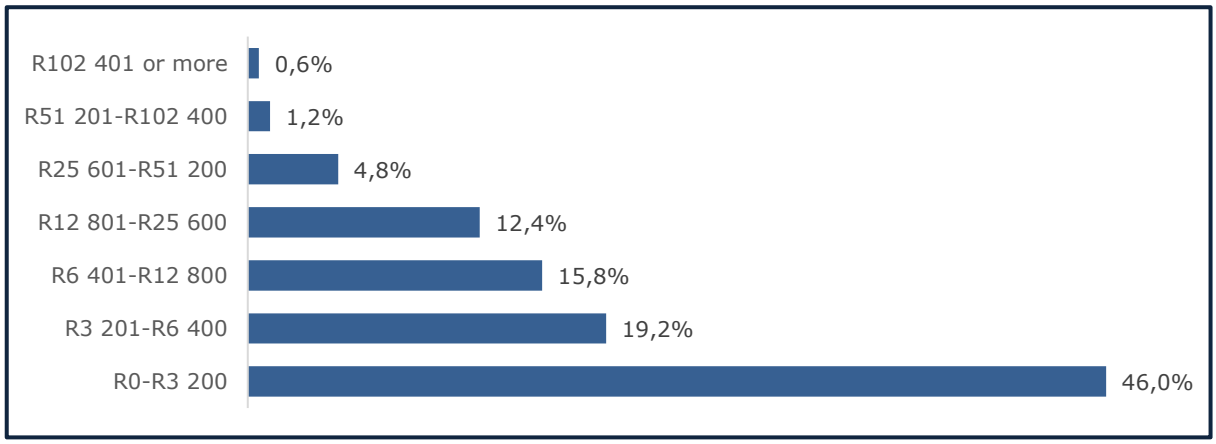


Figure 3.3: Income levels of households in eMalahleni Local Municipality, 2011 (Stats SA, 2011)

c) Education Levels

As indicated in **Figure 3.4**, 5.5% of adults aged 20 and above in the eMalahleni LM have no formal schooling whatsoever as of 2019 (Quantec, 2020d). Approximately 9.0% of adults have some primary schooling; 4.1 per cent of adults have only completed primary schooling (Quantec, 2020d).

The majority of adults in the region have at least some secondary schooling (35.5%), while 30.1% of the adult population have obtained a matric certificate. Approximately 13.3% of adults aged 20 and above in the eMalahleni LM have obtained a higher education qualification, with 10.8% having obtained a diploma or certificate and 2.5% having obtained at least a Bachelor's degree.

[1] It should be noted that the use of 2011 data is due to the unavailability of the more recent data on income levels at a local municipality level.

The low to moderate levels of education correlates with the types of industries which comprise the economic base of the municipality, such as the mining industry that is known to have many low- to semi-skilled workers.

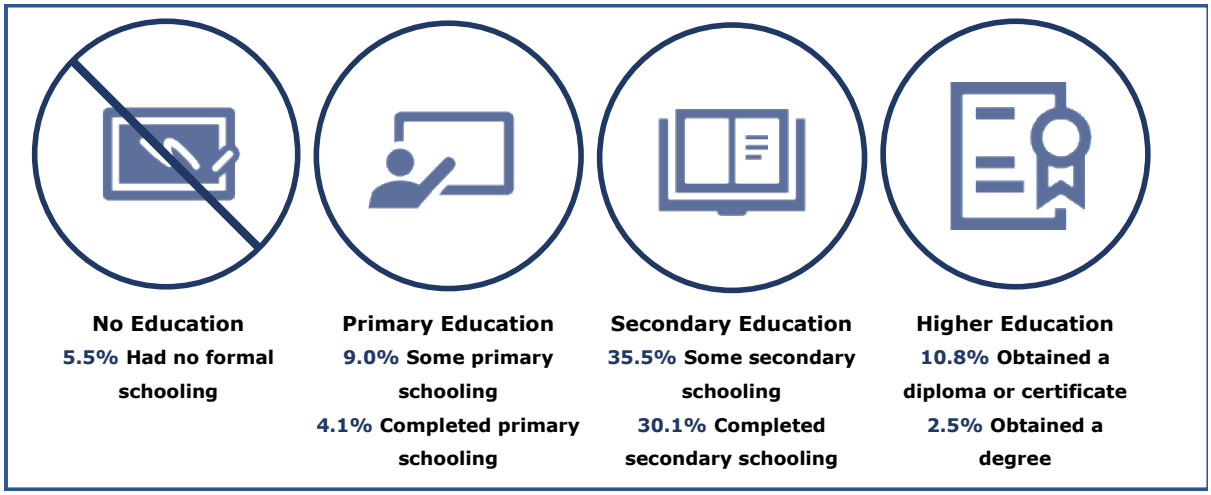


Figure 3.4: Level of education in the eMalahleni Local Municipality, 2019 (Quantec, 2020d)

3.3 The Economy

In 2019, the eMalahleni LM's economy was valued at R45 826 million (in current prices), contributing 13.4% to Mpumalanga Province's total economy's gross value added (GVA) (Quantec, 2020g). Accounting for nearly half of this value (47%), the mining and quarrying sector was by far the biggest contributor to the municipality's economy in 2019. The sector with the highest economic growth rate, though, was the construction sector with a Compounded Annual Growth Rate (CAGR) of 4.3% between 2010 and 2019. Over the same period, the manufacturing and electricity, water and gas sectors contracted by 0.4% and 0.5%, respectively.

Table 3.1: Structure of economies for the Mpumalanga Province and eMalahleni Local Municipality

Industry	Mpumalanga Province			eMalahleni Local Municipality		
	GVA (R millions)	% of GVA	CAGR	GVA (R millions)	% of GVA	CAGR
	2019	2019	2010-2019	2019	2019	2010-2019
Agriculture, forestry and fishing	8 778	3%	1.4%	277	0%	2.8%
Mining and quarrying	84 044	25%	1.3%	36 983	47%	0.7%
Manufacturing	44 307	13%	0.8%	6 428	8%	-0.4%
Electricity, gas and water	26 194	8%	-0.4%	11 768	15%	-0.5%
Construction	10 180	3%	0.8%	2 060	3%	4.3%
Wholesale and retail trade,	50 143	15%	1.3%	6 273	8%	1.3%

Industry	Mpumalanga Province			eMalahleni Local Municipality		
	GVA (R millions)	% of GVA	CAGR	GVA (R millions)	% of GVA	CAGR
	2019	2019	2010-2019	2019	2019	2010-2019
catering and accommodation						
Transport, storage and communication	22 254	7%	1.6%	3 510	4%	2.6%
Finance, insurance, real estate and business services	38 914	11%	2.2%	6 211	8%	2.4%
General government	43 457	13%	1.9%	4 489	6%	2.3%
Community, social and personal services	13 459	4%	1.2%	1 496	2%	0.6%
Total	341 732	100%	1.3%	45 826	100%	0.9%

Source: Authors' calculations based on Quantec (2020g)

3.4 Labour Force and Employment Structure

Employment is the primary means by which individuals who are of working age may earn an income that will enable them to provide for their basic needs and improve their standard of living. As such, employment and unemployment rates are important indicators of socio-economic well-being. The following paragraphs examine the study area's labour market from a number of perspectives, including the employment rate and sectoral employment patterns.

a) Labour Force Composition

Of the total working age population in the eMalahleni LM, approximately 47.7% were employed in 2019 (Quantec, 2020c). However, as 110 264 individuals were not economically active (NEA)[2], the municipality had an unemployment rate of 30.3% during the year.

Table 3.2: Labour force profile for Mpumalanga, Nkangala and eMalahleni, 2019

Indicators	Mpumalanga	Nkangala	eMalahleni
Working age population	2 972 524	1 067 976	348 972
Non-economically active	1 249 023	438 287	110 264
Labour force	1 723 500	629 689	238 707

[2] NEA persons are those who are not actively seeking employment due to various reasons including being discouraged to look for employment opportunities.

Indicators	Mpumalanga	Nkangala	eMalahleni
Employed	1 184 438	419 698	166 457
Unemployed	539 062	209 991	72 250
Unemployment rate	31.3%	33.3%	30.3%
Labour participation rate	58.0%	58.7%	68.4%

Source: Authors' calculations based on Quantec (2020c)

The unemployment rate in 2019 was slightly lower than in the Nkangala District and the Mpumalanga Province with unemployment rates of 33.3% and 30%, respectively. The labour participation rate of the eMalahleni LM was approximately 10 percentage points higher than that in the Nkangala DM and Mpumalanga Province during the year. These findings are in line with eMalahleni LM being the "economic hub" of the province.

b) Employment Structure

The mining and quarrying sector accounted for the largest percentage of jobs created in the eMalahleni LM in 2019, with 29% of the employed population in the municipality being absorbed by this sector (Quantec, 2020a). The next highest contributor to employment during the year was the wholesale and retail trade, catering and accommodation sector, accounting for 16% of total jobs in the region. The agriculture, forestry and fishing sector was the eMalahleni LM's smallest contributor to employment in 2019 at 2%.

Table 3.3: Sectoral contributors to employment in eMalahleni LM, 2019

Industry	Mpumalanga Province		Nkangala District Municipality		eMalahleni Local Municipality	
	Employment	% of total	Employment	% of total	Employment	% of total
Agriculture, forestry and fishing	136 244	12%	17 288	4%	2 875	2%
Mining and quarrying	114 441	10%	72 458	17%	48 817	29%
Manufacturing	94 908	8%	34 332	8%	13 987	8%
Electricity, gas and water	11 214	1%	6 600	2%	4 311	3%
Construction	83 723	7%	35 747	9%	13 030	8%
Wholesale and retail trade, catering and accommodation	252 293	21%	80 398	19%	27 233	16%
Transport, storage and communication	47 265	4%	18 437	4%	6 280	4%
Finance, insurance, real estate and business services	135 401	11%	48 396	12%	18 644	11%
General government	129 369	11%	38 878	9%	12 162	7%

Industry	Mpumalanga Province		Nkangala District Municipality		eMalahleni Local Municipality	
	Employment	% of total	Employment	% of total	Employment	% of total
Community, social and personal services	179 580	15%	67 164	16%	19 118	11%
Total	1 184 438	100%	419 698	100%	166 457	100%

Source: Authors' calculations based on Quantec (2020a)

Approximately 20% of the employed in the eMalahleni LM were active in the informal sector in 2019. Of the remaining 80% employed in the formal sector, approximately 17% were considered skilled workers, while the majority of workers (62%) in eMalahleni LM were classified as semi-skilled. Low-skilled workers accounted for approximately 21% of employment in the municipality in 2019.

3.5 Status of infrastructure and basic service delivery

Access to basic service delivery and infrastructure such as shelter and transport are indicators that assist in understanding the standard of living of the households residing in the study areas. Comprehension of the extent to which households in the area have access to water, sanitation, and electricity assists in the understanding of communities' living standards and their needs. The availability of service infrastructures such as roads, educational and health facilities, etc., further indicates the nature of the study area, which is valuable in developing a complete profile of the circumstances in which communities are living.

a) Basic service delivery

In 2019, 72.8% of households in the eMalahleni LM had **access to electricity**. Of the households who did not have access to electricity, 23.9% utilised candles for lighting while the remaining households made use of paraffin, gas, solar and other unspecified sources for lighting (Quantec, 2020b).

The majority of the population (88.3%) in the eMalahleni LM had **access to piped water** within 200m of their dwelling in 2019, with 53.9% and 25.0% having access to piped water inside their dwelling and inside their yard, respectively. Approximately 8.6% of individuals who did not have access in their dwelling or yard had access to piped water within 200m of their dwelling; 6.1% of households had access to piped water beyond 200m from their dwelling. The remaining 5.4% made use of other water sources, such as boreholes, rainwater tanks, wells, water-carriers, water vendors and other unspecified sources.

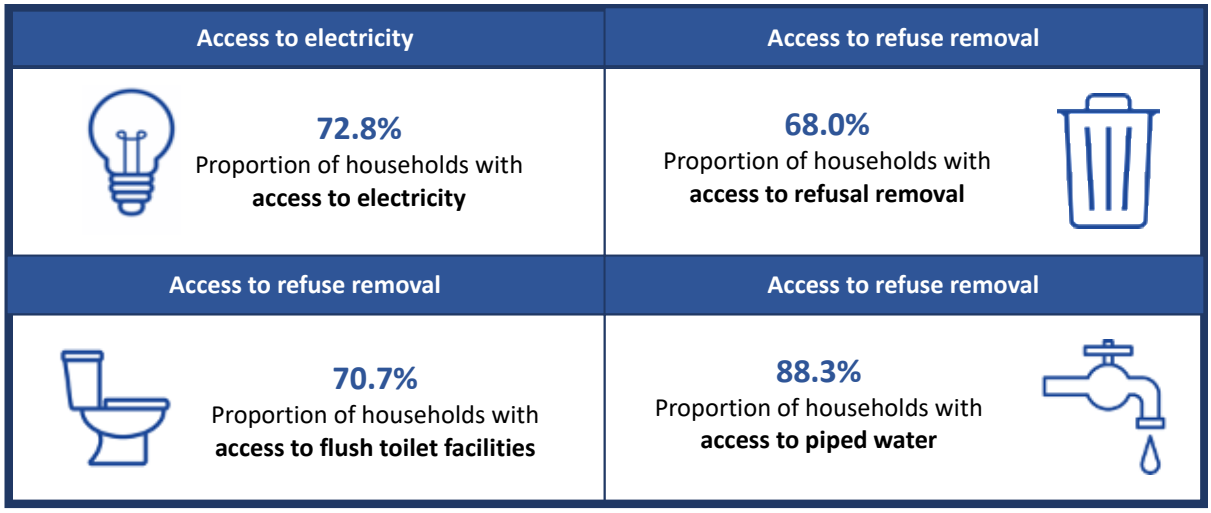


Figure 3.5: Access to services in the eMalahleni LM, 2019

In 2019, 68.0% of the eMalahleni population had **refuse removal** done by their local authority, with approximately 66.6% having their refuse removed by the local authority at least once a week. Other means of refuse removal in the municipality included the use of their own rubbish dump (21.3%) and communal refuse dumps and other unspecified means (3.8%). The remaining 7.0% of residents in eMalahleni LM did not have access to refuse removal.

Approximately 70.7% of households in the eMalahleni LM had access to a flush or chemical toilet in 2019. The other toilet facilities, pit latrine and bucket latrines, were used by 24.7% of households in eMalahleni. Approximately 4.6% of the population in the region had no toilet facilities in 2019. This may be an indication of a **sanitation** problem in the municipality.

b) Status of Social Facilities

The eMalahleni LM boasts a number of **healthcare** facilities. The municipality has six hospitals, 15 fixed clinics and three mobile clinics (Emalahleni LM, 2020). There is at least one clinic in every town. It has been suggested, however, that due to the population size in Lynnville, KwaGuqa and Hlalanikahle, there may be a need for the development of more clinics.

In terms of **safety**, the municipality has a total of five police stations in eMalahleni, Kriel, Phola, Vosman and Ogies (Emalahleni LM, 2019). However, safety remains a matter of concern in the municipality as there is a high prevalence of crime due to a large number of unemployed youth and drug abuse in the community. The establishment of satellite police stations have been identified as a need in many communities in the region (Emalahleni LM, 2020).

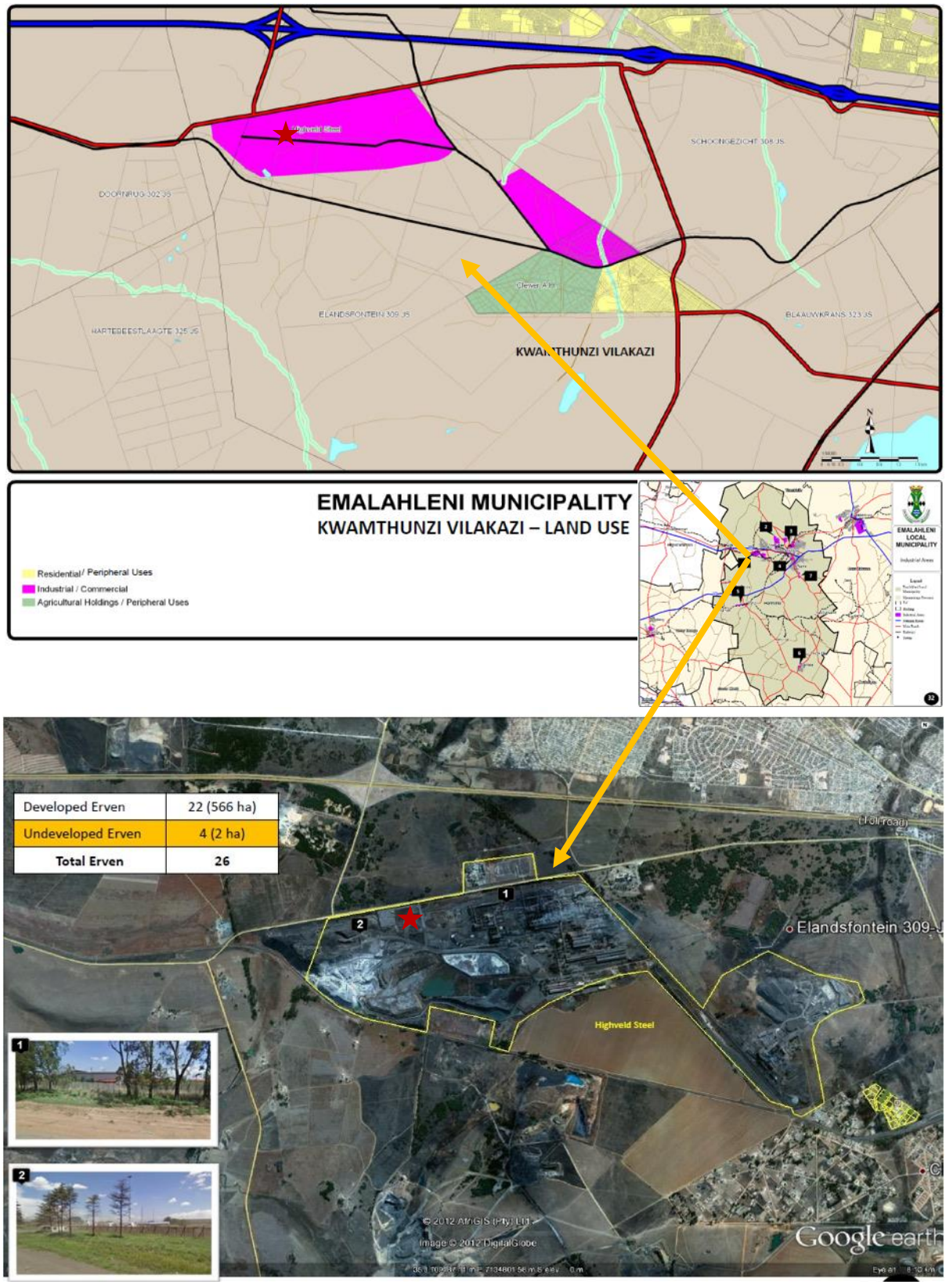
As of 2015, the eMalahleni LM has 34 preschools, 58 primary schools and 19 secondary schools, with an identified lack of **education** facilities in Hlalanikahle (Emalahleni LM, 2015). In terms of higher education, there are four tertiary facilities in the municipality, namely the Tshwane University of Technology, Pretoria University, UNISA and eMalahleni College (Emalahleni LM, 2015). The municipality also has other tertiary institutions such as the Mpondozankomo Technical College in Ackerville and the Coal Training College in Klipfontein. The development of additional adult basic education and training (ABET) and

other skills training facilities in the municipality has been identified to be necessary to improve the socio-economic status of the population given the low literacy and employment levels.

4. SITE RELATED INFORMATION: ZONE OF INFLUENCE BASELINE

The site-related information section investigates the various dynamics of the proposed site. **Map 4.1** indicates the current land uses of the proposed project site and its surroundings. As of 2015, the eMalahleni LM has six major industrial areas, which consist of approximately 591 developed and 279 vacant industrial erven (Emalahleni Local Municipality, 2015). The proposed waste recovery plant is planned to be located in one of the existing industrial areas, the Highveld Steel complex.

The Highveld Steel complex is approximately 10 kilometres west from the CBD and has an estimated area of 1 700 ha (Emalahleni Local Municipality, 2015). The two nearest towns to the Highveld Steel complex are the KwaGuqa township, which is located approximately 5.9 kms from the complex, and the small town of Clewer, which is located approximately 7.0 kms away from the complex. The Highveld industrial area is wholly occupied by Highveld Steel. The plant will therefore be situated in an area which is already cordoned off for manufacturing purposes. Subsequently, it is expected that the proposed plant will have very little additional effect on the surrounding areas.



Map 4.1: Project locality and surrounding land uses (Emalahleni Local Municipality, 2015)

5. POTENTIAL SOCIO-ECONOMIC IMPACTS

Considering the project background and the socio-economic environment of the region in which the proposed plant is to be located, the following impacts are most likely to be raised and will need to be investigated in the EIA phase in greater detail. The preliminary assessment of the extent and significance of the above-mentioned impacts is provided further in this section.

5.1 Construction Phase Impacts to be Considered

Impact

Increase in Production and GDP-R of the national and local economies due to capital expenditure.

Desktop Sensitivity Analysis of the Site:

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Stimulation of national and local economies due to capital expenditure which will increase production and GDP-R.	A positive impact to production and GDP-R due to the investment made.	The scale of the impact will be from the local to the national level.	None identified.

Description of expected significance of impact

The construction of the waste recovery plant within the Highveld Steel complex will require capital investments. Given the capacity of the eMalahleni LM, the municipality's economy should see an increase in production and GDP-R due to the plant's construction. Furthermore, the procurement of capabilities from other parts of the country will also see an increase in the national economy. Overall, the impact will possibly be of medium significance (positive) due to injected investment, which will further improve the GDP-R of the eMalahleni LM and the country in general.

Gaps in knowledge and recommendations for further study

Information on total, breakdown and local content of capital expenditure is required to determine direct and multiplier effects of the project on the local and national economies. Duration of construction phase information is required.

Impact

Temporary employment creation in local communities and elsewhere in the country.

Desktop Sensitivity Analysis of the Site:

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Impact involves the creation of direct, indirect and induced employment	Job creation will reduce unemployment as a result of the	The impact will occur at national and local levels.	None identified.

opportunities related to the construction of the proposed waste recovery plant.	construction of the waste recovery plant.		

Description of expected significance of impact

Approximately 3 out of 10 individuals in the eMalahleni LM are unemployed. The construction of the waste recovery plant in the Highveld Steel complex may produce an increase in employment opportunities for those individuals who are directly employed in the construction and indirectly for those involved in the provision of services to those directly involved. Given the nature of the construction and the levels of skills in the LM, it is unlikely that the local population will absorb all the employment opportunities provided. However, given the large number of low-skilled (21%) and semi-skilled (62%) workers in the municipality, the construction phase will still present a large number of opportunities for the unemployed. The impact is expected to have medium significance (positive) due to the number of jobs expected to be created and the temporary nature of the impact.

Gaps in knowledge and recommendations for further study

Information on employment to be created locally and at other scales is required. The duration of employment information is required.

Impact

Skills development due to the creation of new employment opportunities

Desktop Sensitivity Analysis of the Site:

No technical skills institutions in the area.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Skills will be created and/or enhanced for benefitting employees during the construction phase.	The impact is positive as it develops skills that are beneficial for future employment.	The impact will occur at national and local levels.	None identified.

Description of expected significance of impact

Given the skill demographics of the population in the eMalahleni LM, the new employment opportunities driven by the construction of the waste recovery plant in the Highveld Steel complex will provide those low- to semi-skilled workers an opportunity to develop new skillsets or enhance their existing skills. This will in turn benefit these individuals through increased future job prospects. This impact will be of medium significance (positive) due to the long-term benefits associated with skills development.

Gaps in knowledge and recommendations for further study

Information on the types of skills to be developed during construction, as well as the percentage of different skill-level opportunities made available to the local labour, is required.

Impact

Household income will lead to the improved standard of living for households directly or indirectly benefitting from employment opportunities.

Desktop Sensitivity Analysis of the Site:

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Income will be temporarily derived from the employment created during the construction phase.	The impact is positive as it improves the standard of living for the benefitting households.	The impact will occur from local to national levels.	None identified.

Description of expected significance of impact

Per capita income in the eMalahleni LM is ranked higher than the Nkangala DM's average annual household income and the second-highest in the Mpumalanga Province. However, the average monthly income of resident within eMalahleni remains low. Furthermore, the manufacturing sector has seen decreases in growth and therefore employment opportunities in this sector will lead to an increase in household income for those involved in this sector. This impact may thus be of medium significance (positive) due to the temporary income earned by employees.

Gaps in knowledge and recommendations for further study

The employment to be created locally and at other scales information required.
The total amount to be sent on labour during construction is required.
The duration of employment information required.

5.2 Operational phase impacts to be considered

Impact

Sustainable increase in production and GDP-R of the national and local economies due to operations expenditure.

Desktop Sensitivity Analysis of the Site:

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Increase in production and GDP-R of national and local economies.	A positive impact to production and GDP-R due to operational expenditure.	The scale of the impact is from local to national.	None identified.

Description of expected significance of impact

The eMalahleni LM has a comparative advantage in the manufacturing sector and the sector remains an important contributor the overall economy in the municipality. However, manufacturing has seen a decrease (-0.4%) in GVA between 2010 and 2019. The development of the processing plant in the Highveld Steel complex may therefore see an increase in the size of the local economy due to the contributions from the plant.

This impact will possibly be of medium to high significance (positive) due to the long-term of benefits and the size of operational expenditure, which will further improve the GDP of eMalahleni LM.
Gaps in knowledge and recommendations for further study Data regarding operational expenditure, local content, and its breakdown per industry are required. Duration of operation phase information required.

Impact

Long-term employment creation in local communities and elsewhere in the country.

Desktop Sensitivity Analysis of the Site:

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
It involves the creation of direct, indirect and induced opportunities related to the operation of the proposed coal-fired power plant and facilities.	A positive impact on job creation will occur as a reduction in unemployment as a result of the operation of the power plant, will take place.	The impact will occur from local to national levels.	None identified.

Description of expected significance of impact

As of 2019, the unemployment rate in the eMalahleni LM is 30.3%. As one of the goals of the development of the waste recovery plant in the Highveld Steel complex is the creation of job opportunities, the eMalahleni LM will provide an opportunity for unemployed individuals to be absorbed into the workforce of the proposed plant. The development of other businesses within the Highveld Steel complex has previously seen over 300 workers who had been previously retrenched in the complex finding employment in these new businesses. As such, a similar result is expected from the development of the new plant. The impact may have medium significance (positive) due to the sustainability of the potentially notable number of jobs to be created.

Gaps in knowledge and recommendations for further study

The employment that will be created locally and at other scales are required.
The duration of employment information required.

Impact

Skills development due to the creation of employment opportunities

Desktop Sensitivity Analysis of the Site:

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Skills will be created and/or enhanced during the	The impact is positive as it develops skills that	The impact will occur from local to national levels.	None identified.

operations phase for employees.	can be used in similar projects in future.		

Description of expected significance of impact

Approximately 62% of workers in the eMalahleni LM are semi-skilled, while 21% are considered low-skilled workers. The employment opportunities which may arise due to development of the waste recovery plant will enable these individuals to acquire new skills or enhance their existing skillset. Individuals who will be absorbed into the labour supply at the plant will therefore have higher future prospects. This impact will be of medium significance (positive) due to the long-term benefits associated with skills development.

Gaps in knowledge and recommendations for further study

Skills development programmes to be implemented during the operations phase.

Impact

Household income will improve the standard of living for households directly or indirectly benefitting from employment opportunities.

Desktop Sensitivity Analysis of the Site:

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Income will be derived from the sustainable employment created during the operations phase.	The impact is positive as it improves the standard of living for the benefitting households for a sustainable period.	The impact will occur from local to national levels.	None identified.

Description of expected significance of impact

Given the availability of new employment opportunities, this impact may be of medium significance (positive) due to the long-term income earned by employees.

Gaps in knowledge and recommendations for further study

The employment to be created locally and at other scales information required.
The duration of employment information required.

Impact

Increase in government revenue stream due to payroll taxes and income taxes

Desktop Sensitivity Analysis of the Site:

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Payroll and income taxes during operations will increase	The impact is positive as it will increase municipal and national fiscal	The impact will occur at the municipal and national levels.	None identified.

government revenue.	revenue which can be used to the benefit of society.		

Description of expected significance of impact

It is expected that local and national governments will see an increase in income through the increase in rates and taxes (on a local level) and income and business taxes (on a national level) due to the operations of the plant. The impact may be of medium significance (positive) due to the long-term nature of the impact and the revenue to be derived by local and national government spheres.

Gaps in knowledge and recommendations for further study

The duration of operations and the rates and taxes to be paid during operations.

Impact

Derivation of value from existing industrial waste

Desktop Sensitivity Analysis of the Site:

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
The proposed project will derive value from existing industrial waste through the extraction of minerals from slag.	The impact is positive as it will reduce industrial waste.	The impact will occur at the municipal level but will have a country-wide benefit.	None identified.

Description of expected significance of impact

The project provides for an opportunity to reduce industrial waste generated by Highveld Steel. Depending on the size of the project relative to the waste generated from smelting activities, the potential significance could be between medium to high.

Gaps in knowledge and recommendations for further study

The information about the project, the amount of waste to be processed and reduced relative to historic trends, the usage of the derived mineral extracts, the hazardous nature of waste, etc.

5.3 Cumulative impacts to be considered

Impact

Improved overall mineral utilisation in the country

Desktop Sensitivity Analysis of the Site:

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
The proposed project will contribute to improving overall mineral utilisation in the country.	The impact is positive as it will contribute to the overall improvement of efficient use of finite resources.	The impact will occur at the municipal level but will have a country-wide benefit.	None identified.

Description of expected significance of impact

The project provides for an opportunity to reduce industrial waste and improve the efficiency of the mineral resources extracted from the mineral reserves that South Africa is endowed with. Depending on the size of the project relative to the waste generated from smelting activities, the potential significance could be between medium to high.

Gaps in knowledge and recommendations for further study

The information about the project, the amount of waste to be processed and reduced relative to historic trends, the usage of the derived mineral extracts, the hazardous nature of waste, etc.

Impact

Reverse of negative trends in local manufacturing activities in relation to employment and GDP-R

Desktop Sensitivity Analysis of the Site:

No sensitivity identified.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
The manufacturing sector in the local municipalities have been shrinking resulting in job shedding. A holistic approach to the revitalisation of the manufacturing activities along its value chain is required to assist in a sector-wide turnaround.	The impact is positive as the project with possible other related and synergetic activities will assist in re-positioning and revitalising the local heavy and mining industries.	The impact will occur at the municipal and national levels.	None identified.

Description of expected significance of impact

The proposed project is expected to contribute to the diversification of the manufacturing value chain located in the eMalahleni LM, which has been identified to be one of the priorities for the municipality. Furthermore, as mentioned earlier, the Mpumalanga Industrial Development Plan (2016) proposes the establishment of Mining and Metals Industrial Centre of Competence in the region of eMalahleni and Middleburg, where the proposed project is to be located. Although not located in the technology park designed for the Centre of Competence, the proposed project will increase the concentration of related activities in the area, which could aid in the positioning of the area as a region of technological advancements in the sphere of mining and mineral beneficiation.

Gaps in knowledge and recommendations for further study

Recent and planned investments into mineral beneficiation and manufacturing activities in the area. The current developments in relation to the Mining and Mineral Centre of

Excellence in the region and other envisaged plans for the industrial areas in the municipality.

6. CONCLUSION

Fodere Titanium proposes to develop a small industrial waste recovery plant to process slag from Highveld Steel to extract vanadium and titanium oxides, aluminium as aluminium oxide (Al_2O_3), magnesium as magnesium oxide (MgO) and calcium as calcium sulphate/gypsum ($CaSO_4$). The proposed plant will be located in the Highveld Steel complex which is located in the eMalahleni LM in the Mpumalanga Province will therefore be developed in an existing industrial area.

The review of key national, provincial and local policy documents indicates that the development of the plant is supported at all levels from a socio-economic perspective. The promotion of the manufacturing sector has been identified as a key area of priority across the documents which were assessed. Furthermore, the creation of jobs due to the development of the plant and the contribution of the plant to a zero-waste society is directly in line with the identified policy documents. After considering the reviewed documentation, no fatal flaws or contraventions from a socio-economic policy perspective exist for the implementation of the proposed project.

The eMalahleni LM is considered to be the economic hub of the Mpumalanga province and contributes substantially to the provinces GDP-R. The municipality has a comparative advantage in terms of mining, manufacturing and utilities; however, the CAGR indicates that the manufacturing sector has seen a contraction of 0.4% between 2010 and 2019. The development of this sector may be pertinent to the further development of the local municipality and the province as a whole. The unemployment rate in the eMalahleni LM is lower than the provincial and district average but remains high at 30.3%. Furthermore, a large proportion of households within the eMalahleni LM earn between R0 and R3 200 a month.

The above suggests that the economy can utilise the investment to diversify its economic base and lead to the improvement of standards of living among local households through the increased income levels and access to improved services, which can be achieved by raising the local municipality's revenue base through taxes and rates paid by new businesses. The proposed project is therefore likely to create a positive impact on the local economic development and the socio-economic environment in the municipality in general; however, some negative effects associated with the influx of people and migrant workers can be expected.

Overall, the **following impacts are envisaged to be investigated in greater detail during the EIA phase**. The list will be expanded upon receipt of further information gathered during the primary data gathering phase.

- During construction:
  - Increase in Production and GDP-R of the national and local economies due to capital expenditure
  - Temporary employment creation in local communities and elsewhere in the country

- Skills development due to the creation of new employment opportunities
- Household income will lead to the improved standard of living for households directly or indirectly benefitting from employment opportunities

» During operations:
- Sustainable increase in Production and GDP-R of the national and local economies due to operations expenditure
- Long term employment creation in local communities and elsewhere in the country
- Skills development due to the creation of employment opportunities
- Household income will improve the standard of living for households directly or indirectly benefitting from employment opportunities
- Increase in government revenue stream due to payroll taxes and income taxes
- Derivation of value from existing industrial waste

» Cumulative impacts:
- Improved overall mineral utilisation in the country
- Reverse of negative trends in local manufacturing activities in relation to employment and GDP-R

During the EIA phase, the following **approach (Plan of Study) to the assessment of socio-economic impacts will be followed**:

1. Review of comments and feedback received on the scoping report from the Interested and Affected Parties (I&APs)
2. Determine the approach towards addressing the received comments, i.e. additional data collection or inclusion of the identified issues in the analysis during the EIA phase
3. Undertake a site visit and collect primary data, where required
4. Amend the baseline information based on the collected information
5. Gather project data from the client and undertake economic impact modelling exercise
6. Analyse, and where possible, quantify the potential socio-economic impacts ensuring that all issues and impacts raised by the I&APs are addressed
7. Assess cumulative effects of the project
8. Rate the impacts according to the methodology supplied by the environmental specialist applicable to the EIA phase
9. Formulate the mitigation plan
10. Produce the report for the submission to the authorities and review by the I&APs
11. Obtain comments from I&APs on the submitted report and amend it accordingly responding to the comments and issues raised, if applicable

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