

REPORT

The Proposed Solar Photovoltaic and Battery Energy Storage System at Komati Power Station
Social Impact Assessment

Submitted to:

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TABLE OF ABBREVIATIONS

EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessments
ESS	Environmental and Social Standards
FGM	Focus Group Meeting
GPN	Good Practice Note
GW	Giga Watt
I&AP	Interested and Affected Parties
IDP	Integrated Development Plans
MSDF	Mpumalanga Spatial Development Framework
NEMA	National Environmental Management Act 107 of 1998
NDM	Nkangala District Municipality
NDP	National Development Plan
SIA	Social Impact Assessment
STLM	Steve Tshwete Local Municipality
ToR	Terms of Reference

1.0 INTRODUCTION

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

2.0 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 1 below. Eskom owns the identified parcels of land.

2.1 Project location

The Komati Power Station is situated about 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 modern newer stations. Komati Power Station will reach its end-of-life expectancy in September 2022, when Unit 9 will have reached its dead stop date (DSD). Units 1 to 8 have already reached their DSD [1].



Figure 1: Locality map

3.0 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 - Golder 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

Golder 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 undertaken for the closure of the Komati Power Station.
- Available maps and satellite imagery.

3.1.2 Primary Research

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

A focus group meeting (FGM) was held on 09 June 2022 at the Eskom Komati SBSS Conference Room. In addition, the draft scoping report will be made available for public review for 30 days. All issues, questions, concerns, and suggestions for enhanced benefits raised by I&APs to date 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 business and contractors should be used during the construction and maintenance of the Solar Photovoltaics and Battery Energy Storage System.

4.0 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 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. The aim of this Framework is 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 impact of the project. The framework is underpinned by the Environmental and Social Standards (ESS) and in Particular ESS1 which set out the requirements for borrowers relating to the identification and

assessment of 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 environment and social risks and impacts of the project 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, minimize or reduce risks and impacts to acceptable levels;
 - c) Once risks and impacts have been minimized 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 utilize national environmental and social institutions, systems, laws, regulations, and procedures in the assessment, development, and implementation of projects, whenever appropriate.
- To promote improved environmental and social performance, in ways which recognize and enhance Borrower capacity. [2]

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 in a sustainable manner to promote social and economic development. The local government must promote a safe and healthy environment and encourage community involvement in matters of local government.

Table 1: Aspects of the South African Constitution Applicable to SIA

Regulation	Description
Section 24 of the Constitution	Everyone has the right <ol style="list-style-type: none"> a. to an environment that is not harmful to their health or wellbeing; and b. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that: <ol style="list-style-type: none"> 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 the enhancement and protection of air quality in the country. Future projects should not contribute 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 seeks to ensure that future interventions should protect the health, well-being and environment of the affected communities and 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 seeks to ensure that projects and future interventions should not alter the capability of water resources 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 Electricity Regulation Act (Act No. 4 of 2006), Second Amendment (2011). The Act gives power to the Minister of Energy to determine new generation capacity and to approve the generation and procurement of electricity. A licence for generation capacity is subject to ministerial approval. An amendment to the Electricity Regulations on new generation capacity was made 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 capacity of the state, and promoting leadership and partnerships throughout society. A key focus of the NDP is the country's ability to return to a state of continued and uninterrupted electricity supply. This was to be achieved by increasing the electricity generation reserve margin from 1% (2014) to 19% in 2019, which would require 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 an additional 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 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 namely: energy, transport, communication, water and housing. Sustaining high levels of public investment in these areas will create jobs in construction, operation and maintenance of infrastructure. The New Growth Path identifies five other priority areas as part of the programme to create jobs, through a series of 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 of Renewable energy in south Africa, 2015).

4.1.10 Industrial Policy Action Plan (IPAP)

The IPAP is driven by the Department of Trade and Industry. 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 in (2014). In its review report the following was reported in terms of 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% (Industrial Policy Action Plan 2018/19-2020/21).

4.1.11 Integrated Resource Plan 2019

The Integrated Resource Plan (IRP) is an electricity infrastructure development plan based on least-cost electricity supply and demand balance, considering security of supply and the environment namely to minimize negative 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 6 422 MW under the REIPPPP has been procured, with 3 876 MW operational and made available to the grid. Current base from wind is 1 980 MW in 2018 by 2030 this will be 17 742 MW which is the highest of all renewable energy sources. The next closest is PV Solar 8 288 but coal will still dominate with in 2030 with 333 64 MW.

Table 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	
<p> Installed Capacity Committed / Already Contracted Capacity New Additional Capacity (IRP Update) </p>										

However, the 2019 report also states that build limits on renewables (wind and solar) will remain in place until the next 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 do not alter the progress made in promoting social and economic inclusion and that future interventions should promote the efficient and sustainable use of land. Interventions should 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 serves to outline the role of transparent developmental, regulatory land and development management.

The MSDF plans to explore the possibility of renewable energy generation. It intends to make use of land that has low agricultural potential and is unused for renewable energy production, namely solar and wind [3].

4.1.15 Nkangala District Municipality Integrated Development Plan

The Municipal Systems Act 32 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) [4].

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 by the following strategic goals:

1. Provision of sustainable and accessible basic 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 SEA/SH that can emerge in projects involving major civil works contracts – and to advise on how to best manage such risks.

The ESIA will identify the potential social impacts that the project may have on women in the project affected area and will recommend 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 also aims to contribute to a growing knowledge base on the subject.

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 prioritization 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, and violence, and slowing economic growth.

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

There will be no physical or economic displacement as a result of the project.

4.1.20 GPN - Road safety, 2019

The ESF road safety requirements are defined in ESS 4. The following objective are 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, as well as 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 the occurrence of 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 is assessed and considered in the ESIA.

4.1.22 GPN - Assessing and Managing the risks of adverse impacts on communities from temporary project induced labor influx, 2016

To assist the identification and management of 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)

Workers and employers, without distinction whatsoever, shall have the right to establish and, subject only to the rules of the organisation concerned, to join organisations of their own 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)

Aims to suppress the use of 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 have been ratified by South Africa.

4.1.26 Abolition of Forced Labour Convention, 1957 (No. 105)

Undertakes to suppress and not to 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 have been ratified by South Africa.

4.1.27 Minimum Age Convention, 1973 (No. 138)

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

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

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

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 it is a criminal offence to employ a child younger than 15.

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 on the basis of 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 on 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 designed to promote, equality of opportunity and treatment in respect of employment and occupation.

The Employment Equity Act states that no person may discriminate directly or indirectly against an employee on the basis of 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 on any other arbitrary grounds.

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

5.0 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 2). 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 [5].



Figure 2: South African regional map [6]

Mpumalanga province covers an area of 76 495km² and has a population of approximately 4 300 000 [7]. 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 Steve Tshwete Local Municipality (STLM). The STLM falls within the Nkangala District Municipality (NDM).

5.2 Nkangala District Municipality

The NDM has municipal executive and legislative authority in an area that includes more than one municipality which makes it a Category C municipality¹, located in the Mpumalanga Province. It is one of three district municipalities in the province, making up 22% of its geographical area. The NDM comprises the Victor Khanye, Emalahleni, Steve Tshwete, Emakhazeni, Thembisile Hani, and Dr JS Moroka local municipalities (Figure 3). The NDM is headquartered in Middelburg. The NDM is the economic hub of Mpumalanga and is rich in minerals and natural resources [8].

¹ A municipality that has municipal executive and legislative authority in an area that includes more than one municipality.

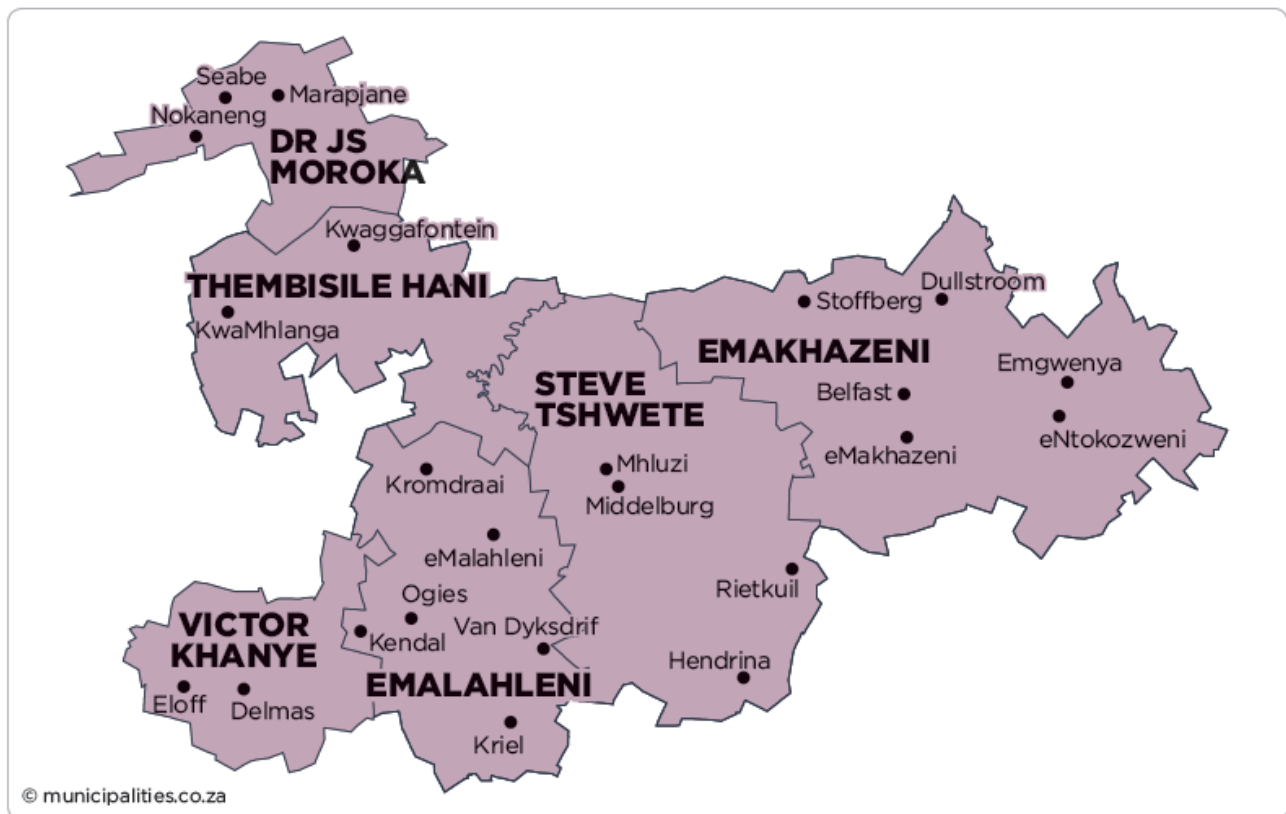


Figure 3: Nkangala District Municipality [9]

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 Thembsile 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 3). 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 4) which represents an increase of 21.3% over the five-year period. The growth rate was 4.3% over the same period. It is estimated that in 2030 the population of the municipality will be approximately 510 000 [10]. The gender distribution of the municipality was almost equal with females representing 48% and males 52% of the population in 2011 (Figure 5). People aged between 15 and 64 years old represent 70.7% of the population with 25% of the population representing the young and 4.3%, the elderly [11].

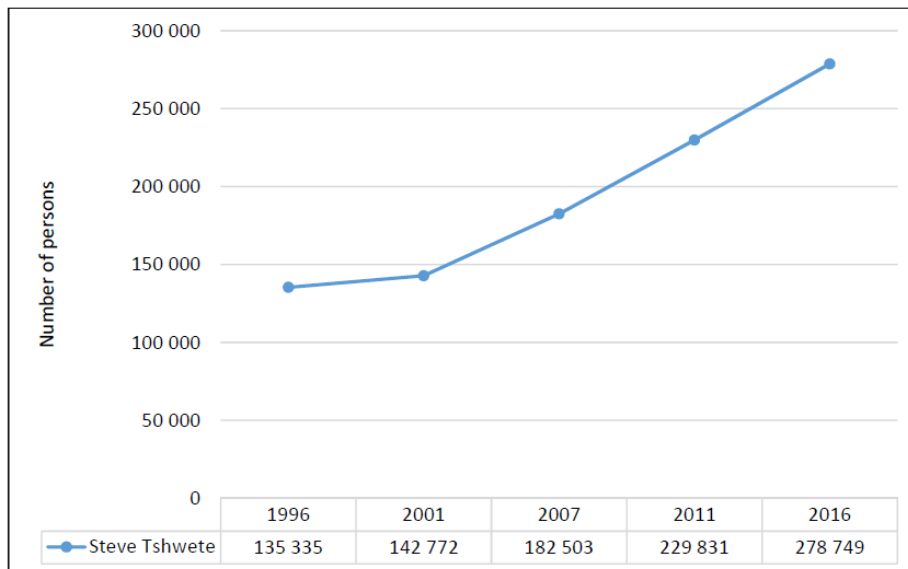


Figure 4: STLM population size [10]

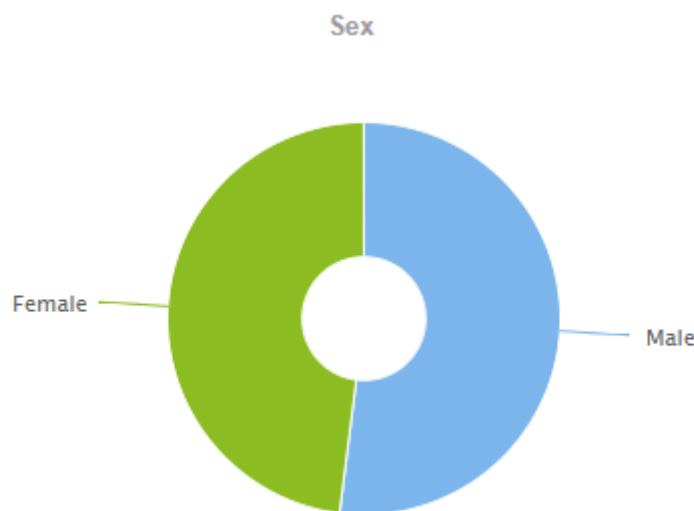


Figure 5: STLM gender distribution [11]

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 representing remaining ethnicities as shown in Table 3 [11].

Table 3: Distribution of Steve Tshwete Local Municipality by population group [11]

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 other in smaller proportions (Table 4).

Table 4: 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 the age of 20 had no form of formal education and approximately 42 500 people have completed secondary education. Approximately 2.2 % (5 050 people) have received higher educational training. Table 5 shows the levels of education represented in the municipality.

Table 5: 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 possess 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, the 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 of 21.8% is nearly double that of males at 12.9%. The youth unemployment, as recorded by the 2011 census, is 27.1% [10].

5.3.7 Types of Employment

In 2011, there were 682 people employed in the formal sector and 76 in the informal sector [12]. 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 a total of 86 713 in 2016. The STLM provides services such as water, electricity and waste to these households. The average size of a household has declined from 3.5 to 3.2 people in the same period [10].

5.3.11 Health

The main challenges to the 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, seeing a decline from 52% to 43%. This decrease is attributed to increased HIV Counselling and Testing campaigns in the local municipality and increased community awareness [10].

5.3.12 Security and Safety

The Komati community is serviced by the Blinkpan Police Station. 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 being record, 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 and will need to sign a code of conduct committing themselves to the protection of the local communities.

5.3.13 Gender-Based Violence

In terms of gender-based violence, i.e. Rape, Sexual assault, and contact sexual offences, two cases were recorded at the Blinkpan Police Station during the 2020/2021 period. Both cases were rape cases.

There is no organisation based in the Komati area that offer 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. There are national NGOs that offer services to GBV victims namely, 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 Koorfontein). 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, which is 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 provide piped water to 13.1% of households while the remainder of the households rely on tankers, boreholes, dams and other sources of water [13].

5.4.4 Electricity

Based on the District Municipality's IDP, the STLM's energy supply is licensed from 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 the coal suppliers [4].

The STLM must make efforts to address the electricity supply issues by emphasising the following [4]:

1. Partially licenced municipalities to provide electricity.
2. Municipalities 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% of households 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. The majority of STLM households (84%) have access to flush toilet facilities, 9% use pit latrines and the rest rely on other types of facilities [13].

5.4.6 Access to waste removal

In contrast to the NDM, who only 40% of its population makes use of refuse dumps [13], 84.7% of the households in the STLM have their waste removed weekly by the municipality and only 11% of the households make use of a refuse dump [11].

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 main form of public transportation. The area is serviced by the Middelburg District Taxi Association. Buses also operate in the area but are mainly used as scholar transport.

6.0 IDENTIFICATION AND HIGH-LEVEL SCREENING IMPACTS

6.1 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.

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	

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

Score	Descriptor
1	Improbable: The possibility of the impact occurring is very low

Table 6: 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 very substantial benefit to the affected system(s) or party(ies), with no real 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 or time consuming or some 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 or time-consuming, or some combination of these.
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 or 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.

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 (**Table 7**) has been applied according to the nature and significance of the identified impacts.

Table 7: Impact Significance Colour Reference System to Indicate the Nature of the Impact

Negative Impacts (-ve)	Positive Impacts (+ve)
Negligible	Negligible
Very Low	Very Low

Negative Impacts (-ve)**Positive Impacts (+ve)**

Low	Low
Medium	Medium
High	High

The key objectives of the risk assessment methodology are to identify any additional potential social issues and associated social impacts likely to arise from the proposed project, and to propose a significance ranking. Issues / aspects will be reviewed and ranked against a series of significance criteria to identify and record interactions between activities and aspects and resources and receptors to provide a detailed discussion of impacts. The assessment considers direct², indirect³, secondary⁴ as well as cumulative⁵ impacts.

The significance ranking is calculated using the following formula:

$$\text{Significance} = (\text{Extent} + \text{Duration} + \text{Reversibility} + \text{Magnitude}) \times \text{Probability} \quad [S = (E + D + R + M) \times P]$$

6.1.1 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.

6.2 Preliminary key impacts

The Komati Solar Photovoltaic and Battery Energy Storage System has been selected based on several factors namely: 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 preliminary impact's construction, operational and closure phase of the facility. The following section analyses the social impacts of the Komati facility.

6.2.1 Construction Phase

6.2.1.1 Economic Impact

During the construction phase of the project, the Principal Engineer appointed by Eskom will require various goods and services. These requirements are likely to generate economic opportunities for local businesses. It is anticipated that the construction workforce (sourced from outside the surrounding communities) will be housed in 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 flows of revenue within the surrounding communities, thus 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 larger proportion of their wages within the local communities further adding to the flows of revenue.

² Impacts that arise directly from activities that form an integral part of the Project.

³ Impacts that arise indirectly from activities not explicitly forming part of the Project.

⁴ Secondary or induced impacts caused by a change in the Project environment.

⁵ Impacts are those impacts arising from the combination of multiple impacts from existing projects, the Project and/or future projects.

6.2.1.2 Community, Health and Safety Risk

During construction, noise affects humans differently, and the new noise which will be coming from the facilities. The construction of facilities can result in traffic and resources are being transported. Waste material that results from the construction could be detrimental to aesthetics and nearby community.

Social ills may also increase in the area with construction known to result in an influx of people from further afield seeking employment opportunities. The limited opportunities may result in increased unemployment in the area and thus increased crime.

Construction activities can be take much longer than initially planned at the beginning of a project. This can result in extended stays away from home for the labourers, who are generally men, and this may lead to an increase in the night economy.

Table 8: Ratings of impacts during the construction phase

	Impact					
	Magnitude	Extend	Reversibility	Duration	Probability	Significance
Economic Impact	3	3	3	2	4	44
Community, Health and Safety Risk	3	3	3	2	3	33

6.2.2 Operational phase

6.2.2.1 Low Carbon Power Generation

During the operational phase of the project, no waste or emissions will be produced by the facility. South Africa's per capita greenhouse emissions are the highest in Africa [14] thus this project will aid in reducing the carbon footprint and emissions of the country.

6.2.2.2 Impact on the community

The change in the landscape/view within the community and the increased presence of construction workers may lead to a decreased sense of place/belonging for the residents of the area.

6.2.2.3 Employment and Business Opportunities

The maintenance of the facility and functioning of the facility will create employment. It is assumed that the unskilled labour will be sourced from the local community and that skilled labour, within reason, will be sourced from the local communities as well.

Table 9: Ratings of impacts during the operational phase

	Impact					
	Magnitude	Extend	Reversibility	Duration	Probability	Significance
Low Carbon Power Generation	3	4	1	4	5	60
Impact on the community	3	3	3	4	4	52
Employment and Business Opportunities	3	3	3	4	4	52

6.2.3 Decommissioning and closure phase

6.2.3.1 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 area.

6.2.3.2 Reduced community investment

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

Table 10: Ratings of impacts during the decommissioning phase

	Impact					
	Magnitude	Extend	Reversibility	Duration	Probability	Significance
Loss of employment	4	3	3	4	4	56
Reduced community investment	4	3	3	4	4	56

6.3 Cumulative impacts

6.3.1 Visual impacts

The proposed development will change the aesthetics of the project area. Construction activities, dust mobilisation and construction vehicles traversing the proposed site, as well as the presence of new infrastructure will transform the landscape. The solar panels will be visually prominent from several vantage points.

6.3.2 Employment

One of the positive short-term social impacts will be the creation of jobs. Construction activities will create several temporary employment opportunities. Other social impacts include the increased demand on local services, the influx of job seekers, social problems arising from population increase in the area, change in land use and the effect on sense of place.

6.3.3 Traffic

Transportation of construction materials and workers to the proposed site, during the construction phase is anticipated to have a significant impact on the condition of the transportation infrastructure and traffic volumes in the area. Additional heavy construction vehicles have the potential to damage roads, create noise, dust, and cause risks impacts for other road users and residents in the area.

6.3.4 Economic benefits

Increased expenditure during the construction of the proposed facility will contribute to the local economy. The income of the workers will also increase spending in the local community and thus stimulate the formal and informal sectors and secondary industries, having a positive multiplier effect.

The local businesses used will be skilled in the construction of solar facilities leading to a wider range of opportunities for the business and its workers.

7.0 TERMS OF REFERENCE

Following the approval of the Terms of Reference (ToR) by the Mpumalanga Province: Department of Economic Development, Environment and Tourism, field work will be undertaken to collect socio-economic data. This study will employ a predominantly qualitative approach (i.e. interviews, meetings and focus group discussions) to gather data.

Environmental Impact Assessment (EIA) for the project in line with the National Environmental Management Act 107 of 1998 (NEMA) [EIA Regulations (2014 as amended)] and the World Bank ESS Guidance notes will be undertaken. As part of the environmental authorisation process a Social Impact Assessment (SIA) is required. The SIA will:

- Describe the socio-economic conditions of the receiving environment.
- Identifying and describing the socio-economic implications associated with the proposed project.
- Identify, describe, and rate the significance of the socio-economic impact that may result from the proposed project.
- Recommend feasible (practical and cost-effective) mitigation measures to enhance positive effects and reduce negative impacts.

8.0 CONCLUSION

The development of the proposed Komati Solar Photovoltaic and Battery Energy Storage System is in line with legislative and policy frameworks. The Project will create employment, training, and business opportunities during both the construction and operation phases of the project. The potential negative impacts associated with the construction phase and operation phase can be mitigated. Detailed mitigation measures will be outlined in the Social Impact Assessment Report.

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.

The potential visual, noise and dust impacts will be assessed from these specialist studies to be undertaken as part of the EIA. The cumulative impacts on the area's sense of place and assessment of significance of impacts will be informed by the findings of the visual and noise assessments undertaken for the proposed facility as part of the EIA.

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