Appendix M

SOCIAL STATEMENT

MEMO

TO	Ashlea Strong	**FROM**	Tumelo Mathulwe
DATE	**19 November 2024**	**CONFIDENTIALITY**	**Public**
SUBJECT	**SOCIAL SPECIALIST STATEMENT ON THE POTENTIAL CHANGE IN SOCIAL IMPACTS DUE TO THE AMENDMENTS TO THE ESKOM KOMATI PV AND BESS PROJECT**		

INTRODUCTION

WSP Group Africa (Pty) Ltd. (WSP) was appointed by Eskom Holdings SOC (Ltd) (Eskom) to undertake an Environmental Impact Assessment (EIA) process for the proposed 100MW Solar Photovoltaics (PV) Energy Facility (SEF), 150 MW Battery Energy Storage System (BESS) and associated infrastructure at the Komati Power Station located in the Mpumalanga Province, South Africa (Figure 1). As part of the EIA process, a Social Impact Assessment Specialist Study was undertaken (WSP, 2023). The Project has since been amended to include changes to the site layout. This technical memorandum evaluates the changes made and provides a statement of whether previous impacts evaluated as per the previous Social Impact Assessment (WSP, 2023) are still valid for the Project.

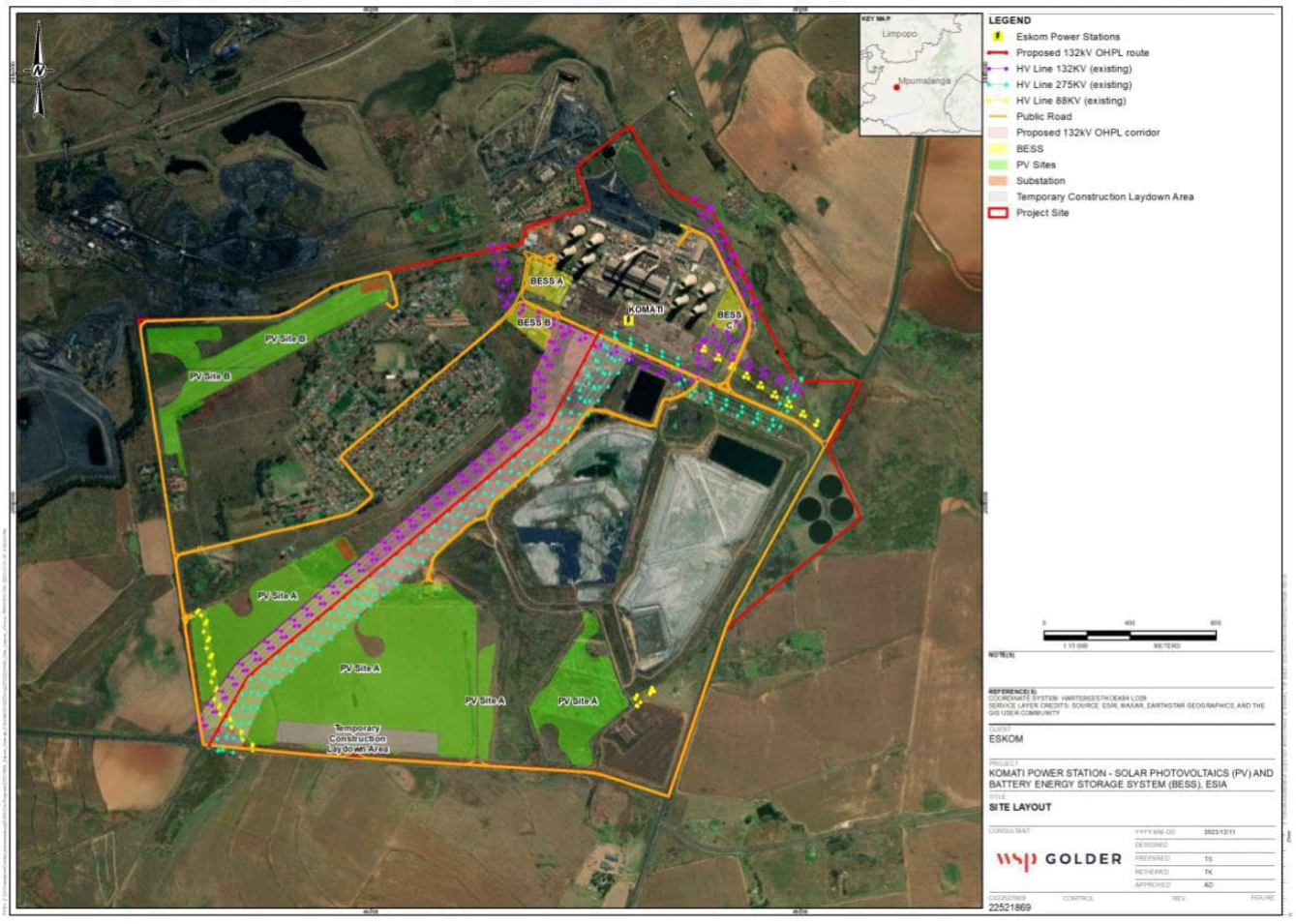

Figure 1: Currently Approved Project Infrastructure

STATEMENT ON SOCIAL IMPACTS DUE TO AMENDMENTS

Sensitivity

It is noted that the following changes to the Komati Solar PV and BESS Project are being proposed for the amendment process (Figure 2):

1. Extension of the BESS Area A.
2. Removal of the approved on-site substations in PV Site A and PV site B.
3. Proposed development of four new on-site substations (two in PV Site A and two in PV Site B) and associated overhead and underground cabling (capacity 33 kV).
4. Removal of the approved 132 kV grid connection.

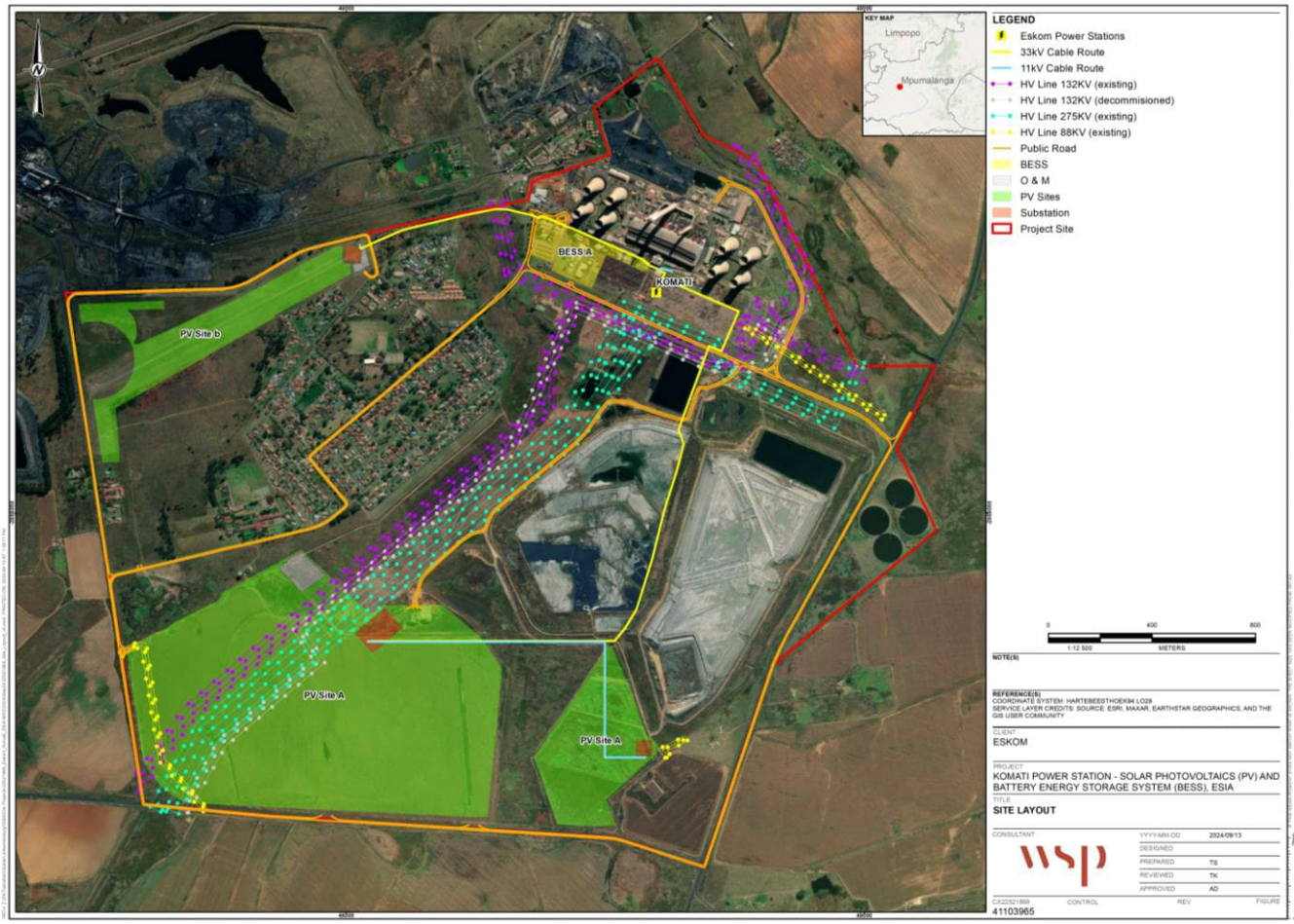

Figure 2: Proposed Amended Infrastructure Layout

Although there are changes in the project layout, the project boundary remains the same, and thus the identified sensitive receptors remain the same (Figure 3).

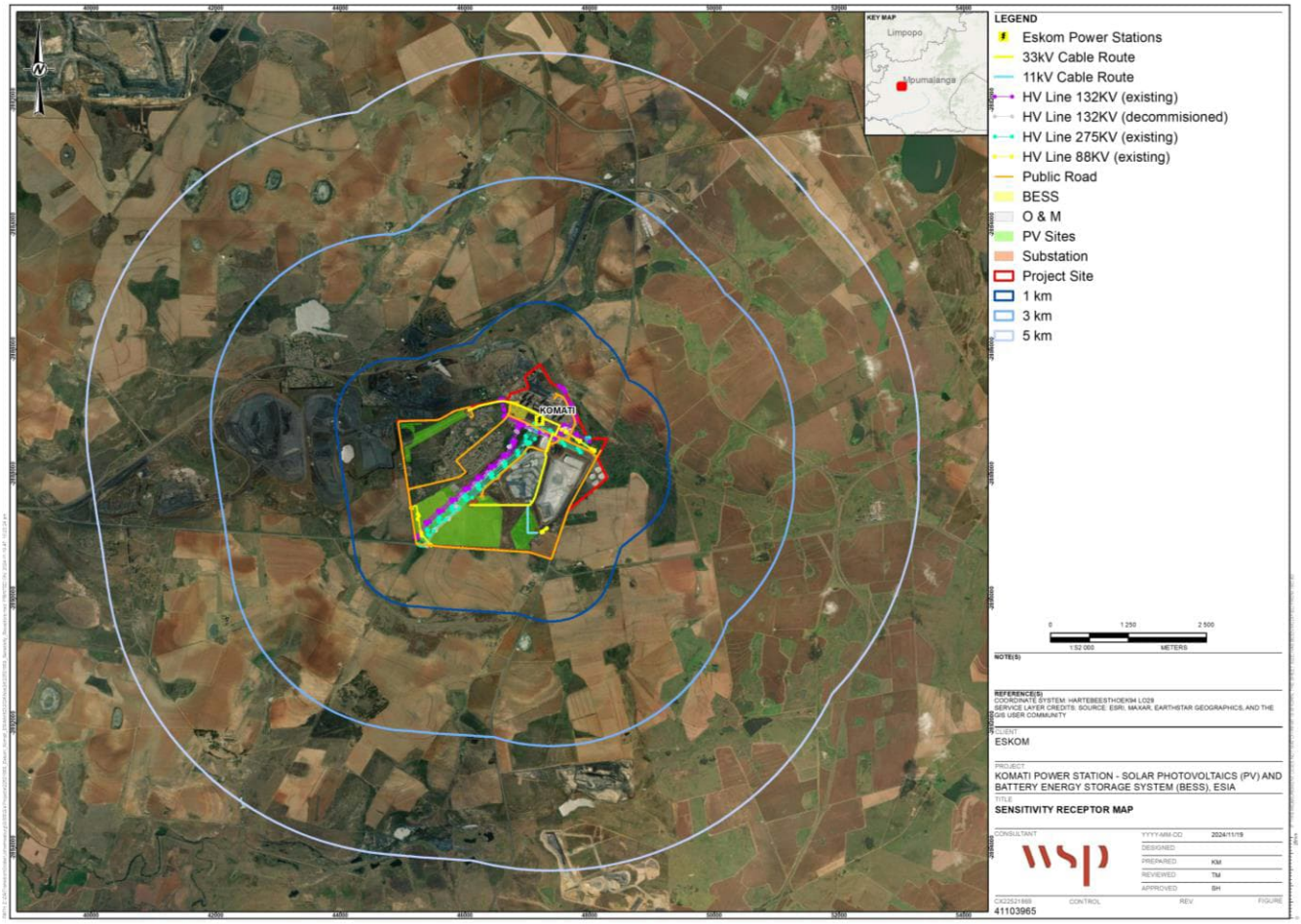

Figure 3: Site Sensitive Receptors

Impact Statement

The proposed amendments to the projects will not change any of the identified social impacts. Therefore, the previously identified impacts are still relevant, with no additional impacts triggered due to the amendments.

Cumulative Impact

With the country's need for stable electricity growing constantly, it is envisioned that similar renewable energy projects will be proposed in the surrounding area, aiming to use the energy grid infrastructure at the Komati Power Station.

There are two similar projects located within 30 km of the proposed Project. One of the projects is envisioned to loop into the current infrastructure at the Duvha Power Station, as it is a solar photovoltaic power plant at the Duvha Power Station.

The impacts of this Project on the Duvha community are likely similar to the ones discussed in this study for the Komati Solar Photovoltaic and Battery Energy Storage System project. The anticipated cumulative social impact is expected to be low.

The proposed solar facility for Forzando North Coal Mine is to be located at one of two alternative locations, approximately 15 km away and 18 km away. Alternative 1 is located between the Komati Power Station

(approximately 15km away) and the Kriel and Matla Power Stations, approximately 18 km and 23 km from the proposed Project. It is assumed that the proposed Project will connect to the national electricity grid at the Komati Power Station, which is the closest.

The cumulative impact of these projects will be because of the power lines looping into the Komati Power Station. Given the numerous powerlines currently emanating from the Power Station, the anticipated social impact of these projects is expected to be low.

CONCLUSION

The development of the proposed Komati Solar Photovoltaic and Battery Energy Storage System aligns with legislative and policy frameworks. The Project will create employment, training, and business opportunities during the construction and operation. The potential negative impacts of the construction and operation phases can be mitigated.

The proposed development will also represent an investment in clean, renewable energy infrastructure for the country, which will offset the negative environmental and socio-economic impacts of coal-based fossil fuel energy generation. Renewable energy also addresses climate change and assists the country in meeting its climate change reduction goals.

If mitigation measures are implemented, it is anticipated that the consequence and probability of the negative impacts identified will be reduced. Given the above, it is strongly recommended that the mitigation measures described in the Social Impact Assessment (WSP,2023) report be incorporated into the proposed Project's Environmental and Social Management Plan. Additionally, measures must be put in place to monitor and assess the implementation of these mitigation measures and take corrective action where necessary.

Mathulwe, Tumelo
(ZATM05158)
2024.11.21
07:31:17 +02'00'

Tumelo Mathulwe
Senior Consultant

Eskom Holdings SOC Ltd

THE PROPOSED SOLAR PHOTOVOLTAIC AND BATTERY ENERGY STORAGE SYSTEM AT KOMATI POWER STATION

Social Impact Assessment

APRIL 2023

PUBLIC

Eskom Holdings SOC Ltd

THE PROPOSED SOLAR PHOTOVOLTAIC AND BATTERY ENERGY STORAGE SYSTEM AT KOMATI POWER STATION

Social Impact Assessment

TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 41103965

DATE: APRIL 2023

Eskom Holdings SOC Ltd

THE PROPOSED SOLAR PHOTOVOLTAIC AND BATTERY ENERGY STORAGE SYSTEM AT KOMATI POWER STATION

Social Impact Assessment

WSP

Building 1, Maxwell Office Park
Magwa Crescent West, Waterfall City
Midrand, 1685
South Africa

Phone: +27 11 254 4800

WSP.com

QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	Final			
Date	May 2023			
Prepared by	Tumelo Mathulwe			
Signature	Mathulwe, Tumelo (ZATM05158) 2023.07.03 13:50:51 +02'00'			
Checked by	Stephen Horak			
Signature				
Authorised by	Dr David de Waal			
Signature				
Project number	41103965			
Report number				
File reference				

CONTENTS

TABLES

FIGURES

APPENDICES

No table of contents entries found.

Abbreviation	Definition
DSD	Dead Stop Date
EIA	Environmental Impact Assessment
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESS	Environmental and Social Standards
FGM	Focus Group Meeting
GPN	Good Practice Note
GBV	Gender Based Violence
GW	Giga Watt
I&AP	Interested and Affected Parties
IDP	Integrated Development Plans
IPAP	Industrial Policy Action Plan
IRP	Integrated Resource Plan
MSDF	Mpumalanga Spatial Development Framework

NDM	Nkangala District Municipality
NDP	National Development Plan
NEMA	National Environmental Management Act
NGP	New Growth Parth
POWA	People Opposing Woman Abuse
PV	Photovoltaic
REIPPPP	Renewable Energy Independent Power Producer Programme
SAPS	South African Police Service
SIA	Social Impact Assessment
STLM	Steve Tshwete Local Municipality

1 INTRODUCTION

Eskom has commissioned WSP to undertake the environmental permitting processes required to repurpose the Komati Power Station in Komati, Mpumalanga. The following sections provide the project description, World Bank and South African legislative requirements, screening impact assessment, and terms of reference for the Environmental Impact Assessment (EIA) phase of the Social Impact Assessment (SIA).

2 PROJECT DESCRIPTION

Eskom is proposing the establishment of a solar electricity generating facility and associated infrastructure as part of its repurposing programme for the Komati Power Station. The plan is to install 100MW of Solar Photovoltaics (PV) and a 150MW Battery Energy Storage System. The parcels of land for the proposed development are provided in **Figure 2-1** below. Eskom owns the identified parcels of land.

2.1 PROJECT LOCATION

The Komati Power Station is approximately 37km from Middelburg, 43km from Bethal and 40km from Emalahleni, via Vandyksdrift in the Mpumalanga Province of South Africa. The GPS coordinates for the power plant are 26.0896668 S, and 29.4655907 E. The station has nine units, five 100MW units on the east (Units 1 to 5) and four 125 MW units on the west (Units 6 to 9), with a total installed capacity of 1000 MW. Its units operated on a simple Rankine Cycle without reheat and with a low superheat pressure, resulting in a lower thermodynamic efficiency (efficiency up to 27%). Komati Units are small and have a higher operating and maintenance cost per megawatt generated than newer stations. Komati Power Station will reach its end-of-life expectancy in September 2022, when Unit Nine will have reached its dead stop date (DSD). Units 1 to 8 have already reached their DSD (Eskom, 2022).

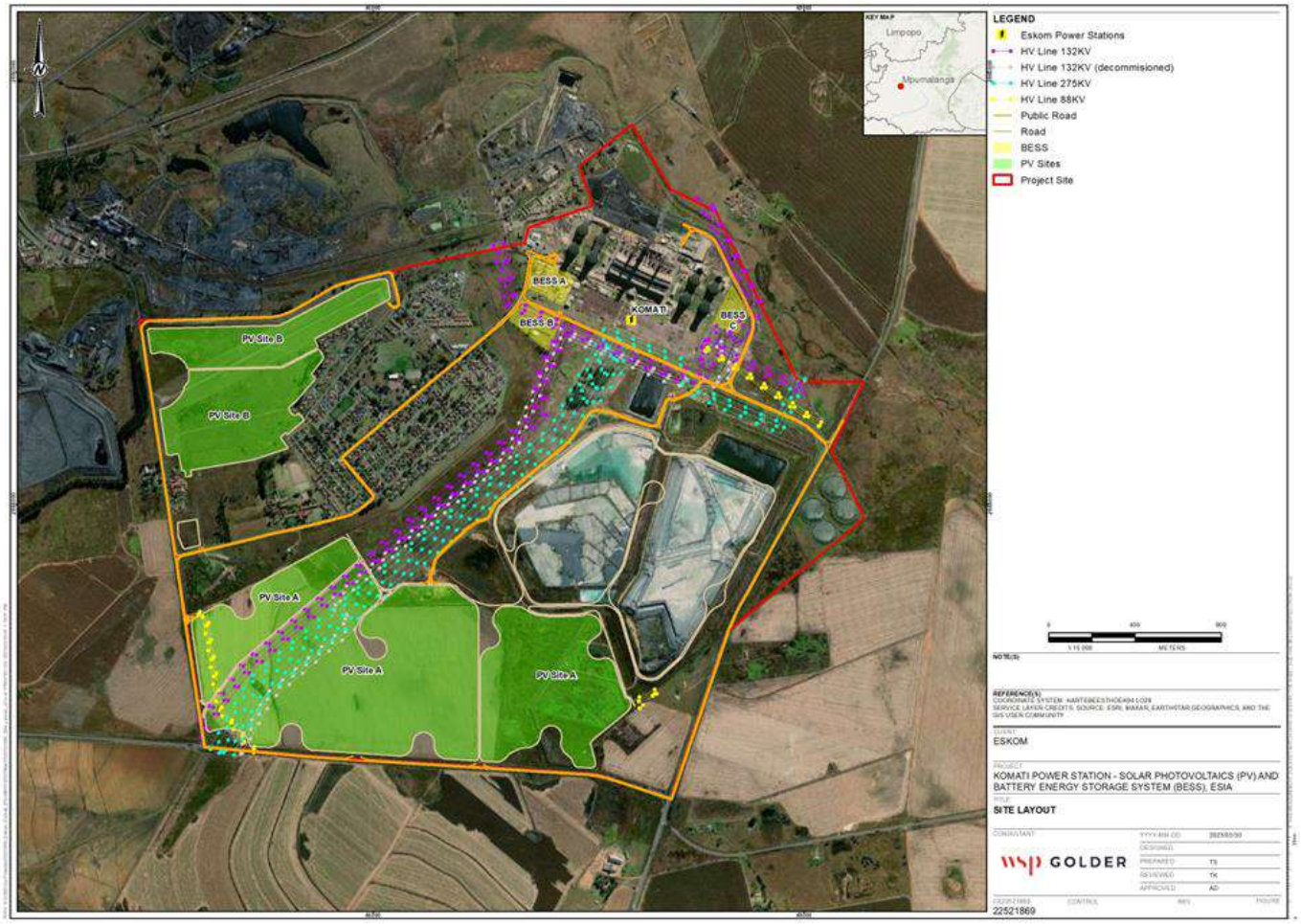

Figure 2-1 – Locality map

3 SOCIAL IMPACT ASSESSMENT METHODOLOGY

3.1 DATA COLLECTION

To understand the socio-economic baseline conditions of the project-affected areas and the socio-economic implications of the proposed project to the receiving environment, WSP conducted secondary desktop data collection (desktop review) and primary data collection as part of the stakeholder consultation process. These two methods are elaborated further in the following sections.

3.1.1 DESKTOP REVIEW

WSP reviewed available documents to obtain information regarding the socio-economic conditions in the study area. The documents reviewed include the following:

- IDPs and Spatial Development Frameworks of the affected local and district municipalities.
- Socio-economic and demographic statistics (sourced from Statistics South Africa's 2011 census data, municipal report, provincial data, and the 2016 community survey).
- Documents concerning the proposed project, which included the project description document,
- Social impact assessments are undertaken for the closure of the Komati Power Station.
- Available maps and satellite imagery.

3.1.2 PRIMARY RESEARCH

WSP consulted with interested and affected parties (I&AP) during the scoping phase of the project.

A Focus Meeting (FGM) was held on 09 June 2022 at the Eskom Komati SBSS Conference Room. In addition, the draft scoping report was made available for public review for 30 days. All issues, questions, concerns, and suggestions for enhanced benefits raised by I&APs have been captured in the Comment and Response Report. The information derived from the meeting minutes was used to understand better the stakeholder's concerns, issues, and expectations. This process formed part of the primary research process.

The main issues raised by participants at the meeting were:

- Where would the labour for the project be sourced?
- What skills will be required when construction commences?
- Local businesses and contractors should be used during the construction and maintenance of the Solar Photovoltaics and Battery Energy Storage System.

4 WORLD BANK AND SOUTH AFRICAN LEGISLATIVE REQUIREMENTS

The legislation related to the project aids in identifying and assessing the associated potential impacts. This section identifies the documentation reviewed as part of the assessment process.

4.1.1 WORLD BANK BORROWER REQUIREMENTS

The World Bank Environmental and Social Framework sets out the mandatory requirements for projects seeking funding from the Bank. This framework aims to ensure that the Borrower (Eskom)

assesses and manages the environmental and social risks and impacts associated with the project and, where possible, minimises the project's impact. The framework is underpinned by the Environmental and Social Standards (ESS) and, in particular, ESS1, which set out the requirements for borrowers to identify and assess environmental and social risks and impacts associated with projects supported by the Bank through Investment Project Financing.

The objectives of the ESS1 are:

- To identify, evaluate, and manage the project's environmental and social risks and impacts in a manner consistent with the ESSs.
- To adopt a mitigation hierarchy approach to:
  a) Anticipate and avoid risks and impacts;
  b) Where avoidance is not possible, minimise or reduce risks and impacts to acceptable levels;
  c) Once risks and impacts have been minimised or reduced, mitigate; and
  d) Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.
- To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project.
- To utilise national environmental and social institutions, systems, laws, regulations, and procedures to assess, develop, and implement projects whenever appropriate.
- To promote improved environmental and social performance in ways which recognise and enhance Borrower capacity. (World Bank, 2018)

4.1.2 THE CONSTITUTION OF SOUTH AFRICA

The Constitution in Section 151 states that local government should provide a democratic and accountable government for communities. It also encourages municipalities to ensure the provision of services to communities sustainably to promote social and economic development. The local government must promote a safe and healthy environment and encourage community involvement in local government matters.

Table 4-1 - Aspects of the South African Constitution Applicable to SIA

Regulation	Description
Section 24 of the Constitution	Everyone has the right. a) to an environment that is not harmful to their health or well-being being; and b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that: i. prevent pollution and ecological degradation. ii. promote conservation; and iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

4.1.3 NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (NEMA) (ACT NO 107 OF 1998)

According to NEMA, sustainable development requires the integration of social, economic, and environmental factors in the planning, implementation, and evaluation of decisions to ensure that development serves present and future generations. NEMA also sets out the process for public participation.

4.1.4 NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT (ACT 39 OF 2004)

This act advocates for enhancing and protecting air quality in the country. Future projects should refrain from contributing to air pollution and ecological degradation. It also promotes justifiable economic and social development while securing ecologically sustainable development.

4.1.5 NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT (ACT 59 OF 2008)

The Act ensures that future interventions protect the affected communities' health, well-being and environment. It seeks to increase awareness of the impact of waste on the health, well-being and environment of affected communities.

4.1.6 NATIONAL WATER ACT (ACT 36 OF 1998)

The National Water Act ensures that projects and future interventions maintain water resources' capability to meet basic human needs. And seeks to maintain equitable access to water and the efficient, sustainable, and beneficial use of water. Future developments must reduce and prevent the pollution and degradation of water resources.

4.1.7 NATIONAL ENERGY ACT (ACT NO. 34 OF 2008)

The Electricity Regulation Act gives the Minister of Energy the power to determine the need for new generation capacity and to take the initiative for its procurement. It also states that one needs a generation licence to produce over one megawatt of electricity.

The Act aims to strengthen energy planning in the Electricity Regulation Act (Act No. 4 of 2006), Second Amendment (2011). The Act gives the Minister of Energy power to determine new generation capacity and approve the generation and procurement of electricity. A licence for generation capacity is subject to ministerial approval. The Electricity Regulations on new generation capacity were amended in 2015. This amendment provides for renewable energy power generation, including PV generation.

4.1.8 NATIONAL DEVELOPMENT PLAN

The National Development Plan (NDP) seeks to eliminate poverty and reduce inequality by 2030. The NDP aims to achieve its goal by growing an inclusive economy, building capabilities, enhancing the state's capacity, and promoting leadership and partnerships throughout society. A key focus of the NDP is the country's ability to return to a state of continuous and uninterrupted electricity supply. This was to be achieved by increasing the electricity generation reserve margin from 1% (2014) to 19% in 2019, requiring the development of 10 Giga Watt (GW) of additional electricity capacity by 2019 against the 2010 baseline of 44GW. Five of the 10 GW were to be sourced from renewable energy sources, with a 2GW to be operational by 2020. The NDP aims to acquire 2GW of renewable energy in efforts to move the country to less carbon reliant means of energy production by 2030.

4.1.9 NEW GROWTH PATH FRAMEWORK

The New Growth Path framework sets out the framework for economic policy and the drivers for creating jobs in the South African economy. The New Growth Path (NGP) targeted 5 million new jobs by 2020. It also aimed for 300,000 additional direct jobs by 2020 to green the economy. The framework identifies investments in five key areas: energy, transport, communication, water and housing. High levels of public investment in these areas will create jobs in infrastructure construction, operation and maintenance. The New Growth Path identifies five other priority areas in the programme to create job partnerships between the state and the private sector. The green economy will include expansions in construction and the production of technologies for solar, wind and biofuels as supported by the draft Energy on Integrated Resource Plan. There is potential for renewable energy generation to provide for some of these 300 000 jobs and to provide green power to the economy to generate additional jobs (State Employment of Renewable Energy in South Africa, 2015).

4.1.10 INDUSTRIAL POLICY ACTION PLAN (IPAP)

The Department of Trade and Industry drives the IPAP. The IPAP is an annually updated, three-year rolling plan for industrial policy implementation; since 2011, it has specifically identified the energy sector (solar and wind energy); as a priority for the country's industrial sector (2014). In its review report, the following was reported in terms of the progress made in the green economy, specifically reporting on the Renewable Energy Independent Power Producer Programme (REIPPPP) programme, stating that this has proved an extraordinarily successful green economy project, attracting investment to the value of R201.8 billion, contributing 3,162 MW of electricity generation capacity and mandating South African entity participation of 40% (IPAP 2018/19-2020/21).

4.1.11 INTEGRATED RESOURCE PLAN 2019

The Integrated Resource Plan (IRP) is an electricity infrastructure development plan based on the least-cost electricity supply and demand balance, considering the security of supply and the environment to minimise harmful emissions and water usage. The first plan was promulgated in March 2011. The plan is a living plan and was last updated in 2019.

The 2019 report indicates that a total of 6 422 MW under the REIPPP has been procured, with 3 876 MW operational and made available to the grid. The current base from wind was 1 980 MW in 2018. By 2030, this will be 17 742 MW, the highest of all renewable energy sources. The next closest is PV Solar 8 288, but coal will still dominate in 2030 with 333 64 MW.

Table 4-2: Draft IRP 2018

	Coal	Nuclear	Hydro	Storage (Pumped Storage)	PV	Wind	CSP	Gas / Diesel	Other (CoGen, Biomass, Landfill)	Embedded Generation
2018	39 126	1 860	2 196	2 912	1 474	1 980	300	3 830	499	Unknown
2019	2 155					244	300			200
2020	1 433				114	300				200
2021	1 433				300	818				200
2022	711				400					200
2023	500									200
2024	500									200
2025					670	200				200
2026					1 000	1 500		2 250		200
2027					1 000	1 600		1 200		200
2028					1 000	1 600		1 800		200
2029					1 000	1 600		2 850		200
2030			2 500		1 000	1 600				200
TOTAL INSTALLED	33 847	1 860	4 696	2 912	7 958	11 442	600	11 930	499	2600
Installed Capacity Mix (%)	44.6	2.5	6.2	3.8	10.5	15.1	0.9	15.7	0.7	

Installed Capacity
Committed / Already Contracted Capacity
New Additional Capacity (IRP Update)

However, the 2019 report also states that build limits on renewables (wind and solar) will remain in place until the following review limiting the development of new renewable energy build projects. Imposing annual build limits on renewables for the period up to 2030 does not affect the capacity from wind or solar PV in any significant way.

4.1.12 NATIONAL SPATIAL DEVELOPMENT PERSPECTIVE

According to the National Spatial Development Perspective, spatial development should, where appropriate, accommodate and promote private economic ventures, which can aid sustainable economic growth, relieve poverty, increase social investment, and improve service delivery. Consequently, municipal-level spatial planning has been considered where relevant.

4.1.13 SPATIAL PLANNING AND LAND USE MANAGEMENT ACT (ACT 16 OF 2013)

The Act seeks to ensure that projects maintain progress in promoting social and economic inclusion. Future interventions should promote the efficient and sustainable use of lainterventionsons and contribute towards redressing equity concerns in the affected communities through land-use management systems.

4.1.14 MPUMALANGA SPATIAL DEVELOPMENT FRAMEWORK

The Mpumalanga Spatial Development Framework (MSDF) emanates from the SPLUMA. It outlines the role of transparent developmental, regulatory land and development management.

The MSDF plans to explore the possibility of renewable energy generation. It intends to use land with low agricultural potential and unused for renewable energy production, namely solar and wind

(Department of Cooperative Governance and Traditional Affairs, Mpumalanga Provincial Government, 2019).

4.1.15 NKANGALA DISTRICT MUNICIPALITY INTEGRATED DEVELOPMENT PLAN

The Municipal Sysassess32 of 2000 requires municipal planning to be developmentally oriented and that municipalities undertake an integrated development planning process to produce Integrated Development Plans (IDP).

The IDP highlights the Nkangala District Municipality's (NDM) vision to "improve the quality of life for all." The NDM aims to accomplish its vision by aligning its priorities with the National Development Plan – Vision 2030 (NDP) (Nkangala District Municipality, 2021).

4.1.16 STEVE TSHWETE LOCAL MUNICIPALITY INTEGRATED DEVELOPMENT PLAN

The Steve Tshwete Local Municipality (STLM) strives to be the leading service delivery and governance municipality. It intends to achieve this through the following strategic goals:

1. Provision of sustainable and accessible essential services to all.
2. Provide a safe, healthy environment.
3. Promote economic growth and job creation.
4. Promote good governance, organisational development, and financial sustainability.

4.1.17 GPN - ADDRESSING SEXUAL EXPLOITATION AND ABUSE AND SEXUAL HARASSMENT (SEA/SH) IN INVESTMENT PROJECT FINANCING INVOLVING MAJOR CIVIL WORKS, 2020

This Good Practice Note (GPN) aims to assist Task Teams in identifying risks of Sexual Exploitation and Abuse (SEA)/ Sexual Harassment (SH) that can emerge in projects involving major civil works contracts – and to advise on how to manage such risks best.

The Environmental and Social Impact Assessment (ESIA) has identified the potential social impacts the project may have on women in the project-affected area and recommends measures to mitigate these potential impacts.

4.1.18 GPN - ADDRESSING GENDER-BASED VIOLENCE IN INVESTMENT PROJECT FINANCING INVOLVING MAJOR CIVIL WORKS, 2018

This GPN seeks to assist Task Teams in establishing an approach to identify risks of gender-based violence, in particular SEA and SH, that can emerge in Investment Project Financing with major civil works contracts and to advise accordingly on how to best manage such risks.

The GPN builds on World Bank experience and good international industry practices, including those of other development partners. While World Bank Task Teams are the primary audience, the GPN aims to contribute to a growing knowledge base.

The ESIA identifies the potential social impacts that the project may have on women in the project-affected area.

4.1.19 GPN – GENDER, 2019

To address constraints cited in many economies as impediments to closing these gaps, such as occupational sex segregation, with women and girls often streamed into lower-paying, less secure

fields of study and work; high rates of unpaid work by women; lack of safe, affordable transportation; high prevalence of gender-based violence and, more specifically, of SEA/SH in workplaces; lack of clear land and housing ownership and tenure security, wherein women's rights tend to be informal so that they are at greater risk of being displaced from land and other asset ownership; and inadequate investment in and prioritisation of care services, from early childhood to old age.

The strategy sets out to help countries address challenges such as maternal mortality while also considering emerging challenges such as ageing populations, climate change, fragility, conflict, violence, and slowing economic growth.

The ESIA will identify the potential social impacts that the project may have on the health and well-being of women in the project-affected area. It also assesses the possible effects on the social standing and benefits from the project.

There will be no physical or economic displacement due to the project.

4.1.20 GPN - ROAD SAFETY, 2019

The Environmental and Social Framework (ESF) road safety requirements are defined in ESS four. The following objective is applicable:

- To identify, evaluate and monitor the potential traffic and road safety risks to workers, affected communities and road users throughout the project life-cycle and, where appropriate, will develop measures and plans to address them. The Borrower will incorporate technically and financially feasible road safety measures into the project design to prevent and mitigate potential road safety risks to road users and affected communities.
- To undertake a road safety assessment for each phase of the project, and will monitor incidents and accidents, and prepare regular reports of such monitoring. The Borrower will use the reports to identify negative safety issues and establish and implement measures to resolve them.
- To put in place appropriate processes, including driver training, to improve driver and vehicle safety and systems for monitoring and enforcement. The Borrower will consider the safety record or rating of vehicles in purchase or leasing decisions and require regular maintenance of all project vehicles.
- To take appropriate safety measures to avoid incidents and injuries to members of the public associated with the operation of construction equipment.

The impacts on traffic and general road safety in the project-affected area will be assessed in the ESIA.

4.1.21 GPN - ASSESSING AND MANAGING THE RISKS AND IMPACTS OF THE USE OF SECURITY PERSONNEL, 2018

To assess and manage potential environmental and social risks and impacts arising from projects.

The health and safety, and security of communities are assessed and considered in the ESIA.

4.1.22 GPN - ASSESSING AND MANAGING THE RISKS OF ADVERSE IMPACTS ON COMMUNITIES FROM TEMPORARY PROJECT INDUCED LABOUR INFLUX, 2016

To assist in identifying and managing risks to and impacts on local communities related to the influx of labour that typically results from construction works.

The potential impacts of the influx of labourers and labour seekers will be assessed in the ESIA.

4.1.23 FREEDOM OF ASSOCIATION AND PROTECTION OF THE RIGHT TO ORGANISE CONVENTION, 1948 (NO. 87)

Without distinction, workers and employers shall have the right to establish and, subject only to the rules of the organisation concerned, to join organisations of their choosing without previous authorisation.

The right to associate is enshrined in the constitution of South Africa.

Eskom will adhere to the International Labour Organisation Conventions, which have been ratified by South Africa.

4.1.24 RIGHT TO ORGANISE AND COLLECTIVE BARGAINING CONVENTION, 1949 (NO. 98)

Workers' and employers' organisations shall enjoy adequate protection against any acts of interference by each other or each other's agents or members in their establishment, functioning or administration.

The right to collectively bargain is enshrined in the constitution of South Africa.

Eskom will adhere to the International Labour Organisation Conventions, which have been ratified by South Africa

4.1.25 FORCED LABOUR CONVENTION, 1930 (NO. 29)

It aims to suppress forced or compulsory labour in all its forms within the shortest possible period.

The constitution of South Africa states that no one may be subjected to slavery, servitude or forced labour.

Eskom will adhere to the International Labour Organisation Conventions, which South Africa has ratified.

4.1.26 ABOLITION OF FORCED LABOUR CONVENTION, 1957 (NO. 105)

Undertakes to suppress and not make use of any form of forced or compulsory labour-

a) As a means of political coercion or education or as a punishment for holding or expressing political views or views ideologically opposed to the established political, social or economic system;
b) As a method of mobilising and using labour for purposes of economic development;
c) As a means of labour discipline;
d) As a punishment for having participated in strikes;
e) As a means of racial, social, national or religious discrimination.

The constitution of South Africa states that no one may be subjected to slavery, servitude or forced labour.
Eskom will adhere to the International Labour Organisation Conventions, which South Africa has ratified.

4.1.27 MINIMUM AGE CONVENTION, 1973 (NO. 138)

Seeks to ensure the effective abolition of child labour and to progressively raise the minimum age for admission to employment or work to a level consistent with young persons' fullest physical and mental development.

The Basic Conditions of Employment Act in South Africa states that employing a child younger than 15 is a criminal offence.

Eskom will adhere to the International Labour Organisation Conventions, which South Africa has ratified.

4.1.28 WORST FORMS OF CHILD LABOUR CONVENTION, 1999 (NO. 182)

To secure the prohibition and elimination of the worst forms of child labour as a matter of urgency.

The Basic Conditions of Employment Act in South Africa states that employing a child younger than 15 is a criminal offence.

Eskom will adhere to the International Labour Organisation Conventions, which have been ratified by South Africa.

4.1.29 EQUAL REMUNERATION CONVENTION, 1951 (NO. 100)

To ensure the application to all workers of the principle of equal remuneration for men and women workers for work of equal value.

The Employment Equity Act states that no person may discriminate directly or indirectly against an employee based on race, gender, sex, pregnancy, marital status, family responsibility, ethnic or social origin, colour, sexual orientation, age, disability, religion, HIV status, conscience, belief, political opinion, culture, language and birth or any other arbitrary grounds.

Eskom will adhere to the International Labour Organisation Conventions, which have been ratified by South Africa.

4.1.30 DISCRIMINATION (EMPLOYMENT AND OCCUPATION) CONVENTION, 1958 (NO. 111)

To declare and pursue a national policy to promote equal opportunity and treatment regarding employment and occupation.

The Employment Equity Act states that no person may discriminate directly or indirectly against an employee based on race, gender, sex, pregnancy, marital status, family responsibility, ethnic or social origin, colour, sexual orientation, age, disability, religion, HIV status, conscience, belief, political opinion, culture, language and bh or on any other arbitrary grounds.

Eskom will adhere to the International Labour Organisation Conventions, ratified by South Africa.

4.1.31 OCCUPATIONAL SAFETY AND HEALTH CONVENTION, 1981 (NO. 155)

Employers shall be required to ensure that the workplaces, machinery, equipment and processes under their control are safe and without risk to health.

The Occupational Health and Safety Act seeks to provide for the health and safety of people at work or in connection with the use of plant and machinery.

Eskom will adhere to the International Labour Organisation Conventions, ratified by South Africa.

5 SOCIAL BASELINE

5.1 MPUMALANGA PROVINCE

Mpumalanga Province is located in the north-eastern part of South Africa. The province borders two of South Africa's neighbouring countries, Mozambique and Swaziland, and four other South African provinces, namely, Gauteng, Limpopo, KwaZulu-Natal and Free State Provinces (**Figure 5-1**). Mpumalanga is characterised by the high plateau grasslands of the Middleveld, which roll eastwards for hundreds of kilometres. It rises towards mountain peaks in the northeast and terminates in an immense escarpment (Mpumalanga Provincial Government, 2022).

Figure 5-1 - South African regional map (Global Africa Network, 2017)

Mpumalanga Province covers an area of 76 495km² and has a population of approximately 4 300 000 (Statistics South Africa, 2022). The capital city of Mpumalanga is Mbombela, and other major cities and towns include Emalahleni, Standerton, eMkhondo, Malelane, Ermelo, Barberton and Sabie. The province is divided into three district municipalities: Gert Sibande, Ehlanzeni and Nkangala District Municipalities. These three districts are further subdivided into 17 Local Municipalities. The proposed development falls within the STLM. The STLM falls within the NDM.

5.2 NKANGALA DISTRICT MUNICIPALITY

The NDM has municipal executive and legislative authority in an area that includes more than one municipality, making it a Category C municipality in the Mpumalanga Province. It is one of three district municipalities in the province, comprising 22% of its geographical area. The NDM comprises the Victor Khanye, Emalahleni, Steve Tshwete, Emakhazeni, Thembisile Hani, and Dr JS Moroka local municipalities (Figure 5-2). The NDM is headquartered in Middelburg. The NDM is the

economic hub of Mpumalanga and is rich in minerals and natural resources (Nkangala District Municipality, 2022).

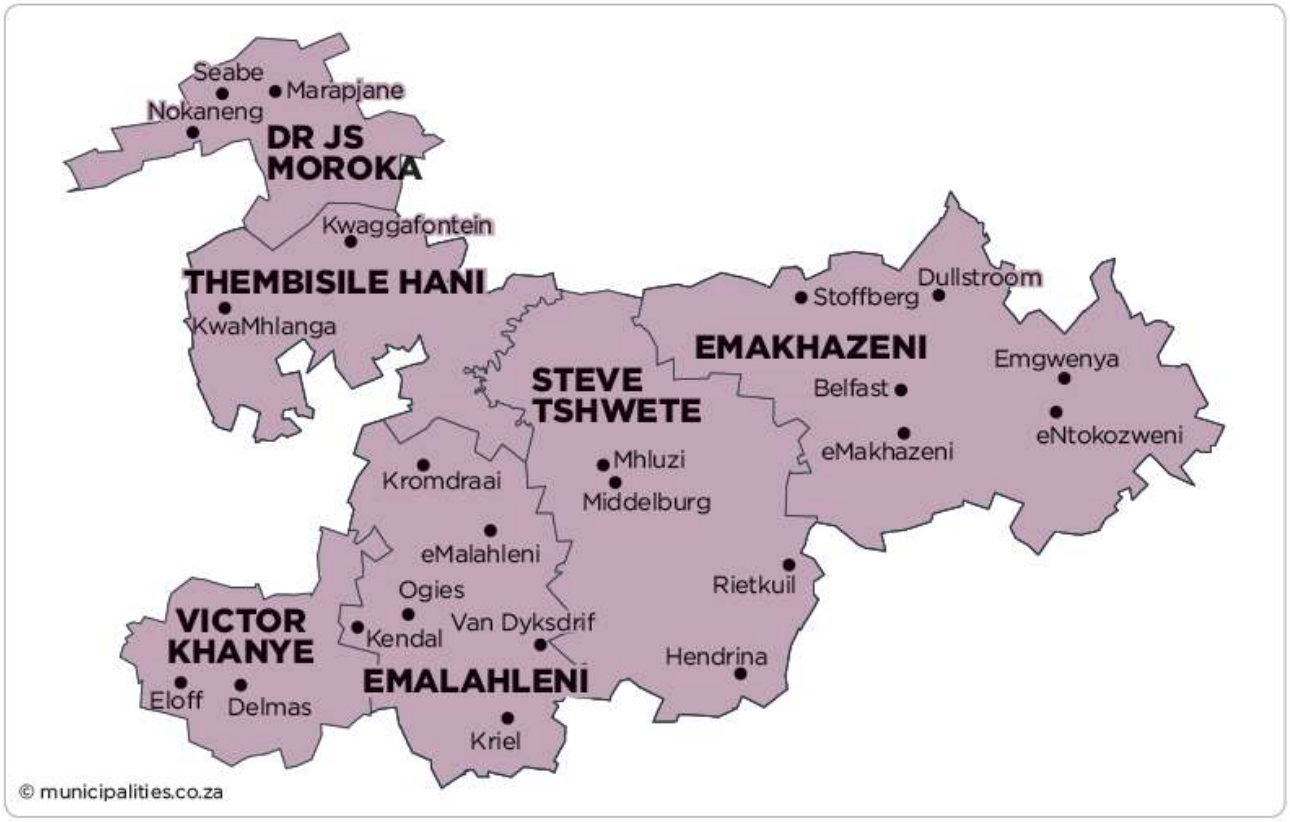

Figure 5-2 - Nkangala District Municipality (Municipalities of South Africa, n.d.)

5.3 STEVE TSHWETE LOCAL MUNICIPALITY

STLM is approximately 3,976 square kilometres in extent, representing 23.7% of the NDM's land mass. To the west, it is bordered by the Emalahleni and Thembisile Hani Local Municipalities; the Govan Mbeki and Msukaligwa Local Municipalities in Gert Sibande District to the south; and the Emakhazeni and Chief Albert Luthuli Local Municipalities to the east (Figure 5-2). Adjacent to the north of the Steve Tshwete Municipality is Elias Motsoaledi Municipality, which forms part of the Sekhukhune District Municipality in Limpopo Province.

5.3.1 POPULATION

The STLM's population increased to 278 749 between 2011 and 2016 (Figure 5-3), which represents an increase of 21.3% over the five years. The growth rate was 4.3% over the same period. In 2030, the municipality's population will be approximately 510 000 (Steve Tshwete Local Municipality, 2016). The gender distribution of the municipality was almost equal, with females representing 48% and males 52% of the population in 2011(Figure 5-4). People between 15 and 64 years old represent 70.7% of the population, with 25% representing the young and 4.3% the elderly (Statistics South Africa, 2022).

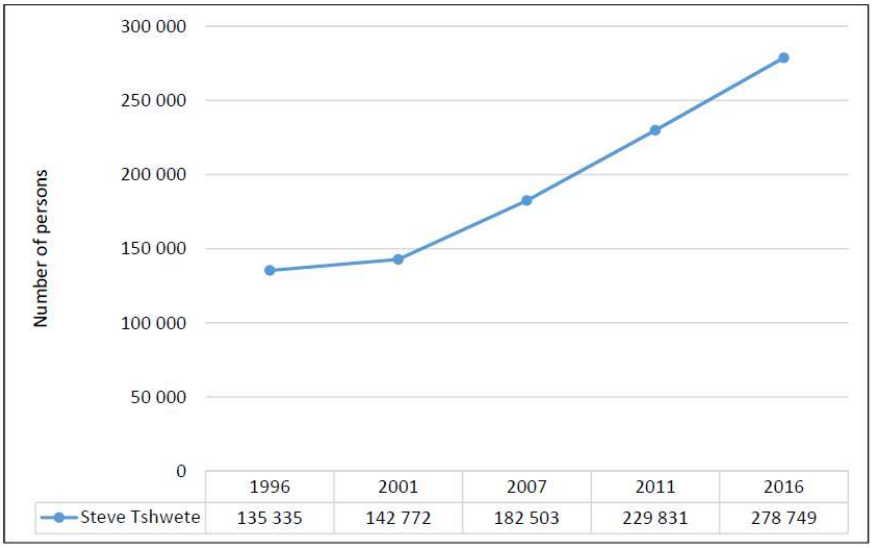

Figure 5-3 - STLM population size (Steve Tshwete Local Municipality, 2016)

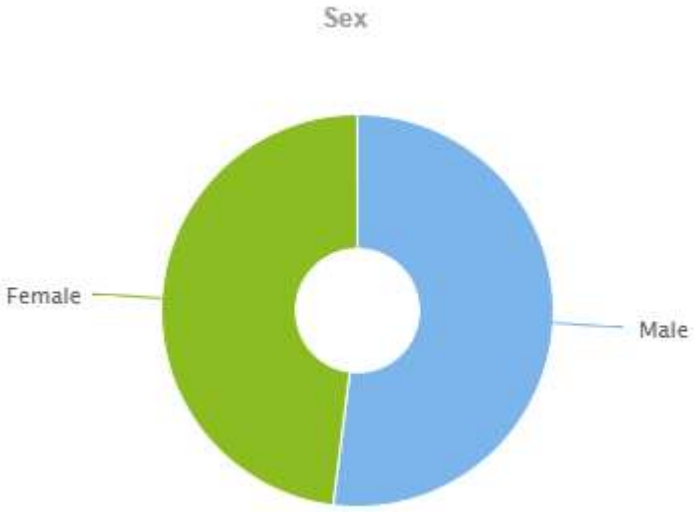

Figure 5-4 - STLM gender distribution (Statistics South Africa, 2022)

5.3.2 ETHNICITY AND LANGUAGE

Almost 74% of the municipality is represented by Black African people, followed by nearly 22 % White, and smaller portions represent the remaining ethnicities, as shown in **Table 5-1** (Statistics South Africa, 2022).

Table 5-1 - Distribution of Steve Tshwete Local Municipality by population group (Statistics South Africa, 2022)

Group	Percentage
Black African	73.6%

Coloureds	2.6%
Indian or Asian	1.6%
White	21.8%
Other	0.4%

Isizulu is the language most spoken in the municipality, followed by Afrikaans, isiNdebele, Sepedi and others in smaller proportions (Table 5-2).

Table 5-2 - Distribution of Steve Tshwete Local Municipality by language spoken

Language	Percentage
IsiZulu	27,8%
Afrikaans	22,1%
IsiNdebele	14,6%
Sepedi	10,6%
English	5,8%
Others	19.1%

5.3.3 EDUCATION

In 2011, approximately 17 000 people over 20 had no formal education, and about 42 500 people had completed secondary education. About 2.2 % (5 050 people) have received higher educational training. Table 5-3 shows the levels of education represented in the municipality.

Table 5-3 - Distribution of the levels of education represented in the municipality

Group	Percentage
No Schooling	3,1%
Some Primary	37,8%
Completed Primary	5,8%
Some Secondary	31,1%
Completed Secondary	18,5%
Higher Education	2,2%
Not Applicable	1,5%

5.3.4 VULNERABLE GROUPS

Vulnerable groups include the economically disadvantaged, racial and ethnic minorities, the uninsured, low-income children, the elderly, the homeless, those with HIV, and those with other chronic health conditions, including severe mental illness and indigenous people. There are no identified vulnerable groups in the project area.

5.3.5 INDIGENOUS PEOPLE

Due to the varied and changing contexts in which indigenous peoples live, there is no universally accepted definition of indigenous peoples. For this Project, the term indigenous people is used in a generic sense to refer to a distinct, vulnerable, social, and cultural group which possesses the following characteristics in varying degrees:

- Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others
- Collective attachment to geographically distinct habitats or ancestral territories in the Project area and the natural resources in these habitats and territories
- Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
- An indigenous language, often different from the official language of the country or region.

(World Bank, 2013)

The screening was undertaken to determine whether indigenous peoples are present in, or have a collective attachment to. Theal Project affected area. There are no indigenous people as defined above in the Komati Power Station area.

5.3.6 EMPLOYMENT AND INCOME PROFILE

The unemployment rate of STLM decreased from 19.7% in 2011 to 16.4% and is among the lowest in the municipalities within the Mpumalanga Province. The unemployment rate for females at 21.8% is nearly double that of males at 12.9Youthunemployment, as recorded by the 2011 census, is 27.1% (Steve Tshwete Local Municipality, 2016).

5.3.7 TYPES OF EMPLOYMENT

In 2011, there were 682 people employed in the formal sector and 76 in the informal sector (Urban-Econ, 2020). Eskom is the major employer in the area. Komati is also surrounded by agricultural land where people will be employed in this sector.

5.3.8 LABOUR

Eskom will adhere to the International Labour Organisation Conventions, which have been ratified by South Africa.

5.3.9 CHILD LABOUR

Eskom will not employ child labour in the construction or in the operation of the facilities.

5.3.10 HOUSING

The number of households in the STLM increased by almost 22 000 from 64 971 in 2011 to 86 713 in 2016. The STLM provides these households with water, electricity and waste services. The

average size of a household has declined from 3.5 to 3.2 people in the same period (Steve Tshwete Local Municipality, 2016).

5.3.11 HEALTH

The main challenge to health care in the STLM is the prevalence of HIV/AIDS. A decrease in the HIV/AIDS prevalence rate was recorded between 2011 and 2013, declining from 52% to 43%. This decrease is attributed to increased HIV Counselling and Testing campaigns in the local municipality and increased community awareness (Steve Tshwete Local Municipality, 2016).

5.3.12 SECURITY AND SAFETY

The Blinkpan Police Station services the Komati community. The crime statistic published for the 2020/2021 financial year by the South African Police Service (saps) indicated that only 62 contact crimes were committed during the period, with assault with the intent to inflict grievous bodily harm recorded, common assault and robbery with aggravating circumstances representing 89% of contact crimes.

In total, 298 community-reported serious crimes were reported at the Blinkpan Police Station, with 71% (208) being theft, followed by contact crimes (21%) and property-related. Crimes (6%).

Eskom will either provide or contract security during the construction and operation of the Project. These will be trained professionals who must sign a code of conduct committing themselves to protecting the local communities.

5.3.13 GENDER-BASED VIOLENCE

Regarding gender-based violence, i.e. Rape, Sexual assault and contact sexual offences, two cases were recorded at the Blinkpan Police Station during the2020/2021 period. Both cases were rape cases.

No organisation in the Komati area offers Gender Based Violence (GBV) services to victims. However, the Department of Social Development established a GBV command centre in 2013 that allows a survivor to contact the centre and be assigned a social worker close to them. Some national NGOs offer services to GBV victims: People Opposing Woman Abuse (POWA), Sonke Gender Justice and Shukumisa.

5.3.14 AGRICULTURAL LANDS

There are 8 681 households that take part in agricultural activities in the Steve Tshwete Local Municipality. The main types are poultry (28%), livestock (24%) and vegetable growing (21%). Other crops and other types of agriculture represent 9% and 19%, respectively.

5.4 SOCIAL AND PHYSICAL INFRASTRUCTURE

5.4.1 SCHOOLS

There is one school in the Komati area (Laerskool Koornfontein). The nearest secondary school (Allendale Secondary School) is 27 kilometres from Komati.

5.4.2 HEALTHCARE

The nearest hospital to the project location is the Impungwe Public Hospital which is 30 kilometres from Komati Power Station. The nearest provincial hospital is the Middleburg Provincial Hospital, 42 kilometres from Komati in Middelburg.

5.4.3 WATER AND SANITATION

In the STLM, 60.8% of households have access to piped water inside dwellings, and 24.2% have access to piped water inside the yard. Community stands to provide piped water to 13.1% of households, while the remainder relies on tankers, boreholes, dams and other water sources (Urban-Econ Development Economists, 2022).

5.4.4 ELECTRICITY

Based on the District Municipality's IDP, the STLM's energy supply is licensed by a third party. The supply has become strained due to supply infrastructure failures and the unwillingness of coal suppliers to become long-term suppliers to Eskom. The export market is more lucrative for coal suppliers (Nkangala District Municipality, 2021).

The STLM must make efforts to address the electricity supply issues by emphasising the following (Nkangala District Municipality, 2021):

1. Partially licensed municipalities to provide electricity.
2. Municipalities are exceeding their notified maximum demand.
3. Non-payment of bulk electricity.
4. Ageing of bulk electricity Infrastructure.
5. Inadequate bulk electricity infrastructure to meet the demand.
6. Lack of operation and maintenance plan.
7. Theft of solar panels from the borehole pump station.

With the stated supply constraints, households in the STLM have good access to electricity, with a 91% having access to electricity.

5.4.5 ACCESS TO SANITATION

Over half (51%) of NDM households have access to flush toilet facilities, and 43% use pit latrines. The rest of the households rely on other types of sanitation facilities. Most STLM households (84%) have access to flush toilet facilities,9% use pit latrines, and the rest rely on other types of facilities (Urban-Econ Development Economists, 2022).

5.4.6 ACCESS TO WASTE REMOVAL

In contrast to the NDM, where only 40% of its population uses refuse dumps (Urban-Econ Development Economists, 2022), 84.7% of the households in the STLM have their waste removed weekly by the municipality. Only 11% of households use a refuse dump (Statistics South Africa, 2022).

5.4.7 TELECOMMUNICATIONS

Komati is serviced by all the major network providers in the country. It has access to 4G/LTE coverage and access to the internet via the service provider Rain.

5.4.8 PUBLIC TRANSPORT

The Komati area relies on taxis as the primary form of public transportation. The Middelburg District Taxi Association services the area. Buses also operate in the area but are mainly used as scholar transport.

6 IMPACT ASSESSMENT APPROACH

GNR 982 requires the identification of the significance of potential impacts during scoping. To this end, an impact screening tool has been used in the scoping phase impacts. The screening tool is based on two criteria: probability; and consequence, where the latter is based on a general consideration of the intensity, extent, and duration.

Table 6-1 - Significance Screening Tool

Probability Scale		1	2	3	4
	1	Very Low	Very Low	Low	Medium
	2	Very Low	Low	Medium	Medium
	3	Low	Medium	Medium	High
	4	Medium	Medium	High	High

Table 6-2 - Probability Scores and Descriptors

Score	Descriptor
4	**Definite**: The impact will occur regardless of any prevention measures.
3	**Highly Probable**: It is most likely that the impact will occur.
2	**Probable**: There is a good possibility that the impact will occur.
1	**Improbable**: The possibility of the impact occurring is Very Low.

Table 6-3 - Consequence Score Description

Score	Negative	Positive
4	Very severe: An irreversible and permanent change to the affected system(s) or party(ies) which cannot be mitigated.	Very beneficial: A permanent and substantial benefit to the affected system(s) or party(ies), with no natural alternative to achieving this benefit.
3	Severe: Long-term impacts on the affected system(s) or party(ies) could be mitigated. However, this mitigation would be difficult, expensive, time-consuming, or a combination of these.	Beneficial: A long-term impact and substantial benefit to the affected system(s) or party(ies). Alternative ways of achieving this benefit would be difficult, expensive, time-consuming, or a combination.
2	Moderately severe: A medium to long-term impact on the affected system(s) or party (ies) that could be mitigated.	Moderately beneficial: A medium to long-term impact of real benefit to the affected system(s) or party(ies). Other ways of optimising the beneficial effects are equally difficult, expensive and time-consuming (or some combination of these) as achieving them in this way.
1	Negligible: A short to medium-term impact on the affected system(s) or party(ies). Mitigation is straightforward, cheap, less time-consuming and not necessary.	Negligible: A short to medium-term impact and negligible benefit to the affected system(s) or party(ies). Other ways of optimising the beneficial effects are more accessible, cheaper, and quicker, or some combination of these.
Significance (S) determined according to the formula:	$[S = (E + D + R + M) \times P]$ $Significance = (Extent + Duration + Reversibility + Magnitude) \times Probability$	

IMPACT SIGNIFICANCE RATING					
Total Score	4 to 15	16 to 30	31 to 60	61 to 80	81 to 100
Environmental Significance Rating (Negative (-))	Very Low	Low	Moderate	High	Very High
Environmental Significance Rating (Positive (+))	Very Low	Low	Moderate	High	Very High

The nature of the impact must be characterised as to whether the impact is deemed to be positive (+ve) (i.e. beneficial) or negative (-ve) (i.e. harmful) to the receiving environment/receptor. For ease of reference, a colour reference system. The key objectives of the risk assessment methodology are to identify any potential social issues and associated social impacts likely to arise from the proposed Project and 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, indirect, secondary as well as cumulative impacts.

7 IDENTIFICATION OF IMPACTS

Based on the collected secondary data, outcomes of the stakeholder consultation and expert knowledge, impacts were identified and categorised according to the project phase in which the impacts are likely to occur, construction, operation, closure and decommissioning phases.

The Komati Solar Photovoltaic and Battery Energy Storage System has been selected based on several factors: repurposing the Komati Power Station, solar resources, environmental constraints, readily available grid connection, site access, and land ownership. The following section analyses the social impacts of the Komati facility with the impact of the construction, operational and closure phases. The following section analyses the social impacts of the Komati facility.

7.1 CONSTRUCTION PHASE

7.1.1 ECONOMIC IMPACT

During the project's construction phase, the Principal Engineer appointed by Eskom will require various goods and services. These requirements are likely to generate economic opportunities for local businesses. The construction workforce (sourced from outside the surrounding communities) is anticipated to use local accommodations (guest houses or rental options), adding to the local economy. Provided that a significant proportion of money derived from wages earned would likely be spent in the vicinity of the project area, it is expected to create substantial revenue flows within the surrounding communities. Acting as a catalyst for growth in the formal and secondary economy.

Additionally, workers sourced from the surrounding communities are foreseen to spend an even more significant proportion of their wages within the local communities, further adding to the flows of revenue, including the provision of transport by local service providers.

Positive economic impacts also result in the improvement of informal economies. Hawkers are expected to increase in and around the construction site, and an increase in sex work is to be expected.

Mitigations

- Communities near the Project should be given special consideration regarding the benefits arising from the Project, as they will be most affected.
- Principal Engineer should first preference appropriate subcontractors in the surrounding communities, followed by those in the municipal area and those outside the province.
- Resources required during construction should be sourced, preferably from local businesses. Accommodation needed for contractors should favour local guesthouses and hotels.
- Eskom should support development initiatives for communities in the Project area.

Significance rating

The significance rating moves from Very Low to Moderate after mitigation.

7.1.2 EMPLOYMENT

During construction, the contractor will require mostly highly-skilled workers and some low-skilled employees. Procurement o labour should largely favour the local community. The introduction of this Project can increase the employment rate and further allow skills development for the local community.

Mitigation

Recruitment policies must ensure preference for residents. Additionally, a monitoring system should be implemented to assess local employment levels. A local skills database should be developed and updated regularly to maximise the uptake of local labour.

Significance rating

The significance rating moves from Low to Moderate after mitigation.

7.1.3 INTRUSIVE IMPACTS

7.1.3.1 Noise

During construction, noise affects people differently; the new noise will come from the facilities. The site is located around residential areas. Road traffic, transportation of materials and equipment, and construction activity are expected to generate noise filtering into the nearby households.

Mitigation

- Consulting with the community when planning construction activities to have the least intrusive impact, i.e. scheduling high-noise activities when they result in the least disturbance. Such as during the day. Information regarding construction activities should be provided to identified and nearby receptors likely to be affected. Such information includes:

  a) Proposed working times.
  b) Anticipated duration of activities.
  c) Explanations of activities to take place and reasons for activities.
  d) Contact details of a responsible person on site should complaints arise.

Significance rating

As a negative impact, the impact's significance decreased from Low before mitigation to Very Low after mitigation.

7.1.3.2 Dust

The construction of facilities will result in traffic as resources are being transported due to increased heavy vehicle presence. Increased road traffic and cleared vegetation for site establishment and construction activities will increase the dust levels in the area.

Mitigations

- Implement environmentally friendly dust suppression measures on unpaved road surfaces.
- A community awareness campaign to be implemented in the surrounding communities to sensitise community members to traffic safety risks and health and communicable disease awareness.
- Roads must be adequately maintained to prevent deterioration of road surfaces due to heavy vehicle traffic.

Significance rating

As a negative impact, the impact's significance decreased from Moderate before mitigation to Low after mitigation.

7.1.3.3 Visual

During construction, there may be a noticeable increase in heavy vehicles utilising the roads to the development site that may cause, at the very least, a visual nuisance to other road users and landowners in the area. Additionally, laydown areas, construction equipment and construction camps will have a visual impact.

Mitigations

- Tree lines may be considered to shield the view of the facility.
- Ensure that vegetation cover adjacent to the development footprint (if present) is not unnecessarily removed during construction, where possible.
- Plan the placement of laydown areas and temporary construction equipment camps to minimise vegetation clearing (i.e. in already disturbed areas) wherever possible.
- Restrict the activities and movement of construction workers and vehicles to the immediate construction site and existing access roads.
- Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and disposed of regularly at licensed waste facilities.
- Reduce and control construction dust using approved dust suppression techniques when required (i.e. whenever dust becomes apparent).

Significance rating

Construction activities may result in a high temporary visual impact that may be mitigated to Moderate after mitigation.

7.1.4 POPULATION INFLUX

The project announcement could result in an influx of people seeking employment opportunities. However, as the project is to take up some of the existing Eskom workforce, the influx is expected to be low but should still be managed. The general labour is expected to be sourced from the surrounding communities, and installing the solar panels is expected to be undertaken mainly through skilled individuals.

The influx of labour could result in the development of informal dwellings and possibly informal settlements in the area. It is unlikely that all these people will be employed during construction, thus resulting in increased unemployment. The increased number of unemployed people may lead to increased social ills such as crime, alcohol abuse, gender-based violence, etc., increasing pressure on local resources, infrastructure and social services.

Construction activities can also take much longer than initially planned at the beginning of a project. This can result in extended stays away from home for the labourers, generally men, which may lead to increased prostitution.

Mitigations

- A community awareness campaign to be implemented in the surrounding communities to sensitise community members to traffic safety risks and communicable disease awareness.

- As part of onboarding workers, training should be provided on preventing GBV SEA and SH.
- Eskom will need to engage with communities using a dedicated community liaison officer and have an effective stakeholder engagement plan, including a grievance redress mechanism for communities to access and lodge complaints.
- Local employment should be a priority for the construction contractor. Training programmes must be implemented to enable local participants in employment opportunities.
- No recruitment should occur at the Project gate to prevent informal settlements around the Project site.
- Increase security in the Project area should be provided to regulate access to the site and prevent informal settlements.
- A detailed influx management plan should be developed.

Significance rating

As a negative impact, the impact's significance decreases from Low before mitigation to Very Low after mitigation.

7.1.5 CONSTRUCTION PHASE – IMPACT SUMMARY

Table 7-1 - Ratings of impacts during the construction phase

Aspect	Character	Pre-Mitigation							Post-Mitigation						
		(M+	E+	R+	D)x	P=	S	Rating	(M+	E+	R+	D)x	P=	S	Rating
Economic Impact	positive	1	2	1	3	2	**14**	**P1**	4	4	3	4	3	**45**	**P3**
		P1 - Very Low							**P3 - Moderate**						
Employment	positive	2	3	2	3	2	**20**	**P2**	4	3	3	4	4	**56**	**P3**
		P2 - Low							**P3 - Moderate**						
Noise	negative	2	2	2	2	2	**16**	**N2**	1	2	2	1	2	**12**	**N1**
		N2 - Low							**N1 - Very Low**						
Dust	negative	2	3	3	1	4	**36**	**N3**	2	3	2	3	2	**20**	**N2**
		N3 - Moderate							**N2 - Low**						
Visual	negative	4	4	4	4	4	**64**	**N4**	3	3	3	3	4	**48**	**N3**
		N4 - High							**N3 - Moderate**						
Population Influx	negative	3	3	2	3	3	**33**	**N3**	2	2	1	2	2	**14**	**N1**
		N3 - Moderate							**N1 - Very Low**						

7.2 OPERATIONAL PHASE

7.2.1 LOW CARBON POWER GENERATION

The facility will produce no waste or emissions during the operational phase. South Africa's per capita greenhouse emissions are the highest in Africa (Jainb, 2017) thus, this project will aid in reducing the carbon footprint and emissions.

Mitigations

- Ensuring that the power generated from the proposed project provides for homes, farms and businesses in the surrounding communities.

- The proposed project should be used to encourage more renewable sources of energy that are more environmentally friendly to other municipalities and provinces across South Africa.
- Recording and publishing the economic benefit or development of the Komati Power Station PV facility to the regional and national economy to encourage more renewable energy sources for South Africa.

Significance rating

As a positive impact, the impact's significance decreases from Low before mitigation to Moderate after mitigation.

7.2.2 EMPLOYMENT OPPORTUNITIES

The maintenance of the facility and the functioning of the facility will create long-term employment opportunities. It is assumed that unskilled labour will be sourced from the local community and skilled labour will be sourced as far as possible from the local welfare. The proposed project will aid in solving two of the leading challenges faced by most municipalities in the country, namely the need for electricity and the lack of adequate employment opportunities.

Mitigations

- During the operational phase, locally employed individuals should receive training and undergo skills development programmes.
- Employees should be allowed the opportunity to participate in mentorship programmes to further their development .

Significance rating

As a positive impact, the significance increases from Very Low before mitigation to Moderate after mitigation.

7.2.3 INTRUSION IMPACTS

7.2.3.1 Visual

The potentially sensitive visual receptors are located within six kilometres of the proposed facility, meaning the visual impact will be high and moderate between three and six kilometres away. The existing visual clutter (power lines, power station and mining infrastructure) within the region will mitigate the visual impact for travelling observers around the project area. As a result, the site has already been changed from an agricultural setting to one of industry.

Mitigations

- For the observers within one kilometre, no mitigation of this impact is possible (i.e. the structures will be visible regardless of mitigation measures). Still, general mitigation and management measures are recommended as best practices.
- It is recommended that vegetation cover (i.e., natural or cultivated) be maintained in all areas outside of the actual development footprint (but still within the project site), both during the construction and operation of the proposed facility. This will minimise the visual impact because of cleared areas and areas stripped of vegetation.
- Existing roads should be utilised wherever possible. New roads should be planned, taking due cognisance of the topography to limit cut and fill requirements.
- Construction/upgrade of roads should be appropriately undertaken, with adequate drainage structures in place to forego potential erosion problems.

- The use of motion sensing lighting should be investigated for use during the evening to lesion night time light pollution.

Significance rating

As a negative impact, the significance decreases from High before mitigation to Moderate after mitigation.

7.2.3.2 Solar glint and glare

Glint and glare occur when the sun reflects off surfaces with specular (mirror-like) properties (i.e. glass windows, water bodies). Glint is generally of shorter duration and is described as “a momentary flash of bright light”, whilst glare is the reflection of bright light for a more extended period. Modern PV reflects less than 2% of the incoming light, especially when the faces face the sun directly.

As a negative impact, the significance decreases from High before mitigation to Low after mitigation.

Mitigations

- The use of sun-tracking arrays must be considered.
- Adjust tilt angles of the panels if glint and glare issues become evident on sensitive receptors, where possible.
- If specific sensitive visual receptors are identified during operation, investigate screening at the receptor site, where possible.
- Use anti-reflective panels and dull polishing on structures, where possible and apply the industry standard.

7.2.4 OPERATIONAL PHASE – IMPACT SUMMARY

Table 7-2 - Ratings of impacts during the operational phase

Receptor	Character	Pre-Mitigation							Post-Mitigation						
		(M+	E+	R+	D)x	P=	S		(M+	E+	R+	D)x	P=	S	
Low Carbon Power Generation	positive	1	2	3	4	2	**20**	**P2**	4	3	3	4	4	**56**	**P3**
	Significance	**P2 - Low**							**P3 - Moderate**						
Employment Opportunities	positive	3	4	3	5	2	**30**	**P2**	4	4	4	5	4	**68**	**P4**
	Significance	**P2 - Low**							**P4 - High**						
Visual	negative	4	4	4	4	4	**64**	**N4**	3	3	3	2	3	**33**	**N3**
	Significance	**N4 - High**							**N3 - Moderate**						
Solar Glint and Glare	negative	4	4	4	4	4	**64**	**N4**	3	2	3	2	3	**30**	**N2**
	Significance	**N4 - High**							**N2 - Low**						

7.3 DECOMMISSIONING AND CLOSURE PHASE

7.3.1 LOSS OF EMPLOYMENT

During this phase, the operational workforce will lose their jobs, and it may lead to adverse social consequences in the municipality and labour-sending areas such as:

- Increase or return the unemployment rate to previous levels within the project area.
- Financial hardship.
- Family tensions and breakdown.
- Alienation, shame and stigma.

Crime.

Mitigations

- Timely and adequate consultation with employees dependent on the Project for employment.
- Assisting employees seeking alternative employment at other power plants or related facilities.
- Training and educating employees to equip them with skills that could benefit them in other industries.

Significance Rating

As a negative impact, the significance decreases from Moderate before mitigation to Low after mitigation.

7.3.2 REDUCED COMMUNITY INVESTMENT

There will be reduced local spending by Eskom and its staff and contractors. Consequently, local business revenue may be affected, and tax payments will decrease.

Mitigations

- Engage local and regional government concerning the decommissioning phase.
- Develop alternative projects which can support the local economy.

Significance rating

As a negative impact, the impact's significance decreased from Moderate before mitigation to Low after mitigation.

7.3.3 ASSOCIATED INFRASTRUCTURE

Structures used during construction and operation will be abandoned and might attract criminals. Maintenance of these structures might decrease after the Project operation, leading to hazards to the health and welfare of the community. The batteries/equipment may have reached the end-of-life and may leak.

Mitigations

- End-of-Life shutdown procedure must be undertaken, including a risk assessment of the activities involved.
- Where possible, re-purpose the solid-state batteries/containers and equipment with the associated environmental impact considered.
- Disposal according to local regulations and other directives such as the European Batteries Directive.

- End-of-life, which is affected by temperature and time, cycles etc., should be predefined, and monitoring should be in place to determine if it has been reached.
- Eskom shall develop exit strategies for all its community development initiatives.

Significance rating

As a negative impact, the impact's significance decreased from Moderate before mitigation to Low after mitigation.

7.3.4 DECOMISSIONING AND CLOSURE PHASE – IMPACT SUMMARY

Table 7-3 - Ratings of impacts during the decommissioning phase

Receptor	Character	Pre-Mitigation							Post-Mitigation						
		(M+	E+	R+	D)x	P=	S		(M+	E+	R+	D)x	P=	S	
Loss of Employment	negative	4	4	3	4	3	**45**	**N3**	2	1	2	4	3	**27**	**N2**
	Significance	**N3 - Moderate**							**N2 - Low**						
Reduced Community Investment	negative	3	4	3	3	3	**39**	**N3**	2	1	2	4	3	**27**	**N2**
	Significance	**N3 - Moderate**							**N2 - Low**						
Associated Infrastructure	negative	3	3	3	3	4	**48**	**N3**	2	2	1	3	2	**16**	**N2**
	Significance	**N3 - Moderate**							**N2 - Low**						

8 CUMULATIVE IMPACTS

With the country's need for stable electricity growing constantly, it is envisioned that similar renewable energy projects will be proposed in the surrounding area aiming to make use of the energy grid infrastructure at the Komati Power Station.

There are two similar projects located within 30 km of the proposed project, namely the proposed installation of a solar photovoltaic power plant at the Eskom Duvha Power Station and the proposed Forzando North Coal Mine photovoltaic solar facility.

The Duvha Power Station is located approximately 20 km from the proposed Komati site. Given the location of the Duvha solar facility, it is envisioned that the infrastructure associated with connecting the facility to the power grid will loop into the current infrastructure at the Duvha Power Station.

The impacts of this project on the Duvha community are likely similar to the ones discussed in this study for the Komati Solar Photovoltaic and Battery Energy Storage System project. The anticipated cumulative social impact is expected to be low.

The proposed Forzando North Coal Mine solar facility is to be located at one of two alternative locations which are approximately 15 km and 18 km away respectively. Alternative 1 is located between the Komati Power Station (which is approximately 15km away) and the Kriel and Matla Power Stations which are approximately 18 km and 23 km from the proposed project. It is assumed that the proposed project will connect to the national electricity grid at the Komati Power Station as it is closest.

The cumulative impact of these projects will be because of the powerlines lines looping into the Komati Power Station. Given the numerous powerlines currently emanating from the Power Station, the anticipated social impact of these projects is expected to be low.

Table 8-1 - Ratings of cumulative impacts

Receptor	Character	(M+	E+	R+	D)x	P=	S	
Cumulative Impact	negative	2	2	2	4	2	20	
Significance								

9 CONCLUSION

The development of the proposed Komati Solar Photovoltaic and Battery Energy Storage System aligns with legislative and policy frameworks. The Project will create employment, training, and business opportunities during the construction and operation. As detailed above, the potential negative impacts of the construction and operation phases can be mitigated.

The proposed development will also represent an investment in clean, renewable energy infrastructure for the country which will go some way to offset the negative environmental and socio-economic impacts associated with coal-based fossil fuel energy generation. Renewable energy also addresses climate change and assists the country in meeting its climate change reduction goals.

Some unfavourable impacts have been rated as a high negative significant impact. Other construction, operation and decommissioning phase impacts have been rated as medium negative and medium positive impacts, respectively. As shown in Table 9-1 below, if mitigation measures are implemented, it is anticipated that the consequence and probability of the negative impacts will be reduced. Given the above, it is strongly recommended that the mitigation measures described in this report be incorporated into the proposed project's Environmental and Social Management Plan. Additionally, measures must be put in place to monitor and assess the implementation of these mitigation measures and take corrective action where necessary.

Table 9-1 - Summary of impact ratings

Impact	Pre-mitigation	Post-Mitigation
Construction Phase		
Economic Impact	P1 - Very Low	P3 - Moderate
Employment	P2 - Low	P3 - Moderate
Noise	N2 - Low	N1 - Very Low
Dust	N3 - Moderate	N2 - Low

Impact	Pre-mitigation	Post-Mitigation
Visual	N4 - High	N3 - Moderate
Population Influx	N3 - Moderate	N1 - Very Low
Operation Phase		
Low Carbon Power Generation	P2 - Low	P3 - Moderate
Employment Opportunities	P2 - Low	P3 - Moderate
Visual	N4 - High	N3 - Moderate
Solar Glint and Glare	N4 - High	N2 - Low
Closure Phase		
Loss of Employment	N3 - Moderate	N2 - Low
Reduced Community Investment	N3 - Moderate	N2 - Low
Associated Infrastructure	N3 - Moderate	N2 - Low

10 REFERENCES

Department of Cooperative Governance and Traditional Affairs, Mpumalanga Provincial Government. (2019). *Mpumalanga Spatial Development Framework.* Retrieved June 15, 2022, from https://cogta.mpg.gov.za/documents/SpatialDevFramework/PSDF%20Final%20Report.pdf

Eskom. (2022, March 09). Terms of Reference for Komati Solar PV and BESS Environmental and Social Impact Assessment.

Global Africa Network. (2017, November 14). *An economic overview of Mpumalanga Province*. Retrieved June 17, 2022, from https://www.globalafricanetwork.com/company-news/economic-overview-of-mpumalanga-province/

Jainb, S. J. (2017). *The rise of Renewable Energy implementation in South Africa.* Johannesburg : Elsevier Ltd.

Mpumalanga Provincial Government. (2022, May 31). *About Mpumalanga Province*. Retrieved from Mpumalanga Provincial Government: http://www.mpumalanga.gov.za/about/province.htm

Municipalities of South Africa. (n.d.). *Nkangala District Municipality (DC31)*. Retrieved June 17, 2022, from https://municipalities.co.za/map/133/nkangala-district-municipality

Nkangala District Municipality. (2021, February). *Final Integrated Development Plan.* Retrieved from Department of Co-operative Governance & Traditional Affairs: https://www.cogta.gov.za/cgta_2016/wp-content/uploads/2021/02/Nkangala-2020-21-reviewed-IDP.pdf

Nkangala District Municipality. (2022, May 31). *Nkangala District Municipality Background*. Retrieved from Nkangala District Municipality: https://www.nkangaladm.gov.za/nkangala-district-municipality-background/

Statistics South Africa. (2022, May 31). Retrieved from Stats SA: https://www.statssa.gov.za/

Statistics South Africa. (2022, May 31). *Steve Tshwete*. Retrieved from https://www.statssa.gov.za/?page_id=993&id=steve-tshwete-municipality

Steve Tshwete Local Municipality. (2016). *2017-2022 Integrated Development Plan.*

Urban-Econ. (2020). *Socio-economic impact study on the shutdown and repurposing of Komati Power Station to create a basis for sustainable livelihood.*

Urban-Econ Development Economists. (2022). *Socio-Economic Impact Study for the Shutdown and Repurposing of Komati Power Station to Create a Basis for Sustainable Livelihood.* Pretoria.

World Bank. (2018). *Guidance Note for Borrowers Assessment and Management of Environmental and Social Risks and Impact.*

WSP. (2023). *Dalmanutha Wind Energy Facility, Mpumalanga.* Midrand.

Building 1, Maxwell Office Park
Magwa Crescent West, Waterfall City
Midrand, 1685
South Africa

wsp.com