Merafong Energy (Pty) Ltd

PROPOSED MERAFONG ELECTRICAL GRID INFRASTRUCTURE

Draft Site Sensitivity Verification Report

TBC
JUNE 2025

CONFIDENTIAL

Merafong Energy (Pty) Ltd

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DATE: JUNE 2025

Merafong Energy (Pty) Ltd

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Draft Site Sensitivity Verification Report

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QUALITY CONTROL

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EMPR

1 INTRODUCTION

Merafong Energy (Pty) Ltd (Merafong) has appointed WSP Group Africa Pty Ltd (WSP), as an independent Environmental Assessment Practitioner (EAP) to submit a registration application for the Merafong Grid Connection on various farm portions for the Merafong Solar Photovoltaic (PV) Facility. The proposed project is situated approximately 10km east of Carletonville, within the jurisdiction of the Merafong City Local Municipality, in the West Rand District Municipality, Gauteng Province (**Figure 1-1** and **Figure 1-2**).

This Site Sensitivity Verification Report (SSVR) forms part of the registration process in terms of the "*Standard for the Development and Expansion of Transmission and Distribution Power Line Infrastructure* " dated February 2024. Registration in terms of this standard adopted in terms of section 24(10)(a) of NEMA to allow for the exclusion, in terms of section 24(2)(d) of NEMA, of activities for the development and expansion of electricity transmission and distribution power line infrastructure as identified in Listing Notices 1 and 2 of the Environmental Impact Assessment Regulations, 2014 as amended (EIA Regulations), promulgated under section 24(5) of NEMA as well as any listed or specified activities necessary for the realisation of such infrastructure as described in the scope of this Standard.

This exclusion will apply only to activities identified in terms of section 24(2)(a) and (b) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), subject to compliance with the Standard for the Development and Expansion of Electricity Transmission and Distribution Power Line Infrastructure, as set out in the Schedule, while the requirements of any other relevant legislation remain applicable.

1.1 BACKGROUND TO THE PROJECT

Merafong (Applicant) proposes to establish a loop-in loop-out (LILO) overhead powerline (OHPL) and switching station that forms part of the up to 140MW Merafong Solar PV Facility located near Fochville in Gauteng. The project will include a loop-in loop-out (LILO) OHPL from the switching station to the existing 132kV powerlines that traverse the proposed Merafong SEF. The project needs to evacuate power to the national grid.

Due to the location of the project within a strategic Transmission Corridor and the nature of the verified sensitivities on site, the proposed Grid Connection qualifies for an exclusion process in terms of section 24(2)(a) and (b) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), subject to compliance with the Standard for the Development and Expansion of Transmission and Distribution Power Line Infrastructure.

This option will undergo a separate registration process in terms of Government Notice (GN) 2313 of 27 July 2022 of a registration in terms of the Standard for the Development and Expansion of Powerlines and Substations within Identified Geographical Areas and the Exclusion of this Infrastructure from the Requirement to obtain an Environmental Authorisation. It should be noted that the Solar PV facility is included under a separate registration process, distinct from the current registration.

This exemption application is applicable to the the LILO OHPL (Figure 1-3).

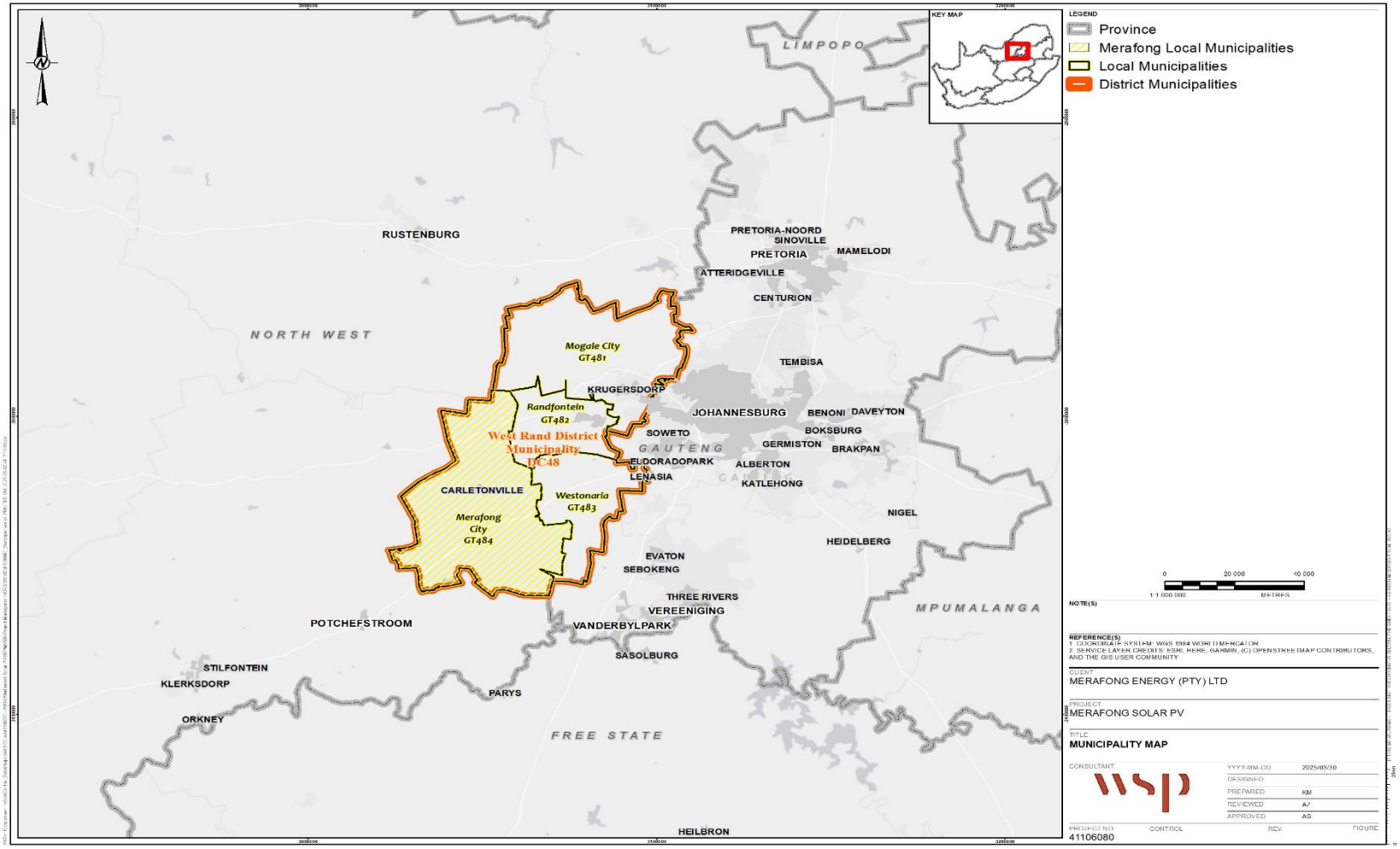


Figure 1-1 - Municipality Map

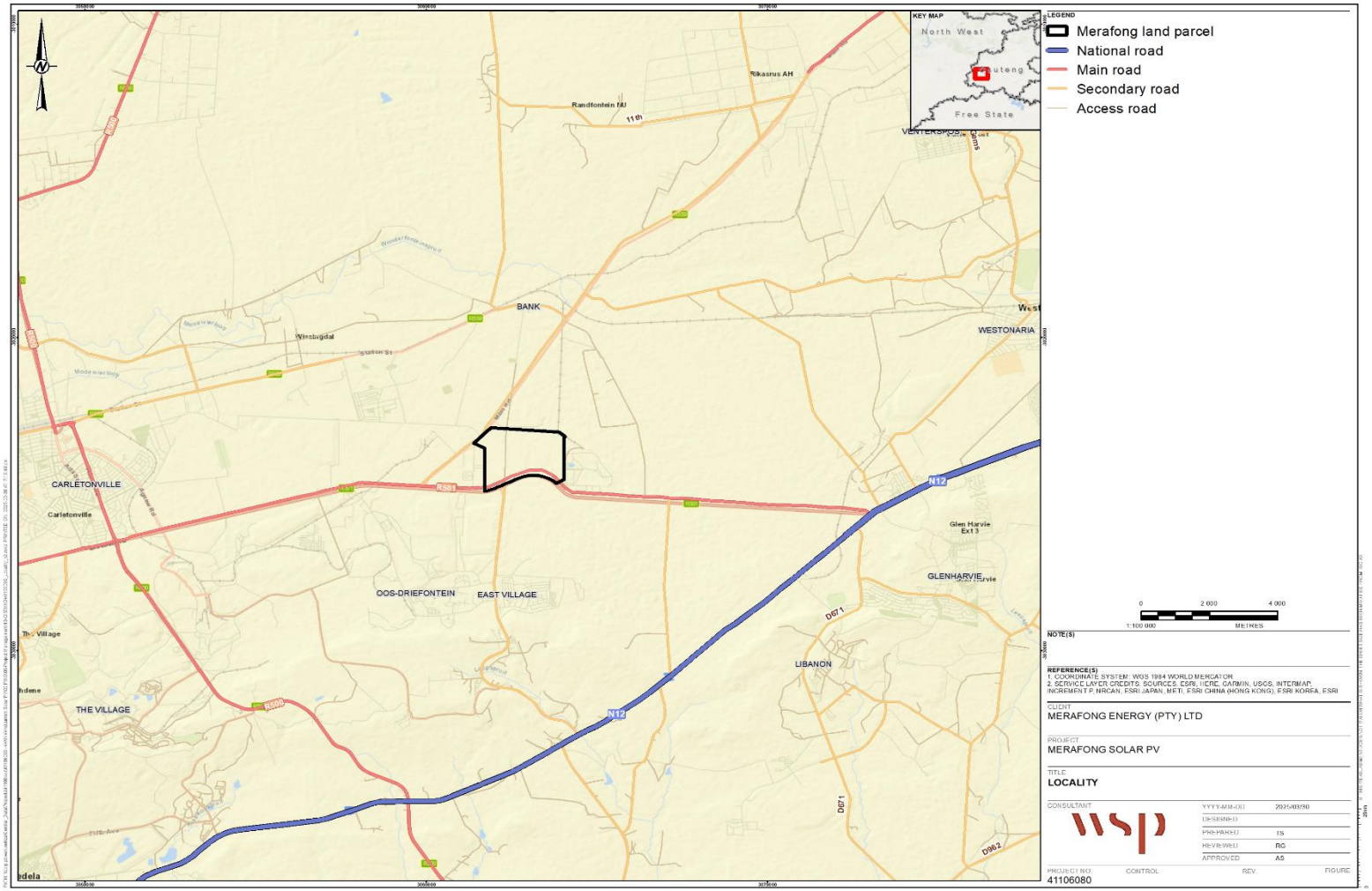


Figure 1-2 - Regional locality map of Merafong LILO Grid Connection

Figure 1-3 - Layout map of Merafong LILO Grid Connection

1.2 PURPOSE OF THE REPORT

The Standard, entitled "*Standard for the Development and Expansion of Transmission and Distribution Power Line Infrastructure*", has been prepared to provide rules under which activities associated with the development and expansion of solar photovoltaic facilities identified in terms of section 24(2)(a) and (b) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and contained in the Environmental Impact Assessment Regulations Listing Notice 1, 2 or 3 of 2014, promulgated under section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), are excluded from the requirement to obtain an environmental authorisation prior to commencement, while meeting the objectives of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

One of the guidance tools developed is the national web based environmental screening tool, which provides guidance on environmental sensitivities of a specific geographical location or site related to various identified environmental themes. Environmental sensitivities are rated as "very high", "high", "medium" or "low". In addition to the development of environmental management instruments, in 2022 the sector was professionalised with the requirement for an environmental assessment practitioner needing to be registered by the registration authority appointed by the Minister. The development of this Norm is part of the ongoing initiative to streamline the environmental legislative framework and to gain the benefits of the professionalisation of the environmental sector.

The Screening Report generated by the National Web-based Environmental Screening Tool contains a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development footprint as well as the most environmentally sensitive features on the footprint based on the footprint sensitivity screening results for the application classification that was selected.

A screening report for the Merafong LILO Grid Connection was generated on 30 April 2025 and is attached as **Appendix A**. The Screening Report for the project identified various sensitivities for the site.

1.3 ROLE PLAYERS

1.3.1 COMPETENT AUTHORITY

Section 24C(2)(a) of NEMA stipulates that the Minister of Forestry, Fisheries and the Environment ("the Minister") must be identified as the competent authority if the activity has implications for international environmental commitments or relations.

1.3.2 PROJECT PROPONENT

Merafong Energy (Pty) Ltd is the project proponent with regards to this application for the construction and operation of the Merafong LILO Grid Connection. **Table 1-1** provides the relevant details of the project proponent.

Table 1-1 - Details of Project Proponent

Proponent:	**Merafong Energy (Pty) Ltd**
Contact Person	Chris Botha
Postal Address	240 Main Road, Rondebosch, Cape Town Western Cape 7700
Telephone	079 578 4511

Proponent:	**Merafong Energy (Pty) Ltd**
Email	marshall@merchant.energy

1.3.3 ENVIRONMENTAL ASSESSMENT PRACTITIONER

WSP Group Africa (Pty) Ltd (WSP) has been appointed in the role of Independent Environmental Assessment Practitioner (EAP) to undertake the registration process for the development of the Project. The CV of the EAP together with proof of qualifications and professional registration is included in **Appendix B**. **Table 1-2** details the relevant contact details of the EAP. In order to adequately identify and assess potential environmental impacts, a number of specialists will support the EAP.

Table 1-2 - Details of the Environmental Assessment Practitioner

Environmental Assessment Practitioner (EAP)	**WSP Group Africa (Pty) Ltd**
Contact Person:	Ashlea Strong
Postal Address:	Building 1, Maxwell Office Park, Magwa Cres, Midrand, 1685
Telephone:	011 361 1392
Fax:	011 361 1381
E-mail:	Ashlea.Strong@wsp.com
Qualifications:	▪ Masters in Environmental Management, University of the Free State ▪ B Tech, Nature Conservation, Technikon SA ▪ National Diploma in Nature Conservation, Technikon SA
EAPASA Registration Number:	EAPASA (2019/1005)

Statement of Independence

Neither WSP nor any of the authors of this Report have any material present or contingent interest in the outcome of this Report, nor do they have any business, financial, personal, or other interest that could be reasonably regarded as being capable of affecting their independence. WSP has no beneficial interest in the outcome of the assessment.

1.3.4 SPECIALISTS

Table 1-5 outlines the specialists that provided input into this report. The relevant Curriculum Vitae together with proof of qualifications and professional registration is included in **Appendix C**.

Table 1-3 – Details of Specialists

Assessment	**Name of Specialist**	**Company**	**Sections in Report**	**Specialist Report attached as**
Agricultural Compliance Statement	Johann Lanz	Soil ZA	▪ Section 5.3.1	**Appendix D**

Assessment	Name of Specialist	Company	Sections in Report	Specialist Report attached as
Terrestrial Biodiversity Compliance Statement	Andrew Zinn	Hawkhead Consulting	▪ Section 5.3.3	**Appendix E**
Aquatic Biodiversity Compliance Statement	Rudolph Greffrath	WSP	▪ Section 5.3.3	**Appendix F**
Plant Species Compliance Statement	Andrew Zinn	Hawkhead Consulting	▪ Section 5.3.4	**Appendix E**
Animal Species Compliance Statement	Andrew Zinn	Hawkhead Consulting	▪ Section 5.3.5	**Appendix E**
Avifauna Verification Assessment	Megan Diamond	Feathers Environmental Services	▪ Section **Error! Reference source not found.**	**Appendix G**
Visual Impact Assessment	Johan Bothma	WSP	▪ Section 5.3.9	**Appendix I**
Heritage Assessment	Lara Lucija Kraljević	Beyond Heritage (Pty) Ltd	▪ Section 5.3.10	**Appendix J**
Palaeontological Assessments	Prof Marion Bamford	Beyond Heritage (Pty) Ltd	▪ Section 5.3.11	**Appendix H**

2 GOVERNANCE FRAMWORK

2.1 NATIONAL LEGISLATION

Table 2-1 outlines the National and Provincial Legislation most applicable to this registration process.

Table 2-1 – Applicable National and Provincial Legislation

Legislation	Description of Legislation and applicability
The Constitution of South Africa (No. 108 of 1996)	The Constitution cannot manage environmental resources as a stand-alone piece of legislation hence additional legislation has been promulgated to manage the various spheres of both the social and natural environment. Each promulgated Act and associated Regulations are designed to focus on various industries or components of the environment to ensure that the objectives of the Constitution are effectively implemented and upheld on an on-going basis throughout the country. In terms of Section 7, a positive obligation is placed on the State to give effect to the environmental rights.
National Environmental Management Act (No. 107 of 1998)	In terms of Section 24(2) of the NEMA, the Minister may identify activities, which may not commence without prior authorisation. The Minister thus published GNR 983 (as amended) (Listing Notice 1), GNR 984 (as amended) (Listing Notice 2) and GNR 985 (as amended) (Listing Notice 3) listing activities that may not commence prior to authorisation. The regulations outlining the procedures required for authorisation are published in the EIA Regulations of 2014 (GNR 982) (as amended). Listing Notice 1 identifies activities that require a BA process to be undertaken, in terms of the EIA Regulations, prior to commencement of that activity. Listing Notice 2 identifies activities that require an S&EIR process to be undertaken, in terms of the EIA Regulations, prior to commencement of that activity. Listing Notice 3 identifies activities within specific areas that require a BA process to be undertaken, in terms of the EIA Regulations, prior to commencement of that activity. WSP undertook a legal review of the listed activities according to the proposed project description to identify the NEMA listed activities considered applicable to the development. The proponent is applying to be excluded from the requirement to obtain an environmental authorisation prior to commencement, as outlined in the "*Standard for the Development and Expansion of Transmission and Distribution Power Line Infrastructure*". The listed activities that the client wishes to be excluded from are outlined in Section 2.2 below.
Standard for the Development and Expansion of Transmission and Distribution Power Line Infrastructure	Section 24(2)(c) - (e) enables the Minister, or Member of the Executive Council (MEC) in concurrence with the Minister, to identify activities and geographical areas within which activities may be excluded from the requirement to obtain environmental authorisation and section 24(2)(d) provides the ability to link such exclusions to compliance with prescribed norms or standards. This Standard, entitled "Standard for the Development and Expansion of Electricity Transmission and Distribution Power Line Infrastructure" (the Standard)5 is proposed to be adopted in terms of section 24(10)(a) of NEMA to allow for the exclusion, in terms of section 24(2)(d) of NEMA, of activities for the development and expansion of electricity transmission and distribution power line infrastructure as identified in Listing Notices 1 and 2 of the Environmental Impact Assessment Regulations, 2014 as amended (EIA Regulations), promulgated under section 24(5) of NEMA as well as any listed or specified activities necessary for the realisation of such infrastructure as described in the scope of this Standard. **The Merafong LILO Grid Connection is located within the Central Strategic Corridor, and all the relevant themes were verified as medium or low..**

Legislation	Description of Legislation and applicability
Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes (GNR 320, 20 March 2020 and GNR 1150, 30 October 2020)	The protocols provide the criteria for specialist assessment and minimum report content requirements for impacts for various environmental themes for activities requiring environmental authorisation. The protocols replace the requirements of Appendix 6 of the EIA Regulations, 2014, as amended. The assessment and reporting requirements of the protocols are associated with a level of environmental sensitivity identified by the national web based environmental screening tool (screening tool). The Screening Report was generated for the project on 10/03/2025 (**Appendix A**). The following environmental themes were applicable to the Merafong LILO Grid Connection: ▪ Agriculture Theme ▪ Animal Species Theme ▪ Aquatic Biodiversity Theme ▪ Plant Species Theme ▪ Terrestrial Biodiversity Theme ▪ Visual Theme ▪ Civil Aviation Theme ▪ Defence Theme
National Environmental Management: Waste Act (59 of 2008) (NEM:WA)	This Act provides for regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation. The Act also provides for the licensing and control of waste management activities through GNR. 921 (2013): List of Waste Management Activities that Have, or are Likely to Have, a Detrimental Effect on the Environment. The proposed project does not constitute a Listed Activity requiring a Waste Management Licence (WML) as defined in GNR 921. The Environmental Management Programme (EMPr) that will accompany the SSV Report, will include reasonable measures for the prevention of pollution and good international industry practice (GIIP).
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) was promulgated in June 2004 within the framework of NEMA to provide for the management and conservation of national biodiversity. The NEMBA's primary aims are for the protection of species and ecosystems that warrant national protection, the sustainable use of indigenous biological resources, the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources. In addition, the NEMBA provides for the establishment and functions of a South African National Biodiversity Institute (SANBI). SANBI was established by the NEMBA with the primary purpose of reporting on the status of the country's biodiversity and conservation status of all listed threatened or protected species and ecosystems. According to the NEMBA Threatened Ecosystems (2021), Carletonville Dolomite Grassland is not listed as a threatened ecosystem. A Biodiversity Assessment has been undertaken and is included in **Appendix E**.
National Environmental Management Protected Areas Act (No. 57 of 2003)	The purpose of the National Environmental Management Protected Areas Act (No. 57 of 2003) (NEMPAA) is to, inter alia, provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. To this end, it provides for the declaration and management of various types of protected areas. Section 50(5) of NEMPAA states that "no development, construction or farming may be permitted in a nature reserve or world heritage site without the prior written approval of the management authority." There are no protected areas within the study area. No nationally protected areas occur in close proximity to the proposed Project area. The Project areas does coincide with areas that have been identified as Priority Focus Areas as part of the National Protected Area Development Strategy (2016).

Legislation	Description of Legislation and applicability
Renewable Energy Development Zones and Strategic Transmission Corridors	On 16 February 2018, the DFFE gazetted the Renewable Energy Development Zones (REDZs) and Strategic Transmission Corridors and Procedures for the Assessment of Large-scale Wind and Solar Photovoltaic Energy Development Activities (GN 114) and Grid Connection (GN 113). Subsequently, on 26 February 2021 a further three REDZ were gazetted (GN 142). The procedure allows for wind and solar PV activities within the eight REDZs and electricity grid development within the five power corridors to be subjected to a BA and not a full S&EIR process. In addition, the timeframes associated with the decision on the application is reduced from 107 days to 57 days. **The Merafong LILO Grid Connection is not located within a REDZ but is located within the Central Strategic Corridor.**
The National Heritage Resources Act (No. 25 of 1999)	The National Heritage Resource Act (Act No. 25 of 1999) (NHRA) serves to protect national and provincial heritage resources across South Africa. The NHRA provides for the protection of all archaeological and palaeontological sites, the conservation and care of cemeteries and graves by the South African Heritage Resources Agency (SAHRA), and lists activities that require any person who intends to undertake to notify the responsible heritage resources agency and furnish details regarding the location, nature, and extent of the proposed development. Part 2 of the NHRA details specific activities that require a Heritage Impact Assessment (HIA) that will need to be approved by SAHRA. Parts of Section 35, 36 and 38 apply to the proposed project, principally: ▪ Section 35 (4) - No person may, without a permit issued by the responsible heritage resources authority- ▪ destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite; ▪ destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite. ▪ Section 38 (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as- • any development or other activity which will change the character of a site— (i) exceeding 5 000 m^2 in extent, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development. In terms of Section 38(8), approval from the heritage authority is not required if an evaluation of the impact of such development on heritage resources is required in terms of any other legislation (such as NEMA), provided that the consenting authority ensures that the evaluation of impacts fulfils the requirements of the relevant heritage resources authority in terms of Section 38(3) and any comments and recommendations of the relevant resources authority with regard to such development have been taken into account prior to the granting of the consent. However, should heritage resources of significance be affected by the proposed Merafong LILO Grid Connection, a permit is required to be obtained prior to disturbing or destroying such resources as per the requirements of Section 48 of the NHRA, and the SAHRA Permit Regulations (GN R668). A Heritage Verification Assessment (Appendix J) has been carried out by a suitably qualified specialist, Beyond Heritage, revealing: The field survey of the PV area noted high levels of surface disturbances from both agricultural and mining activities. The PV area (inclusive of the LILO Grid Connection) is considered to be of low heritage potential and only a degraded cement foundation of low significance was identified. No other surface finds were present within the PV area. To comply with the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) and with cognisance of known heritage resources in the area, the proposed project will be loaded onto the SAHRIS portal for comment by the provincial Heritage Resource Agency.

Legislation	Description of Legislation and applicability
Noise Control Regulations in terms of the Environmental Conservation, 1989 (Act 73 of 1989)	In South Africa, environmental noise control has been in place for three decades, beginning in the 1980s with codes of practice issued by the South African National Standards (formerly the South African Bureau of Standards, SABS) to address noise pollution in various sectors of the country. Under the previous generation of environmental legislation, specifically the Environmental Conservation Act 73 of 1989 (ECA), provisions were made to control noise from a National level in the form of the Noise Control Regulations (GNR 154 of January 1992). In later years, the ECA was replaced by the National Environmental Management Act 107 of 1998 (NEMA) as amended. The National Environmental Management: Air Quality Act 39 of 2004 (NEMAQA) was published in line with NEMA and contains noise control provisions under Section 34: (1) The minister may prescribe essential national standards – (a) for the control of noise, either in general or by specific machinery or activities or in specified places or areas; or (b) for determining – (i) a definition of noise; and (ii) the maximum levels of noise. (2) When controlling noise, the provincial and local spheres of government are bound by any prescribed national standards. Under NEMAQA, the Noise Control Regulations were updated and are to be applied to all provinces in South Africa. The Noise Control Regulations give all the responsibilities of enforcement to the Local Provincial Authority, where location specific by-laws can be created and applied to the locations with approval of Provincial Government. Where province-specific regulations have not been promulgated, acoustic impact assessments must follow the Noise Control Regulations. Furthermore, NEMAQA prescribes that the Minister must publish maximum allowable noise levels for different districts and national noise standards. These have not yet been accomplished and as a result all monitoring and assessments are done in accordance with the South African National Standards (SANS) 10103:2008 and 10328:2008.
Conservation of Agricultural Resources Act (No. 43 of 1983)	The Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA) provides for the implementation of control measures for soil conservation works as well as alien and invasive plant species in and outside of urban areas. In terms of the amendments to the regulations under the CARA, landowners are legally responsible for the control of alien species on their properties. Various Acts administered by the DFFE and the DWS, as well as other laws (including local by-laws), spell out the fines, terms of imprisonment and other penalties for contravening the law. Although no fines have yet been placed against landowners who do not remove invasive species, the authorities may clear their land of invasive alien plants and other alien species entirely at the landowners' cost and risk. The CARA Regulations with regards to alien and invasive species have been superseded by NEMBA Alien and Invasive Species (AIS) Regulations which became law on 1 October 2014.
Occupational Health and Safety Act (No. 85 of 1993)	The National Occupational Health and Safety Act (No. 85 of 1993) (OHSA) and the relevant regulations under the Act are applicable to the proposed project. This includes the Construction Regulations promulgated in 2014 under Section 43 of the Act. Adherence to South Africa's OHSA and its relevant Regulations is essential.
National Energy Act (No. 34 of 2008)	The National Energy Act aims to ensure that diverse energy resources are available, in sustainable quantitates, and at affordable prices, to the South African economy in support of economic growth and poverty alleviation, taking into account environmental management requirements and interactions amongst economic sectors. The main objectives of the Act are to: ■ Ensure uninterrupted supply of energy to the Republic; ■ Promote diversity of supply of energy and its sources;

Legislation	Description of Legislation and applicability
	▪ Facilitate effective management of energy demand and its conservation; ▪ Promote energy research; ▪ Promote appropriate standards and specifications for the equipment, systems and processes used for producing, supplying and consuming energy; ▪ Ensure collection of data and information relating to energy supply, transportation and demand; ▪ Provide for optimal supply, transformation, transportation, storage and demand of energy that are planned, organised and implemented in accordance with a balanced consideration of security of supply, economics, consumer protection and a sustainable development; ▪ Provide for certain safety, health and environment matters that pertain to energy; ▪ Facilitate energy access for improvement of the quality of life of the people of Republic; ▪ Commercialise energy-related technologies; ▪ Ensure effective planning for energy supply, transportation, and consumption; and ▪ Contribute to sustainable development of South Africa's economy. In terms of the act, the Minister of Energy is mandated to develop and, on an annual basis, review and publish the Integrated Energy Plan (IEP) in the Government Gazette. The IEP analyses current energy consumption trends within different sectors of the economy (i.e. agriculture, commerce, industry, residential and transport) and uses this to project future energy requirements, based on different scenarios. The IEP and the Integrated Resource Plan are intended to be updated periodically to remain relevant. The framework is intended to create a balance between energy demand and resource availability so as to provide low-cost electricity for social and economic development, while taking into account health, safety and environmental parameters.
Electricity Regulation Act (No. 4 of 2006)	The Electricity Regulation Act (No. 4 of 2006) (ERA) aims to: ▪ Achieve the efficient, effective, sustainable and orderly development and operation of electricity supply infrastructure in South Africa; ▪ Ensure that the interests and needs of present and future electricity customers and end users are safeguarded and met, having regard to the governance, efficiency. effectiveness and long-term sustainability of the electricity supply industry within the broader context of economic energy regulation in the Republic: ▪ Facilitate investment in the electricity supply industry; ▪ Facilitate universal access to electricity; ▪ Promote the use of diverse energy sources and energy efficiency; ▪ Promote competitiveness and customer and end user choice; and ▪ Facilitate a fair balance between the interests of customers and end users, licensees, investors in the electricity supply industry and the public. The Act establishes a National Energy Regulator as the custodian and enforcer of the National Electricity Regulatory Framework. The Act also provides for licenses and registration as the manner in which generation, transmission, distribution, trading and the import and export of electricity are regulated.
The Gauteng Provincial Employment, Growth and Development Strategy (GEGDS)	The Gauteng Provincial Employment, Growth and Development Strategy (GEGDS) identifies the need for creating accessible and decent work within a growing, sustainable, and inclusive economy as a priority for the province. The GEGDS aims to address the deep structural weaknesses within the economy that has yielded persistent high unemployment and excluded marginalized populations despite the economic growth of the region. Key aims of GEGDS: ▪ Provide a framework within which relevant government departments can develop and/or refine their strategic policy interventions or drivers, while creating decent work and building a growing, inclusive economy. ▪ Identify effective interventions for provincial government to mitigate the impact of economic crises while initiating programmes that can maximise (decent) employment creation in the medium term. ▪ Address inequality through the investment in people and the progressive realisation of decent jobs. ▪ Support social cohesion through interventions that directly contribute towards employment creation and a healthy, well-nourished, and safe labour force.

Legislation	Description of Legislation and applicability
	▪ Highlight the need for effective monitoring, reviewing, and evaluating of the various interventions or drivers. ▪ To act as the framework that leads to the Gauteng Growth Path, which is the living or real implementation of the GEGDS. To achieve this GEGDS proposes necessary and profound structural changes to the Gauteng economy that are based on a rapid shift to an endogenous economy rooted in three key factors: ▪ Innovation. ▪ Green Growth. ▪ Inclusivity. There are three integral components that make up the strategy, namely: the seven foundational provincial priorities, the five strategic pillars, and seven cross-cutting drivers. The foundational provincial priorities of relevance include: ▪ Creating Decent Work and Building a Sustainable and Inclusive Economy. ▪ Building Cohesive and Sustainable Communities including Spatial Development. This GEGDS outlines the strategic interventions by which Gauteng will work to make this innovating, green and inclusive economy a reality. These interventions are organised into five strategic pillars. The strategic pillars of relevance include: ▪ Transforming the provincial economy through improved efficiency. ▪ Sustainable employment creation. ▪ Sustainable communities and social cohesion. Each pillar contains several government interventions, which enable them to implement this strategy. These are called drivers. Cross-cutting drivers of relevance include: ▪ Green Economy and Sustainable Energy Usage. ▪ Innovation and the Knowledge Economy. ▪ Infrastructure – Strategic, Socio-economic and Bulk. ▪ Green Jobs. ▪ Spatial Planning.
Gauteng Provincial Spatial Development Framework (2030)	The Gauteng Provincial Spatial Development Framework (GSDF) 2030 aspires to establish a compact urban form that has a balanced, polycentric spatial network, with strong and resilient nodes enabling mutually beneficial exchanges of goods and services, and movement of people as well as the protection of green spaces and sustainable energy use. To support this vision, four spatial development strategies are to be followed: ▪ Capitalising on proximity. ▪ Managing new settlement development. ▪ Building an economic network. ▪ Creating a viable and productive hinterland. The effective provision and maintenance of bulk infrastructure, including energy production, is prioritised within the capitalising on proximity strategy. Ten high-priority provincial spatial development proposals are outlined. While none focus specifically on energy production, the following are important in terms of conservation and bulk infrastructure development: ▪ Municipal urban growth management. ▪ Strengthening and enhancing agricultural production and agro-processing. ▪ Actively pursuing environmental management and eco-system protection. ▪ Boosting and optimising provincial tourism opportunities. ▪ The GSDF notes that the West Rand District Municipality (WRDM) is currently operating at near capacity in terms of energy production and the lack of stable generation capacity from current providers act as a major constraint to economic development and investor confidence. The GSDF also notes that Merafong's electricity network was not designed to supply the developments and extensions that are currently underway in the district.

Legislation	Description of Legislation and applicability
Gauteng Integrated Energy Strategy (2012)	The aim of the Gauteng Integrated Energy Strategy (GIES) is to direct the energy supply and consumption of the Gauteng province over the next five to forty-five years by integrating and supporting sustainable energy and climate change initiatives, both locally and internationally. The key goals of this strategy include: ▪ Providing the leadership and institutional framework required to drive the strategy. ▪ Implementing strong energy efficient measures. ▪ Facilitating the development and growth of renewable and alternative energy options. ▪ Supporting the move towards a low carbon economy. ▪ Prioritising energy security and access to safe, clean, and affordable energy. ▪ Developing and growing the alternative and energy efficiency industry as a critical aspect of Gauteng's economy. The relative policy implications include: ▪ Shifting to a low carbon economy. ▪ Maximizing the use of local energy resources. ▪ Development of the renewable energy industry as an employment creation opportunity. ▪ The GIES hopes to achieve a low carbon economy, Gauteng as a hub of innovation, focused on clean energy technology, decentralised energy generation-micro generation, as well as clean and renewable energy contributing 50% of the total energy mix of the province.
Growing Gauteng Together 2030	Growing Gauteng Together 2030 (GGT2030) is a plan of action realised by the Gauteng government to drive the province towards a more sustainable and inclusive future. The plan includes seven priorities that are to be executed to achieve this vision. The relevant priorities include: ▪ The Economy, Jobs, and Infrastructure. ▪ Integrated Human Settlements and Land Release. ▪ Safety, Social Cohesion and Food Security. ▪ Sustainable Development for Future Generations. ▪ This vision will be implemented along five developmental corridors of Gauteng. The Western Development Corridor includes WRDM, and the focus is around diversifying the district economy to include tourism, agriculture, and agro-processing, and renewable energy projects.
Merafong City Local Municipality Integrated Development Plan (2020)	The vision for the Merafong City Local Municipality (MCLM) Integrated Development Plan (IDP) is "A prosperous, Sustainable and Community-oriented City". The Key Performance Areas (KPA) adopted by the municipality to realise this vision are: ▪ KPA 1: Basic Service Delivery ▪ KPA 2: To Promote Local Economic Development ▪ KPA 3: To Promote Municipal Transformation & Organisational Development ▪ KPA 4: To ensure Municipal Financial Viability & Management ▪ KPA 5: To ensure Good Governance and Public Participation ▪ KPA 6: Spatial Development Framework There are various Development Strategies of Merafong Municipality, which are informed by a Strategic Turn-Around plan developed during a strategic review session held in 2018. Of relevance to the project is the Electricity Supply Strategy (2020/2021), which identifies a variety of strategic interventions for the municipality. The Strategic Turnaround Plan is aligned to 14 regional outcomes, with Outcome 1: Provision of Basic Service Delivery as well as Outcome 8: Sustainable Environment being relevant to the project. The MCLMIDP notes that the status of the current Energy Plan needs to be re-assessed to integrate with the greater West Rand Plan.
Merafong City Local Municipality Spatial Development Framework (2019)	Merafong Spatial Development Framework (MSDF), forms part of a hierarchy of plans that consolidate into the IDP. It concentrates on the spatial aspects of development planning and identifies the opportunities and constraints associated with the district. The Merafong City's SDF proposes the following structuring tools:

Legislation	Description of Legislation and applicability
	▪ Improve urban efficiency and rectify Apartheid spatial disparities through realigning the urban structure of Merafong settlements into three distinct urban areas. ▪ Improve urban and rural liveability where basic needs are met, the cost of living is bearable, amenities and employment are accessible, and urban space is aesthetically pleasing and healthy. ▪ Facilitate sustainable economic growth and diversification, through identified strategic nodes, which include a bio-energy eco-industrial park. ▪ Protect natural and agricultural resources to ensure a sustainable coexistence between urban, mining, agricultural and ecological land uses. Opportunities in the MSDF of relevance to the project include a Bioenergy Agro-Industrial Park and the Merafong Solar Farm Cluster Concept. Additionally, the adaptation of unsustainable, unused, or old mines and mine dumps for reuse or rehabilitation also presents an opportunity. The mines Driefontein North and Kusasalethu/Elandsrand were identified as particularly promising for the establishment of solar farms or other renewable energy sources.

2.2 SCOPE OF REGISTRATION

Table 2-2 outlines the listed activities applicable to the proposed project from which the Proponent wishes to be excluded.

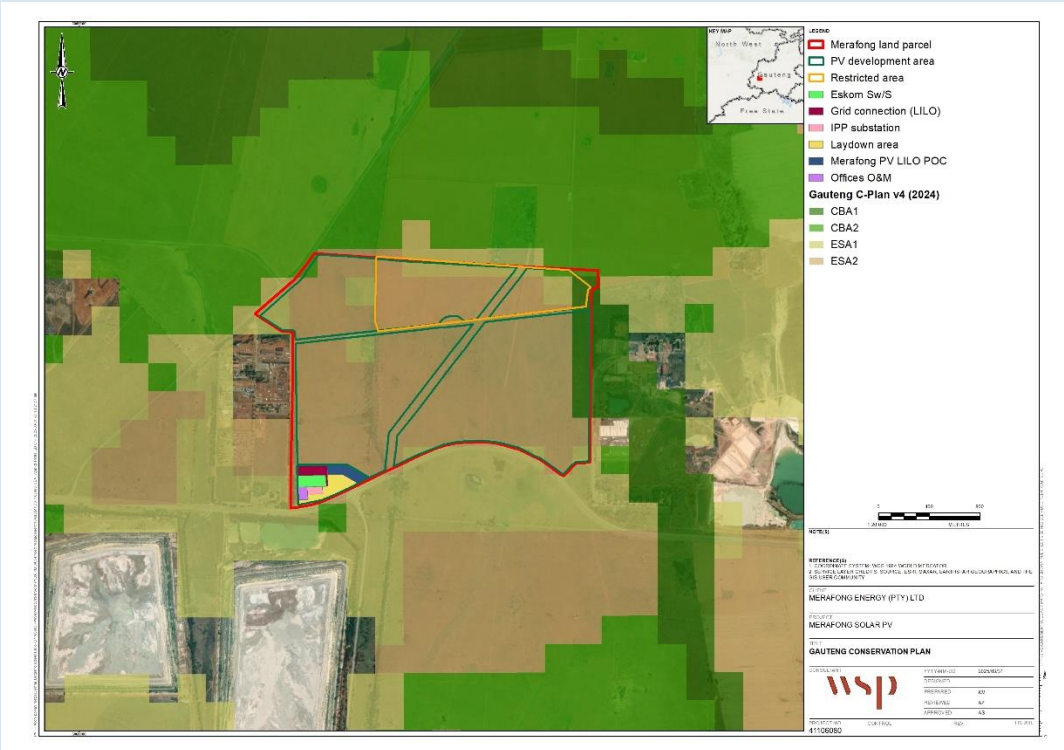
Table 2-2 - Listed activities applicable for exclusion

Listed Activity	Description
GNR 983 (as amended) (Listing Notice 1)	
Activity 11 (i): The development of facilities or infrastructure for the transmission and distribution of electricity— (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more; excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is — (a) temporarily required to allow for maintenance of existing infrastructure; (b) 2 kilometres or shorter in length; (c) within an existing transmission line servitude; and (d) will be removed within 18 months of the commencement of development.	The proposed Solar PV Facility will include an up to 132kV LILO OHPL that will connect to the switching station. This activity is therefore considered applicable for the Grid Connection.
Activity 24 (ii) The development of a road— (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres.	The proposed access road to the LILO Grid Connection and associated substation will be 8 metres wide.

Listed Activity	Description
Activity 27: The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	The LILO Grid Connection and associate infrastructure (such as the switching station), will require the clearance of more than 1 hectare of indigenous vegetation.
Activity 28: Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.	The LILO Grid Connection and associate infrastructure (such as the switching station), is located outside an urban area and will require the clearance of more than 1 hectare of indigenous vegetation.

GNR 985 (as amended) (Listing Notice 3)

GNR 985 (as amended) (Listing Notice 3) is not applicable as the LILO Grid Connection site is not located within any CBA areas according to the Gauteng Conservation Plan (C-Plan) V4.



3 STAKEHOLDER ENGAGEMENT

Stakeholder engagement (public participation) is a requirement of the registration process. It consists of a series of inclusive and culturally appropriate interactions aimed at providing stakeholders with opportunities to express their views, so that these can be considered and incorporated into the registration of Exclusion of EA decision-making process. Effective engagement requires the prior disclosure of relevant and adequate project information to enable stakeholders to understand the risks, impacts, and opportunities of the proposed project. The objectives of the stakeholder engagement process can be summarised as follows:

- Identify relevant individuals, organisations and communities who may be interested in or affected by the proposed project;
- Clearly outline the scope of the proposed project, including the scale and nature of the existing and proposed activities;
- Identify viable proposed project alternatives that will assist the relevant authorities in making an informed decision;
- Identify shortcomings and gaps in existing information;
- Identify key concerns, raised by Stakeholders that should be addressed in the specialist studies;
- Highlight the potential for environmental impacts, whether positive or negative; and
- To inform and provide the public with information and an understanding of the proposed project, issues, and solutions.

A Comments and Response Report (C&R) will be compiled and included in the Final SSVR for submission to the DFFE with the application for registration.

3.1 STAKEHOLDER IDENTIFICATION

Stakeholders were identified through several mechanisms. These include:

- Utilising existing databases from other projects in the area;
- Networking with local business owners, non-governmental agencies, community based organisations, and local council representatives;
- Field work in and around the project area;
- Advertising in the press;
- Placement of community notices;
- Completed comment sheets; and
- Attendance registers at meetings.

All Stakeholders identified to date have been registered on the project stakeholder database. The EAP endeavoured to ensure that individuals/organisations from referrals and networking were notified of the Proposed Project. Stakeholders were identified at the horizontal (geographical) and vertical extent (organisations level).

A list of stakeholders captured in the project database is included in **Appendix K.1**.

3.2 STAKEHOLDER NOTIFICATION

3.2.1 DIRECT NOTIFICATION

Notification of the proposed Project will be issued to potential Stakeholders, via direct correspondence (i.e., site notices and e-mail) on **06 June 2025**. The notification letter that was

circulated is included in **Appendix K.2**. Proof of notification will be included the Final SSVR for submission to the DFFE with the application for registration.

3.2.2 NEWSPAPER ADVERTISEMENTS

In accordance with the requirements of GNR 4557, the proposed project has been advertised in a local newspaper in English, Afrikaans and IsiZulu. The purpose of the advertisement was to notify the public about the proposed project and registration process and to invite them to register as stakeholders. Copies of the advertisements and proof of publication are included in **Appendix K.3**. The relevant advertisement dates are listed in **Table 3-1**.

Table 3-1: Dates on which the Adverts were published

Newspaper	Publication Date	Language
Carletonville Herald	06 June 2025	English, Afrikaans and Sesotho

3.2.3 SITE NOTICES

The official site notices will be erected as per GNR 4557, as amended, on the boundary fence of the proposed site. In addition, general project notices, announcing the Proposed Project and inviting stakeholders to register, were placed at various locations in and around the project area. A copy of the site notice is included in **Appendix K.4**. Proof of placement will be included in the Final SSVR for submission to the DFFE with the application for registration.

3.3 PUBLIC REVIEW

The SSVR and EMPr will be made available for public review for a period of 30 days from **06 June 2025** to **07 July 2025,** at the following public places:

- Carletonville Library;
- Fochville Library;
- WSP website - https://www.wsp.com/en-za/services/public-documents
- WSP datafree website - https://wsp-engage.com/

This SSVR, inclusive of all comments and responses received during the public review period, will be submitted to the DFFE for approval.

3.4 COMMENT AND RESPONSE REPORT

All concerns, comments, viewpoints, and questions (collectively referred to as ‘issues’) received during the comment period will be documented and responded to adequately in the C&R report which will be included in the Final SSVR. Where comments are project specific, this will be noted in the C&R report. This will record the following:

- List of all issues raised;
- Record of who raised the issues;
- Record of where the issues were raised;
- Record of the date on which the issue was raised; and
- Response to the issues.

It should be noted that the Draft SSVR will be submitted to the provincial authority (GDARDE) for comment.

4 PROJECT DESCRIPTION

4.1 LOCATION OF THE PROPOSED PROJECT

The proposed study area is situated east of Carletonville and west of Westonaria within the Merafong City Local Municipality in the West Rand District Municipality of Gauteng, South Africa. The proposed Merafong SEF will be developed within a project area of approximately 311 hectares (ha). The site will be accessed via N12 to the R501, and the R559 as illustrated in **Figure 4-1**.

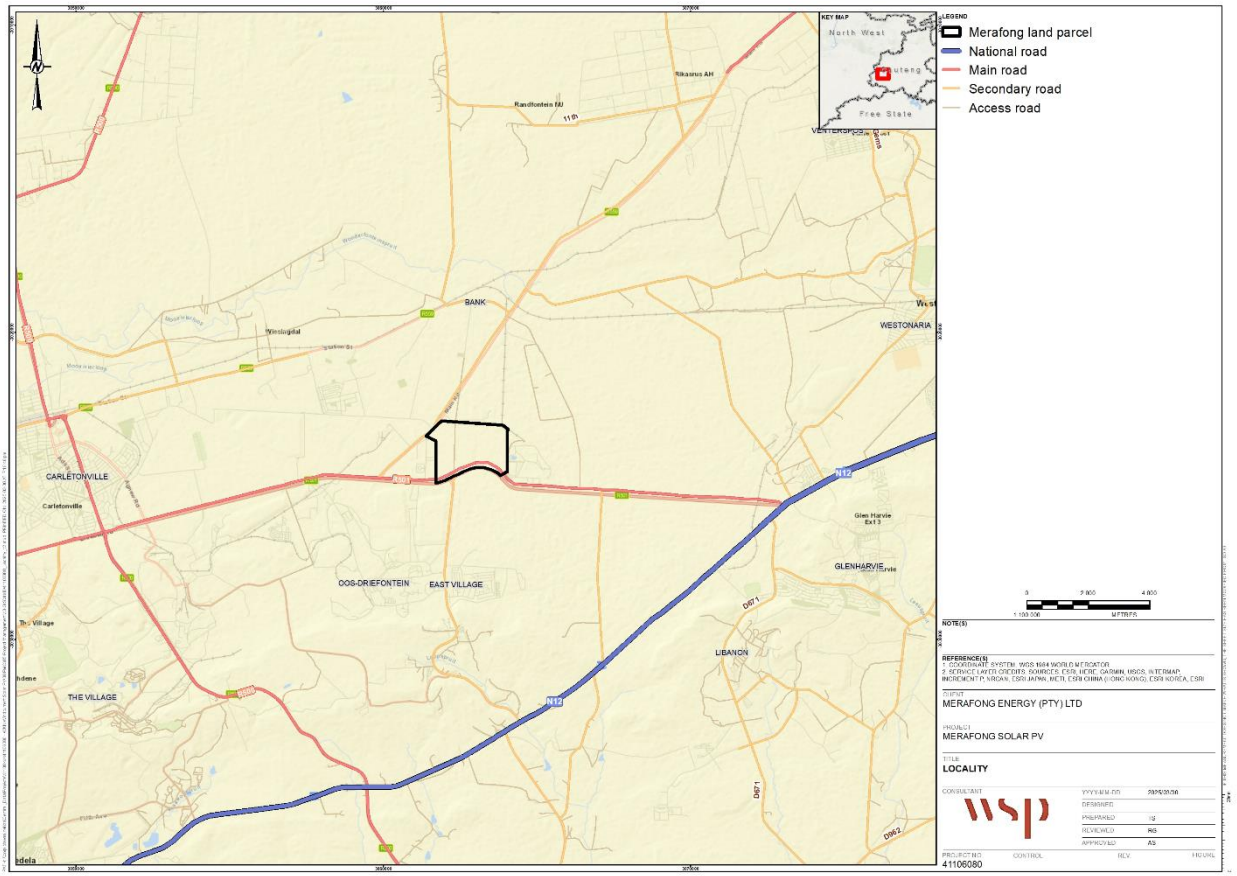
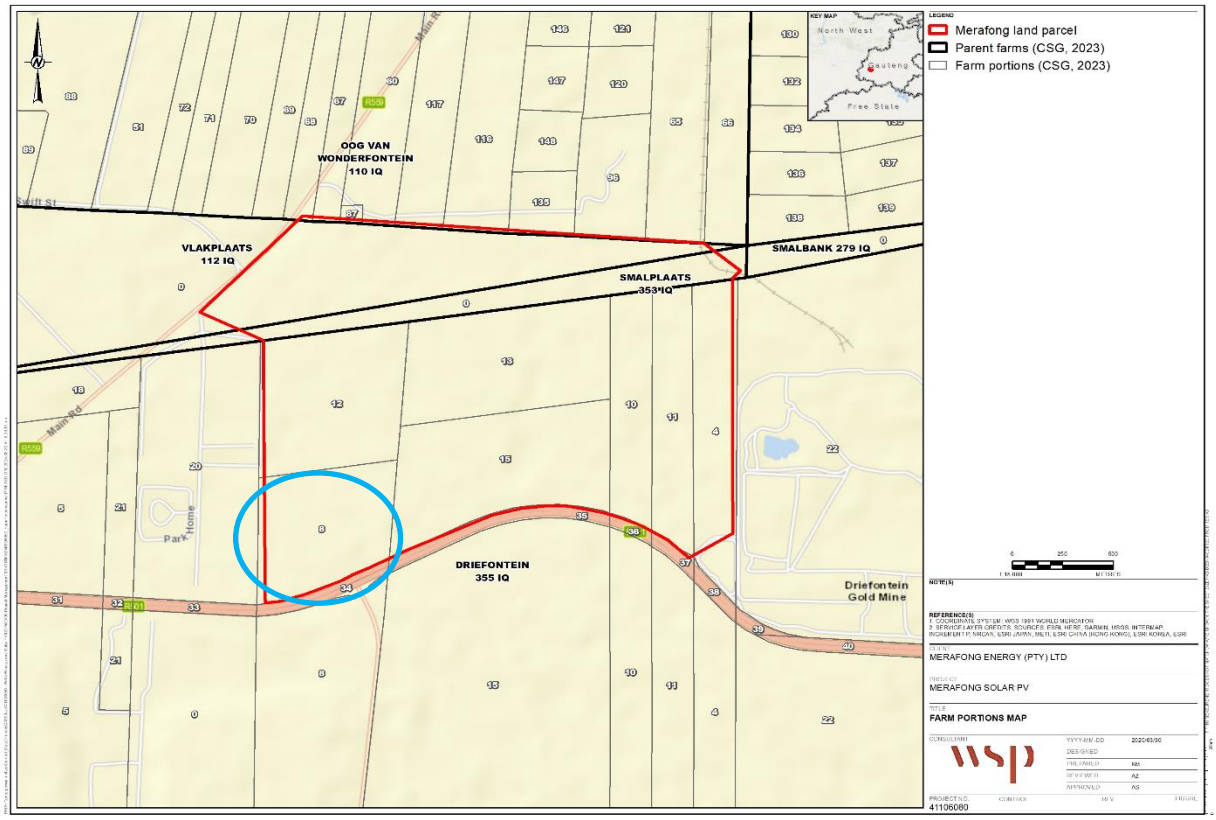


Figure 4-1 – Merafong Locality map

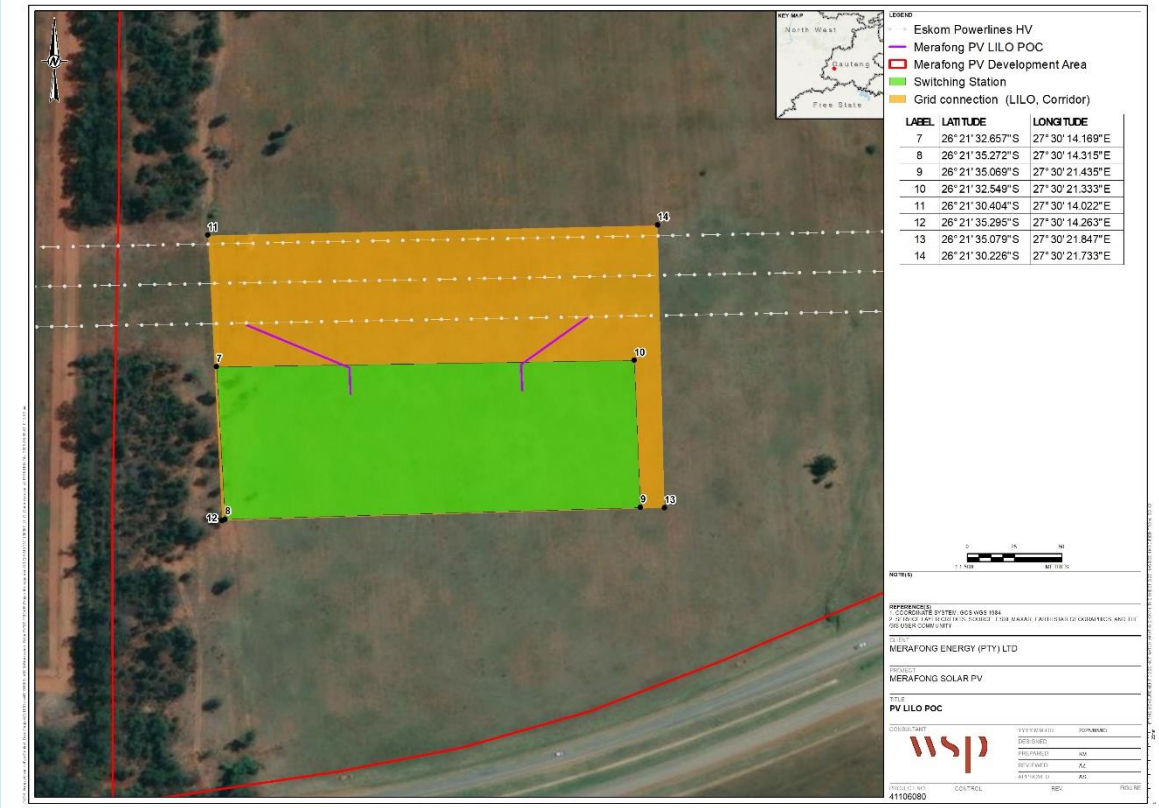
The details of the property associated with the Proposed Project, including the 21-digit Surveyor General (SG) codes for the cadastral land parcel is outlined in **Table 4-1.**

Table 4-1 – Merafong Facility Affected Farm Portion for the LILO

Farm Name	21 Digit Surveyor General Code of Each Cadastral Land Parcel
	
Driefontein 355 Portions 8 Highlighted by the blue circle above	T0IQ00000000035500008

The coordinates of the various development areas are provided in **Table 4.2.**

Table 4-2 – Merafong LILO Grid Connection Co-ordinates

Component	Longitude	Latitude
		
7 (Switching station)	27° 30' 14.169" E	26° 21' 32.657" S
8 (Switching station)	27° 30' 14.315" E	26° 21' 35.272" S
9 (Switching station)	27° 30' 21.435" E	26° 21' 35.069" S
10 (Switching station)	27° 30' 21.333" E	26° 21' 32.549" S
11 (LILO Connection Corridor)	27° 30' 14.022" E	26° 21' 30.404" S
12 (LILO Connection Corridor)	27° 30' 14.263" E	26° 21' 35.295" S
13(LILO Connection Corridor)	27° 30' 21.847" E	26° 21' 35.079" S
14 (LILO Connection Corridor)	27° 30' 21.733" E	26° 21' 30.226" S

4.2 ELECTRICAL POWER TRANSMISSION AND DISTRIBUTION

Electricity is carried at high voltages (kilovolts, or kV) along transmission lines in order to reduce the electrical losses that occur over long distances between power generation and consumption points. In order for electricity to be transmitted safely and efficiently over long distances, it must be at a high voltage and a low current.

The voltages at which power is generated at the power generation facility are too low for transmission over long distances. To overcome this problem, transformers are installed at the power stations and substations to increase the voltage level. Transformer's step-up the voltage from, for example, 11 or 22 kV to higher voltages such as 66 kV, 132kV, 220 kV, 275 kV, 400 kV or 765 kV, and feed the generated power into Eskom's national grid.

When the electricity arrives at a distribution substation, bulk supplies of electricity are taken for primary distribution to towns and industrial areas, groups of villages, farms and similar concentrations of consumers. The lines are fed into intermediate substations where transformers reduce (step-down) the voltage level. This could be 11 kV in large factories and 380/220 Volts in shops and homes. Power is distributed to end-users via reticulation power lines and cables. Figure illustrates a typical distribution system.

As of March 2019, South Africa's transmission network comprised 32,802 km of line length, 167 substations and 152,135 MVA of transformer capacity. All the high voltage lines, plus the transformers and related equipment, form the transmission system also known as the national grid.

4.2.1 COMPONENTS OF A TYPICAL TRANSMISSION LINE SYSTEM

The main components of a typical electrical transmission system include the following:

Transmission Structures

Transmission structures are the most visible components of the power transmission system. Their function is to inter alia, keep the high-voltage conductors separated from their surroundings and from each other. Some structure designs reflect the specific function of the structure, while others have come about as a result of technological progress.

Conductors

Conductors carry the power through and from the grid. Generally, several conductors per phase are strung from structure to structure. The number of conductors per phase depends on the performance of the line, typically, more than one conductor per phase is used when the operating voltage exceeds 132kV. Conductors are constructed primarily of aluminium, aluminium-alloy, steel or other types of materials as appropriate.

Substations

The very high voltages used for power transmission are converted at substations to lower voltages for further distribution and consumer use. Substations vary in size and configuration but may cover several hectares; they are cleared of vegetation and typically surfaced with gravel. They are fenced, and are normally reached by a permanent access road. In general, substations include a variety of indoor and outdoor electrical equipment such as switchgear, transformers, control and protection panels and batteries, and usually include other components such as control buildings, fencing, lighting etc.

For the substation to perform it needs sophisticated protection equipment to detect faults and abnormal conditions that may occur on the network. Action may consist for example, of automatically tripping a transmission line to cater for abnormal conditions such as lightning strikes, fires or trees falling on transmission lines. This action is necessary for safety reasons in the event of an accident or to maintain electricity supply and limit the disruption caused.

Figure 4-2 provides an illustration of a typical substation layout.

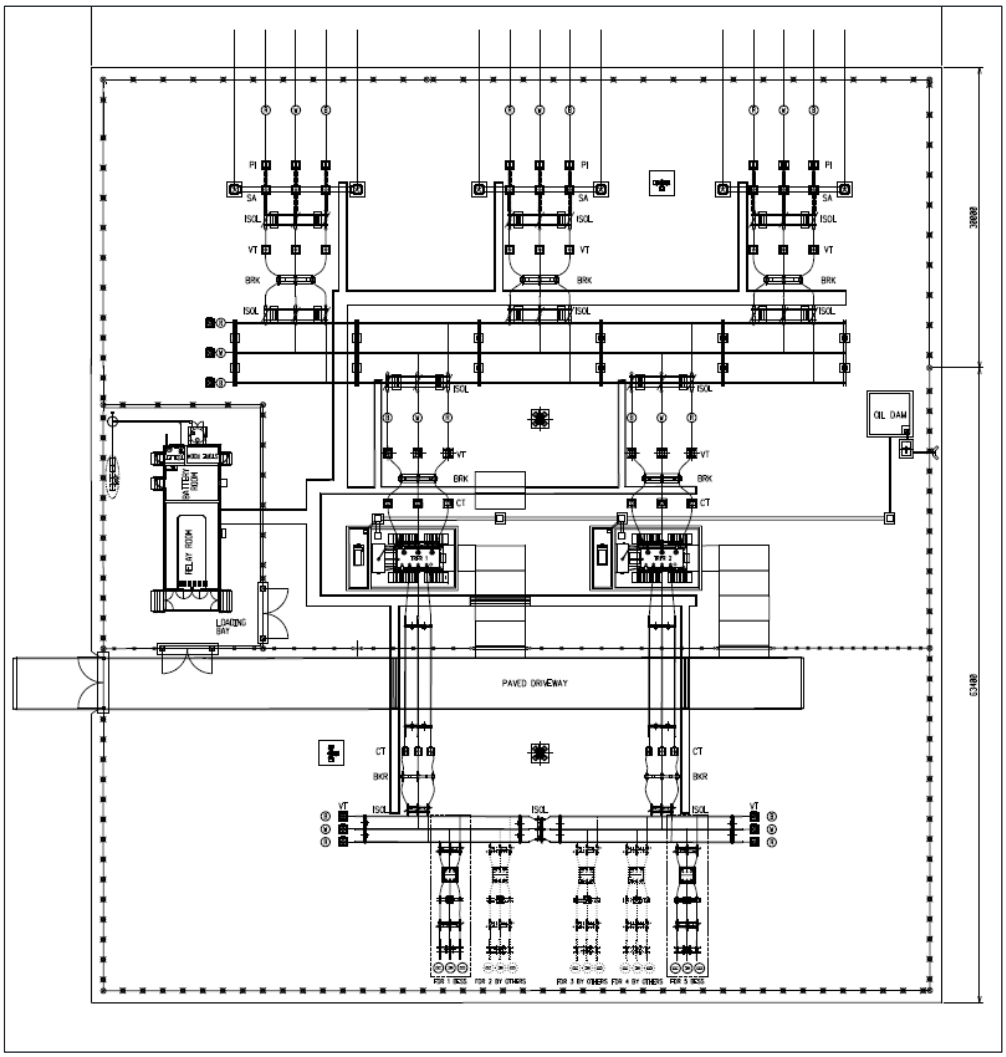


Figure 4-2: Typical Substation Layout (note: for illustration purposes only)

Transformers

Transformers are major items found in a transmission or distribution substation. There may be a number of different types of transformers in a substation such as power transformers, voltage transformers or current transformers.

A power transformer is a very simple device piece of electrical equipment where alternating current (AC) is led through a primary coil of wire, which produces an alternating magnetic field in the ring-shaped core of soft iron. This in turn creates a voltage in a secondary coil, from which the output current can be drawn. If the secondary coil has more turns than the primary coil, the output voltage is higher than the input voltage. This is a step-up transformer. A step-down transformer has more turns in the primary coil than in the secondary coil to reduce the voltage.

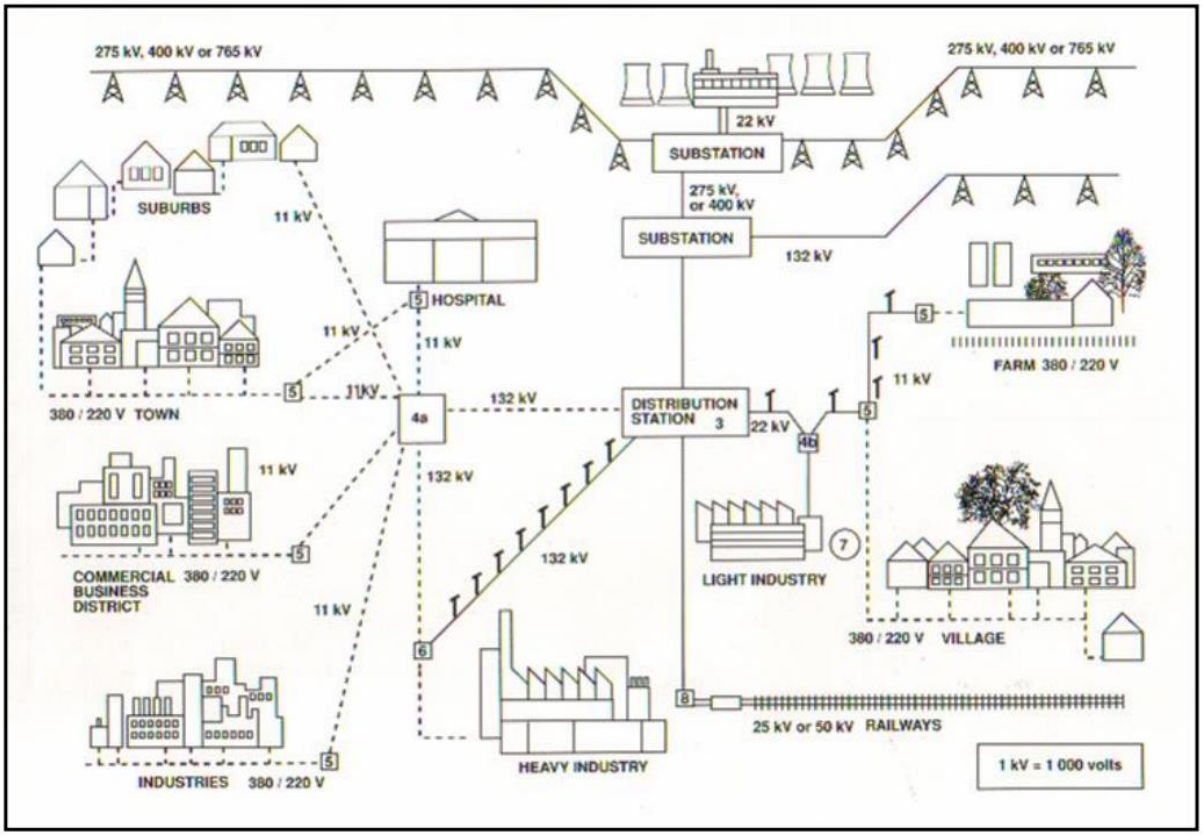


Figure 4-3: Typical Distribution System (note: for illustration purposes only)

4.3 PROJECT INFRASTRUCTURE

The proposed project entails the construction of 1 x up to 132kV LILO OHPL at the proposed Merafong SEF located east of Carletonville and west of Westonaria within the Merafong City Local Municipality, in Gauteng.

The proposed project will thus comprise the following key components:

- Construction of 1 x up to 132kV transmission line. A LILO corridor is assessed, which will include two connecting powerlines (LILO) into the existing Eskom 132kV transmission powerline line towards the South-West of the project site.
- Establishment of the switching station (with a footprint of approximately 1.57ha) at the project site.

4.3.1 COMPONENTS OF THE TRANSMISSION LINES

A brief overview of the physical/technical requirements of the project is as follows:

- 1 x up to 132kV transmission line with the LILO alternative, connecting lines of similar specification are assessed.
- Straight line distance between Merafong SEF is approximately 365m from the assessed switching station.
- Servitude width for 1 x up to 132kV transmission line is 53m to 55m for LILO option.

- Height of 1 x 132kV power line structure is on average 48m, but may reach up to 50m for dual circuit designs or in exceptional circumstances depending on the complexity and slope of the terrain. The maximum height for an up to 132kV powerline structure is 40m.
- Minimum conductor clearance is between 8.1 and 12.6m.
- Span length between pylon structures is typically up to 100 - 250m apart, depending on complexity and slope of terrain.

The design of the up to 132kV structures is unknown at present as the choice is dependent on the conditions at the exact position of the transmission structures on the chosen line route. Various pylon design types are being considered (and will be determined during the detailed design engineering phase), and may include any of the following:

- Up to 132kV
- Intermediate self-supporting monopole
- Inline or angle-strain self-supporting monopole
- Suspension self-supporting monopole
- Triple pole structure
- Steel lattice structure

The above designs may require anchors with guy-wires or be anchorless. For up to 132kV structures, concrete foundation sizes may vary depending on design type up to 80m^2 (10m by 8m), with depths reaching up to 3.5m typically in a rectangular 'pad' shape.

A working area of approximately 100m x 100m is needed for each of the proposed structures to be constructed.

4.3.2 CLEARANCE REQUIREMENTS FOR TRANSMISSION LINE

For safety reasons, transmission lines require certain minimum clearance distances. These are as follows:

- The minimum vertical clearance distance between the ground and the transmission line is 6.7m.
- The minimum vertical clearance to any fixed structure that does not form part of the transmission line is 9.4m - 11m.
- The minimum distance between an up to 132kV transmission line and an existing road is 60m – 120m (depending on the type of road).
- Any farming activity can be practiced under the conductors provided that safe working clearances and building restrictions are adhered to.
- Minimum servitude to other parallel lines.

4.3.3 PROPOSED ASSOCIATED INFRASTRUCTURE

The proposed transmission integration project will require the following with respect to the permanent infrastructure:

- Where the transmission line crosses a fence between neighbouring landowners and there is no suitable gate in place, a suitable gate will be erected in consultation with the landowner. These gates are necessary in order to ensure access to the line for maintenance and repair purposes.
- Existing road infrastructure will be used as far as possible to provide access for construction vehicles during the construction of the line. Thereafter, the roads are used for inspection and maintenance purposes. Where appropriate, roads may be upgraded to access transmission lines

and substations. Where no roads exist, access roads may be created for maintenance and inspection purposes.

- The substation, including but not limited to standard substation electrical equipment as may be needed (feeder bays, transformers, busbars, stringer strain beams, insulators, isolators, conductors, circuit breakers, lightning arrestors, relays, capacitor banks, batteries, wave trappers, switchyard, metering and indication instruments, equipment for carrier current, surge protection and outgoing feeders, as may be needed).Fibre Optic cable could be strung on the earth cable if required for telecommunication. The control building, telecommunication infrastructure, oil dam(s) etc.
- Workshop and office area within the project footprint.
- All the access road infrastructure to and within the substation.

4.4 PROPOSED PROJECT DEVELOPMENT ACTIVITIES

4.4.1 CONSTRUCTION PHASE

The construction process will follow industry standard methods and techniques. Key activities associated with the construction phase are described in **Table 4-3**.

Table 4-3 – Construction activities

Activity	Description
Planning phase	The actual location of the structures across which the conductors are spanned is determined by a number of factors, including negotiation with landowners, environmental features and technical requirements. A final SSVR will be provided to the DFFE with all the preferred routes assessed before registration submission. The DFFE will issue a registration based on the information provided. A project specific EMPr is drafted for the project which details the specific controls that must be in place for the duration of the construction phase.
Survey And Line Design	Topographical surveys are conducted subsequent to identifying and securing the servitude. This is normally done by means of air-borne laser equipment to develop aerial photos, or physically walked in-field where smaller footprints are considered. The topographical profile and plans are then used by the design engineers to determine the quantity and optimal placement of the structures and conductor spans and design of the structure foundations, structures, buildings, etc. All the above information would be required by the contractor before commencing construction.
Negotiation And Registration Of A Servitude	The proposed transmission line will require the registration of a 40 - 55 m wide servitude (20 - 27.5m either side of the centreline) across all land traversed. The servitudes do not imply that the holder of the servitude is Eskom. The registration of a servitude can be a lengthy process, as it requires contractual negotiation with each affected landowner. Once this is complete, an application for registration of the servitude is lodged with the Registrar of Deeds to register the rights. Once the holder of the servitude exercises the option granted by the landowner, construction can commence.
Site preparation and establishment	The selected Contractor will establish a temporary site camp including, but not be limited to, temporary offices, laydown areas for equipment and materials, storage facilities, ablutions, waste storage and handling area, and parking area. The location and extent of the Contractor's camp, to be established within the Project area, will be undertaken in line with specifications detailed within the EMPr. Materials are to be collected on a daily basis from the contractor laydown area for the construction activities along the

Activity	Description
	servitude. This limits areas to be impacted for storage along the servitude as well as for security purposes when activities cease at the end of each day.
Transport of components and equipment to site	Bulk materials (aggregate, steel etc.), infrastructure components, lifting and construction equipment (excavators, trucks, compaction equipment etc.) will be sourced and transported to site via suitable National and provincial routes and designated access roads. The infrastructure components may be defined as abnormal loads in terms of the Road Traffic Act (Act 29 of 1989) due to their large size and abnormal lengths and loads for transportation. A permit may be required for the transportation of these loads on public roads.
Clearance Requirements For Transmission Lines	For safety reasons, transmission lines require certain minimum clearance distances. These are as follows: ▪ The minimum vertical clearance distance between the ground and the transmission line is 6.7m. ▪ The minimum vertical clearance to any fixed structure that does not form part of the transmission line is 9.4m - 11m. ▪ The minimum distance between a 132kV transmission line and an existing road is 60m – 120m (depending on the type of road). ▪ Any farming activity can be practiced under the conductors provided that safe working clearances and building restrictions are adhered to. ▪ Minimum servitude to other parallel lines
Construction of OHPL and switching station	An switching station will be constructed on the site. Standard OHPL installation methods will be employed for the construction of the 132kV OHPL, which entails the excavations for foundations, planting of tower (concrete casting may be required) and stringing of the conductors. Pylon structures will be either monopole or lattice structures depending on what is identified as appropriate during final design. With a maximum height up to 50m above ground level, which are reported to have a life expectancy of more than 25 years. The actual height of the pylons will vary based on the site topography to maintain the specified clearance of the transmission lines. Once the pylons have been installed, the lines will be strung. The Contractor in collaboration with Eskom will be responsible for functional testing and commissioning of the OHPL.
Establishment of ancillary infrastructure	Ancillary infrastructure will include construction site office, temporary laydown area and workshop area for contractor's equipment.
Rehabilitation	Once all construction is completed on site and all equipment and machinery has been removed from the site, the site will be rehabilitated.

4.4.2 OPERATIONAL PHASE

During operation the key activities will include inspection and maintenance of the Grid Connection.

4.4.3 DECOMMISSIONING PHASE

The decommissioning phase will include activities similar to that of the construction phase as indicated in **Table 4-3**.

5 SITE SENSTIVITY VERIFICATION

In line with GNR 320, the site sensitivity verification requirements in per Chapter 2, Procedural Requirements Standard for the Development and Expansion of Electricity Transmission and Distribution Power Line Infrastructure, February 2024, have been achieved as per **Table 5.1** below.

Table 5-1 - Site Sensitivity Verification and Minimum Report Content Requirements

No	Requirement	Comment
1.	The proponent must appoint a professionally registered environmental assessment practitioner (EAP) or South African Council of Natural Scientific Professions (SACNASP) registered environmental scientist (ES) and must ensure that the EAP/ES fulfils the requirements to register the proposed development in accordance with this Standard.	Merafong has appointed WSP to undertake the registration process. This SSVR was compiled by Ashlea Strong, a registered Environmental Assessment Practitioner (EAP) utilising the inputs of various specialists who are SACNASP registered. Details of the EAP are provided in **Table 1-2** of the SSVR. The CV of the EAP and relevant specialists are included in **Appendix B** and **Appendix C.**
2.	The EAP/ES must identify a preliminary corridor and locations for relevant associated infrastructure, using the screening tool, their professional knowledge and any additional relevant fine scale spatial datasets as available from the provincial department responsible for the environment and the relevant local municipality. In identifying the preliminary corridor and locations for relevant associated infrastructure, the proponent and EAP/ES must consider and implement: ▪ the mitigation hierarchy; ▪ the procedural requirements contained in Chapter 2; and any engineering constraints. ▪	The screening tool report that was utilised is attached as **Appendix A**. The proposed grid connection intends to utilise an existing corridor location as shown in **Figure 1-3.**
3.	The EAP/ES must prepare a database of interested and affected parties (I&APs) along the preliminary corridor which must be updated regularly throughout the process.	WSP has a database of all local, and provincial I&APs for the public participation process.
4.	As part of the public participation process, the EAP/ES must identify and consult with: ▪ landowners and land occupiers along the preliminary corridor; ▪ relevant conservation and biodiversity entities/agencies; ▪ relevant government departments and state owned entities; ▪ relevant Non-Governmental Organisations (NGOs) involved with ecology, bird preservation and game farmers; ▪ relevant tourist and farmers organisations in the area; ▪ the relevant heritage authority;20 and ▪ stakeholders involved in activities potentially affected by the visual impact of the power lines such as ecotourism.	This condition is noted by the Applicant and WSP.
5.	The EAP/ES must announce the proposed development by making available a Background Information Document (BID),including any supporting documents, to I&APs identified	The proposed Merafong LILO Grid Connection project will employ the following for its announcement: ▪ Newspaper Advertisement

No	Requirement	Comment
	on the database and must include the information on a publicly accessible website until the end of the appeal period.	▪ BID/Site Notices ▪ Notifications to I&APs
6.	The BID must include as a minimum the following information: (a) Purpose of the BID; (b) Legal context; (c) Background and project description; (d) The need and desirability of the project; (e) Process and timeline; (f) Summary of the implications of the screening tool report for the preliminary corridor and associated infrastructure, including the substation where relevant. The screening tool report must be appended to the BID as part of the supporting documentation; (g) Location of the preliminary corridor and associated infrastructure including a map generated at an appropriate scale that displays the extent of the preliminary corridor and associated infrastructure in as much detail as possible; (h) Contact details of the EAP/ES; and (i) I&AP registration forms and a date by when the interest of the stakeholder should be registered.	This condition is noted by the Applicant and WSP.
7.	The proponent assisted by the EAP/ES must appoint a specialist team to assist with the pre-negotiated corridor planning by − (a) undertaking the site sensitivity verification which must be a physical inspection of the environmental themes contemplated in paragraph 1.4(b); (b) undertaking the required walkthrough inspections of areas that need verification in the opinion of the EAP/ES and specialist; and (c) considering various corridor alternatives and determining a draft pre-negotiated corridor based on the verified site sensitivity, as well as information provided by the screening tool, additional spatial data provided by municipal or provincial authorities and the EAP/ES's professional knowledge.	Site verification, including a walkthrough along the pre-negotiated route, was conducted by various registered specialists (**Appendix D - Appendix J**). Please note that there are no alternative corridors for the proposed Merafong LILO Grid Connection.
8.	As the draft pre-negotiated corridor is being identified, the initial servitude negotiations are to be undertaken to ensure that the final pre-negotiated corridor location is not fatally flawed in relation to servitude access.	This condition is noted by the Applicant and WSP.
9.	The process to identify the draft pre-negotiated corridor location and the outcome of the initial servitude negotiations must be documented in a draft environmental sensitivity report, which must be subjected to a minimum public comment period of 30 days as part of the public participation process. The draft environmental sensitivity report must be made available on a publicly accessible website for the duration of the comment period and to the identified I&APs contemplated in paragraph.	The public participation process is stipulated in **section 3** of this draft SSVR.

No	Requirement	Comment
10.	(a) The details and relevant expertise of the EAP/ES and specialists preparing the report, including evidence of current professional registration, where applicable	The CVs and qualifications of the EAP and specialists are attached in **Appendix B** and **Appendix C**.
	(b) In the case of the need to develop or expand non-linear infrastructure or structures, the written consent from the owner or person in control of the land on which the proposed development is to be undertaken.	The applicant confirms that there are currently no plans to develop or expand the non-linear infrastructure from the intended project.
	(c) Proof of the initial servitude negotiations with the landowners within the draft pre-negotiated corridor.	The landowner consent is attached as Appendix 9 of the registration form.
	(d) The outcome of the screening exercise undertaken using the screening tool, the expert knowledge of the specialists where necessary, results of the site sensitivity verification. The adoption of the mitigation hierarchy and the procedural requirements contained in this Chapter of this Standard;	The screening tool report that was utilised is attached as **Appendix A**.
	(e) A discussion on the corridor alternatives considered	No alternatives are considered for the Merafong LILO Grid Connection, therefore this is not applicable.
	(f) Location map of the draft pre-negotiated corridor and associated infrastructure at a scale not coarser than 1:15000 to identify environmental features	**Figure 1-3** shows the layout of the proposed Merafong LILO Grid Connection.
	(g) Details of the public participation process undertaken at the time of preparing the draft report	The public participation process is stipulated in **section 3** of this draft SSVR.
	(h) A documented discussion by the specialists and EAP/ES of the process used to consider and to confirm that the draft pre-negotiated corridor has applied the procedural requirements contained in this Chapter of this Standard, and the process used to confirm that the site sensitivity of the proposed draft pre-negotiated corridor is of low or medium environmental sensitivity and/or fulfils the requirements contemplated under Paragraphs 1.4 (c), (d) and/or (e);	The specialist's LILO SSVR confirms the proposed draft pre-negotiated corridor is of low or medium environmental sensitivity and/or fulfils the requirements contemplated under Paragraphs 1.4 (c), (d) and/or (e) – refer to **section 5.3** and the specialists'' reports found from **Appendix D - Appendix J**.
	(i) where applicable, Part C of the Generic EMPr for the development and expansion of power lines and/or Part C of the Generic EMPr for the development and expansion of substations;	This condition is noted by the Applicant and WSP. Part C of the Generic EMPr will form part of the drafted EMPr.
	(j) The confirming statement by the various specialists in the format as identified in Appendix B of this Standard	All the specialists' reports were complied in accordance to Appendix B of the Standard for the Development and Expansion of Electricity Transmission and Distribution Power Line Infrastructure, February 2024 (**Appendix D - Appendix J**).

No	Requirement	Comment
11.	The EAP/ES and specialists must refine, where needed, the draft pre-negotiated corridor in order to plan, identify and confirm the final pre-negotiated corridor. This must be achieved by considering and implementing the mitigation hierarchy and the requirements of this Chapter; considering engineering constraints; and taking into consideration comments received from stakeholders during the minimum day public comment period on the draft environmental sensitivity report.	No alternatives are considered for the Merafong LILO Grid Connection, therefore this is not applicable. The proposed corridor is considered as the final pre-negotiated corridor.
12.	(a) map showing the location of the final pre-negotiated corridor including associated infrastructure and areas requiring mitigation devices such as bird flight diverters (where relevant);	**Figure 1-3** shows the layout of the proposed Merafong LILO Grid Connection.
	(b) proof of the initial servitude negotiations with the landowners within the final pre-negotiated corridor	No alternatives are considered for the Merafong LILO Grid Connection, therefore this is not applicable. The proposed corridor is considered as the final pre-negotiated corridor.
	(c) landowner's consent for the location of the associated non-linear infrastructure where relevant	The landowner consent is attached as Appendix 3 of the registration form.
	(d) database of I&APs consulted on the project	The public participation process is stipulated in **section 3** of this draft SSVR.
	(e) records of comments and responses	The public participation process is stipulated in **section 3** of this draft SSVR.
	(f) where applicable, Part C of the Generic EMPr for the development and expansion of powerlines, and/or Part C of the Generic EMPr for the development and expansion of substations;	This condition is noted by the Applicant and WSP. Part C of the Generic EMPr will form part of the drafted EMPr.
	(g) final confirming statements by the various specialists in the format as identified in Appendix B of this Standard; and	All the specialists' reports were complied in accordance to Appendix B of the Standard for the Development and Expansion of Electricity Transmission and Distribution Power Line Infrastructure, February 2024 (**Appendix D - Appendix J**).
	(h) all other relevant information stipulated in paragraph 10.	This condition is noted by the Applicant and WSP, and all relevant information has been addressed.
13.	The EAP/ES on behalf of the proponent, must submit the relevant registration form and supporting documents contained in Appendix D of this Standard, to the competent authority and must notify all registered I&APs of the associated submission. A copy of the final environmental sensitivity report must be made available electronically to registered I&APs or through another means where the I&AP does not have access to electronic mail	These conditions are noted by the Applicant and WSP.

No	Requirement	Comment
	and uploaded onto the website as identified in paragraph 9 for information purposes	
14.	The registration form must be accompanied by: (a) The final pre-negotiated corridor and the signed declaration by the proponent of commitment to implement the Standard (included as Appendix 9 to the registration form); (b) A signed statement from the proponent that initial servitude negotiations have been concluded; (c) The signed declaration that the proponent will comply with the pre-approved Generic EMPr template and Part C of the Generic EMPrs if applicable; (d) The final environmental sensitivity report; and (e) All supporting documents stipulated in the registration form.	These conditions are noted by the Applicant and WSP.
15.	On receiving the relevant information identified in paragraph 14, the competent authority must issue a registration number within 30 days of receipt of the information submitted; or, if the information is incomplete, indicate to the proponent within 14 days of receipt of the information submitted that the submission is incomplete and identify the outstanding information required. A register of all registrations must be kept by the competent authority.	
16.	Upon receipt of a registration number, the proponent must inform all registered I&APs within 14 days of the registration and the opportunity to appeal	
17.	Registration contemplated in paragraph 15 will be valid for a period of 10 years from receipt of the registration number in order for commencement to take place (validity period). If commencement does not take place within the validity period, the process contemplated in Chapter 2 will apply afresh.	
18.	The proponent must provide written notice to the compliance monitoring unit within the competent authority 14 days prior to the date on which the first of the activities contemplated in the scope of this Standard, including site preparation, will commence in order to facilitate compliance inspections.	
19.	Proof of registration must be: (a) made available by the proponent on request to any member of the public or any government authority; and (b) made available, on the owner's publicly accessible website.	
20.	Where a change of ownership of a development registered in terms of paragraph 15 occurs during the pre-construction or construction phases of the infrastructure, the registration number is retained by the new owner, however the new owner must submit to the competent authority for re-registration the	

No	Requirement	Comment
	following documents within 30 days upon finalisation of such change; ▪ a completed re-registration form contemplated in Appendix E; ▪ the declaration by the new owner of his/her commitment to implement Part B – Section 1 of the Generic EMPr for the development and expansion of power lines, and where relevant the Generic EMPr for the development and expansion of substations (Appendix 10); ▪ where applicable, Part C of the Generic EMPr for the development and expansion of power lines and/or Part C of the Generic EMPr for the development and expansion of substations (Appendix 10); and ▪ the declaration by the new owner of his/her commitment to implement the Standard (to be included as Appendix 9 to the registration form).	
21.	Where a change of ownership of a portion of the infrastructure registered in terms of paragraph 15 occurs during the pre-construction or construction phase of the infrastructure, a new registration number must be issued by the competent authority for the portion transferred, while the remaining portion is to be re-registered by the original holder and which portion will retain the original registration number. The owner of the transferred portion must submit to the competent authority for re-registration the following documents within 30 days upon finalisation of such change to enable the issuing of a new registration number to the new owner: ▪ a completed re-registration form contemplated in Appendix E; ▪ the declaration by the new owner of his/her commitment to implement Part B – Section 1 of the Generic EMPr for the development and expansion of power lines, and where relevant the Generic EMPr for the development and expansion of substations; ▪ where applicable, Part C of the Generic EMPr for the development and expansion of powerlines and/or Part C of the Generic EMPr for the development and expansion of substations; ▪ an updated locality map indicating clearly the portion to be transferred and the remaining portion including the existing registration number.	
22.	Where a change of ownership of a development registered in terms of paragraph 15 occurs after the finalisation of the construction phase, the new owner must submit to the competent authority within 30 days upon finalisation of such change, for re-registration, a completed re-registration form contemplated in Appendix E. The intention of re-registering the infrastructure in the name of the new owner is to ensure that there is a correct record of ownership for the registered infrastructure.	
23.	Where a change of ownership of a portion of the infrastructure registered in terms of paragraph 15 occurs after the finalisation of the construction phase, a new registration number must be issued by the competent authority for the portion transferred,	

No	Requirement	Comment
	while the remaining portion is to be re-registered by the original holder, and which portion will retain the original registration number. The owner of the transferred portion must submit to the competent authority within 30 days upon finalisation of such change, a completed re-registration form contemplated in Appendix E, together with an updated locality map indicating clearly the portion to be transferred and the remaining portion, as well as the existing registration number, to enable the issuing of a new registration number to the new owner for the portion to be transferred.	

5.1 ENVIRONMENTAL SENSITIVITY

As per the Screening Tool Reports (**Appendix A**), the proposed site is indicated to be located within areas ranging from low to very high sensitivity. These are identified in **Table 5-2** and **Table 5-3**.

Table 5-2 - Sensitivities identified in the DFFE Screening Report (Powerline)

Theme	Very High Sensitivity	High Sensitivity	Medium Sensitivity	Low Sensitivity
Agriculture Theme		X		
Animal Species Theme			X	
Aquatic Biodiversity Theme				X
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme		X		
Defence Theme				X
Palaeontology Theme	X			
Plant Species Theme				X
Terrestrial Biodiversity Theme				X

Table 5-3 - Sensitivities identified in the DFFE Screening Report (switching station)

Theme	Very High Sensitivity	High Sensitivity	Medium Sensitivity	Low Sensitivity
Agriculture Theme		X		
Animal Species Theme			X	
Aquatic Biodiversity Theme				X
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme		X		

Theme	Very High Sensitivity	High Sensitivity	Medium Sensitivity	Low Sensitivity
Defence Theme				X
Palaeontology Theme	X			
Plant Species Theme				X
Terrestrial Biodiversity Theme				X

Based on information gathered through a desktop study and site assessment, not all of the identified sensitivities apply to the site in its current state. Section 5.3 below serves to:

- Verify land use and sensitivities identified in the Screening Tool Reports (as indicated above);
- Provide motivation and evidence of either the verified or different use of the land and environmental sensitivity; and
- Confirm / refute the need for the various specialist inputs recommended in terms of the Screening Tool Report.

5.2 SPECIALIST ASSESSMENTS

A summary of the DFFE screening tool, the applicable legislation as well as the specialist sensitivity verification are detailed in **Table 5.3**. The motivation for the site sensitivity verification for each environmental theme is discussed in **Section 5.3** below.

Table 5-4 - Assessment Protocols and Site Sensitivity Verifications

Specialist Assessment	Assessment Protocol	DFFE Screening Tool Sensitivity	Specialist Sensitivity Verification
Agricultural Compliance Statement	*Protocol for the specialist assessment and minimum report content requirements of environmental impacts on agricultural resources by onshore wind and/or solar photovoltaic energy generation facilities where the electricity output is 20 megawatts or more*	High Sensitivity	Medium to Low Sensitivity
Terrestrial Biodiversity Impact Assessment	*Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Biodiversity*	Low Sensitivity	Low Sensitivity
Aquatic Biodiversity Impact Assessment	*Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Aquatic Biodiversity*	Low Sensitivity	Low Sensitivity
Plant Species	*Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Plant Species*	Low Sensitivity	Low Sensitivity
Animal Species	*Protocol for the Specialist Assessment and Minimum Report Content Requirements for*	Medium Sensitivity	Low Sensitivity

Specialist Assessment	Assessment Protocol	DFFE Screening Tool Sensitivity	Specialist Sensitivity Verification
	Environmental Impacts on Terrestrial Animal Species		
Avifauna Impact Assessment	*Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Animal Species*	No Sensitivity Identified	Low Sensitivity
Archaeological and Cultural Heritage Assessment	*Site Sensitivity Verification Requirements where a specialist Assessment is required but no Specific Assessment Protocol has been prescribed*	Low Sensitivity	Low Sensitivity
Palaeontology Impact Assessment	*Site Sensitivity Verification Requirements where a specialist Assessment is required but no Specific Assessment Protocol has been prescribed*	Very High Sensitivity	Low Sensitivity
Visual (Landscape) Impact Assessment	*Site Sensitivity Verification Requirements where a specialist Assessment is required but no Specific Assessment Protocol has been prescribed*	No Sensitivity Identified	Low Sensitivity

5.3 SPECIALIST SITE SENSITIVITY VERIFICATION MOTIVATION

5.3.1 AGRICULTURAL IMPACT ASSESSMENT

The following is extracted from the Agricultural Report compiled by Soil ZA and included as **Appendix D.**

Figure 5-1 illustrates the high agricultural sensitivity rating identified for the project area by the DFFE Screening tool.

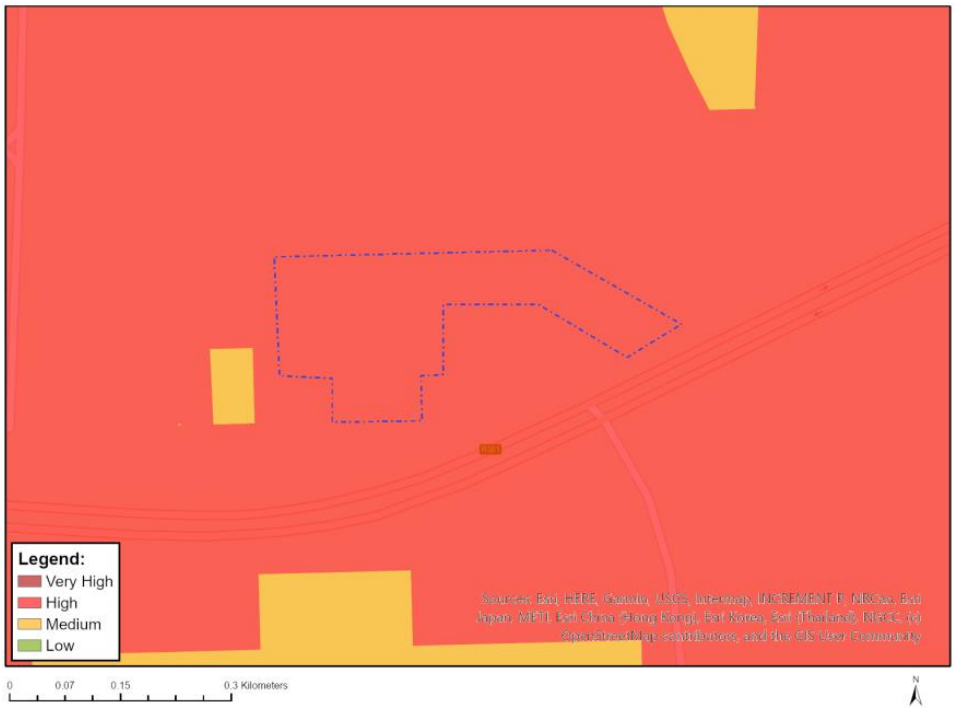


Figure 5-1 – DFFE screening tool sensitivity for Agricultural theme

Source: DFFE Screening Report

According to the Agriculture Confirming Statement, based on desktop information, site verification and walk through information that the agricultural sensitivity of the Merafong LILO Power Lines & Switching Station development footprint is medium.

The true agricultural sensitivity of any land is equivalent to its actual suitability for crop production on the ground, rather than being determined by a parameter that serves as a proxy for crop suitability in a dataset, which is how the screening tool determines sensitivity. The land's suitability for cropping directly determines how important it is to conserve that land as agricultural production land. To determine suitability for crop production, and hence sensitivity, requires a site-specific assessment, as has been conducted in this assessment, rather than a reliance on data sets that have significant limitations.

The determinants of agricultural sensitivity are actually very straightforward and may be summed up as follows. If land is suitable for viable crop production - that is if it has the capability to deliver an above break-even crop yield on a sustainable basis - then it is of high or very high agricultural sensitivity. If it has limitations that prevent it from being able to deliver an above break-even crop yield on a sustainable basis, then it is of medium or low agricultural sensitivity.

The screening tool classifies the assessed corridor and switching station footprint as being high agricultural sensitivity. The high sensitivity classification by the screening tool is due to a combination of the land being classified as cropland (high sensitivity) and being classified as high sensitivity because of its land capability rating. However, during the stie inspection, the site was assessed as not suitable for viable crop production due to soil depth limitations and its true sensitivity, as assessed on the ground, is therefore medium. This assessment therefore disputes the high sensitivity classification of the site by the screening tool and verifies the entire site as being of medium agricultural sensitivity because of its assessed cropping potential. The land is not cropped,

has insufficient land capability for viable and sustainable crop production, and is therefore only good enough for grazing.

5.3.2 AQUATIC BIODIVERSITY IMPACT ASSESSMENT

The following is extracted from the Aquatic Biodiversity SSVR report compiled by WSP and included as **Appendix F.**

The proposed study area for the Solar PV Facility footprint was assessed at desktop level using the National Web-based Environmental Screening Tool. According to the Tool, the Aquatic Biodiversity Theme for the study area is rated as 'Low Sensitivity'(**Figure 5-2**).

Figure 5-2 - Map of Aquatic Biodiversity Sensitivity

Source: DFFE Screening Report

There are no natural rivers/streams within the study area. Therefore the Low High Sensitivity is confirmed as Low

The findings of the site sensitivity verification exercise, based on the data gathering activities conducted to date (i.e. review and consolidation of available desktop data, site sensitivity verification site visit), together with the anticipated reporting requirement as stipulated by the various protocols and standards, are summarised below.

Theme	Screening tool sensitivity	Site-based sensitivity	Motivation	Scoped baseline assessment requirements
Aquatic biodiversity	Low	Low	The site survey confirmed that no wetland habitat is present within the project area, therefore on-site wetlands according to the NWM5 have incorrectly been designated. No natural rivers/streams are present within the site	Due to the absence of natural rivers/streams within the study area, it is recommended that a compliance statement be prepared in order for the project to meet the requirements of the "Protocol for the specialist assessment and minimum report content requirements for environmental impacts on aquatic biodiversity"

The Merafong LILO Power Lines & Switching Station development footprint is located within a predominantly transformed area subjected to mixed land use activities i.e. cultivated fields, an industrial complex, mining facilities and residential areas amongst others. Consequently, existing impacts include habitat fragmentation, roads, and water quality modification within the watercourses (canalized channels).

The proposed Project's contribution to the cumulative impacts upon aquatic biodiversity will be limited to the artificial channel within which sites 1, 2 and 3 are located (**Figure 5-3**). Anticipated impacts during the construction phase include sedimentation and water quality modifications. This system was however observed to occur in isolation with no visible connectivity to any other water resources within the catchment. Furthermore, only a single aquatic macroinvertebrate taxon was sampled along this system, therefore the proposed Project's contribution to the cumulative impacts is deemed negligible for the aquatic biodiversity them.

Figure 5-3 - General habitat conditions

5.3.3 TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT

The following is extracted from the Terrestrial Biodiversity SSVR report compiled by WSP and included as **Appendix E.**

The proposed Project site was assessed using the Department of Forestry, Fisheries and The Environment's (DFFE) National Web-based Environmental Screening Tool. The Terrestrial Biodiversity Theme for study area is rated 'Low' (**Figure 5-4**) sensitivity.

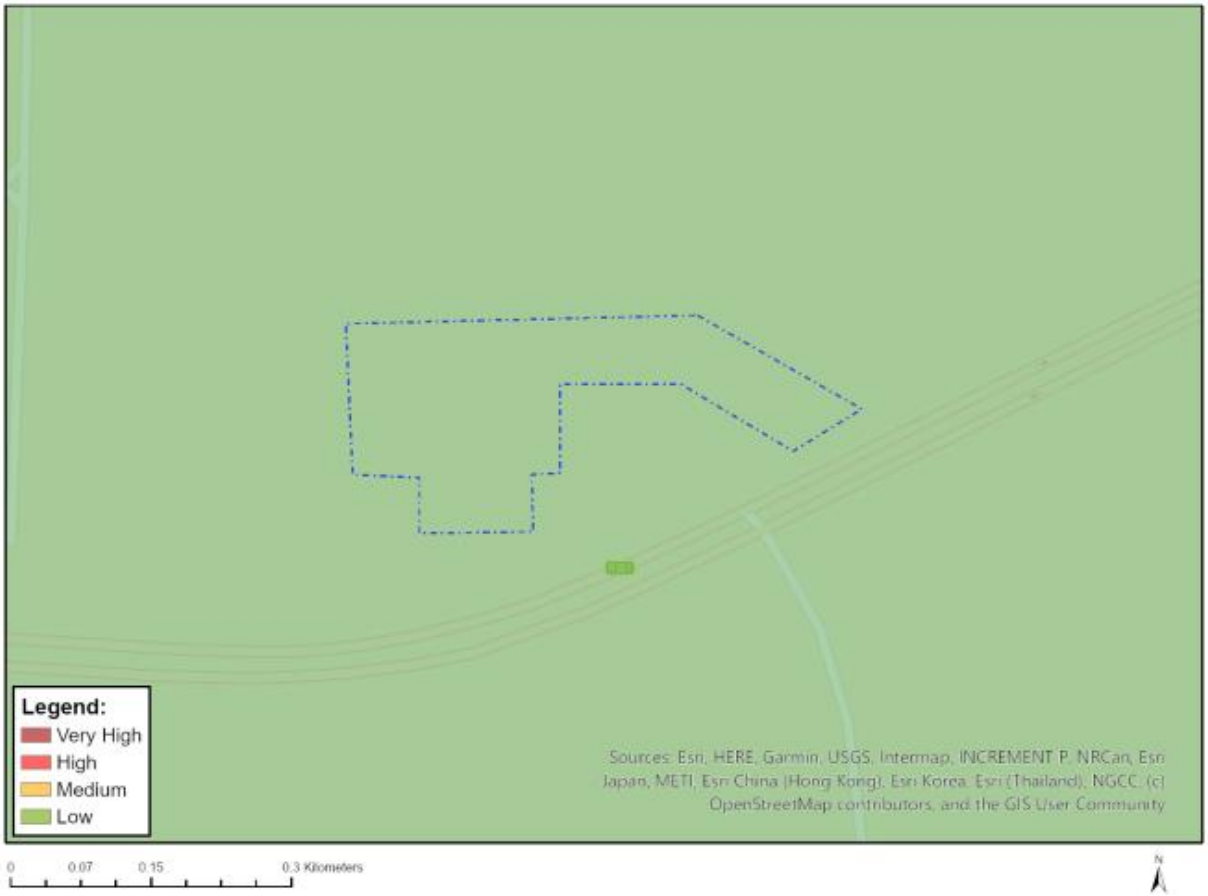


Figure 5-4 - Map of Terrestrial Biodiversity Sensitivity

Source: DFFE Screening Report

Table 5-5 below provides information regarding the outcome of the DFFE Screening Tool sensitivity rating for the Terrestrial Biodiversity theme, and the outcome of the sensitivity verification process.

Table 5-5 – Terrestrial Biodiversity theme sensitivity for the proposed Merafong LILO Grid

Environmental Theme	DFFE Screening Tool Sensitivity	Applicable protocol	Specialist Sensitivity Verification
Terrestrial Biodiversity	The proposed LILO Power Lines and Switching Station is mapped as Low Sensitivity	Protocol for the specialist assessment and minimum report content requirements for environmental impacts on Terrestrial Biodiversity	The site, including the proposed LILO Power Lines and Switching Station footprint, have been modified by historic and/or current farming activities (cultivation).

Environmental Theme	DFFE Screening Tool Sensitivity	Applicable protocol	Specialist Sensitivity Verification
			Accordingly, on-site CBA and ESA land have been incorrectly designated. Based on the verification field visit, the Terrestrial Biodiversity sensitivity mapping for the proposed LILO Power Lines and Switching Station footprint is confirmed as Low.

The entire site, including the proposed LILO Power Lines & Switching Station development footprint, is modified, and has been subject to anthropogenic disturbance, mostly in the form of historic and/or current dryland cultivation.

The verification field visits indicated that the proposed LILO Power Lines & Switching Station development footprint and the remainder of the broader Merafong PV Project site have been subject to historic dryland cultivation. Habitat is currently characterised by *Hyparrhenia hirta* secondary grassland (old lands), with a stands of aliens Eucalyptus trees and cultivated fields also present. The DFFE mapping of the proposed LILO Power Lines & Switching Station development footprint as Low sensitivity for Terrestrial Biodiversity theme is therefore confirmed.

No Red List flora were recorded on-site during the verification field visit and considering the modified and secondary character of on-site vegetation, no Red List flora are likely to be present within the proposed LILO and Substation footprint. Similarly, no Red List fauna species were recorded on-site during the verification field visit, and habitat suitability assessments indicate that no Red List are likely to be present. The sensitivity ratings for both the Plant Species and Animal Species theme are therefore also considered to be Low.

Pursuant to the above findings, the proposed LILO Power Lines & Switching Station development footprint has been positioned in the south-west corner of the site, which, like the remainder of the site, has low sensitivity with respects to all three assessed themes.

Negative ecological impacts may arise as a result of the development of the proposed Project activities. These, however, can be effectively mitigated through the application of several standard environmental management measures that are presented in the Generic EMPr.

The site is surrounded by transformed (i.e., developed) or modified land. The south of the site is bordered by the R501 tarred provincial road, while land to the east and west is characterised by existing industrial operations (viz. Kwastina Corobrik Factory and Murray and Roberts Cementation) and the R 559 tarred provincial road, which is a major transport route connecting Johannesburg and Carletonville.

The Kwastina Corobrik Factory and Murray and Roberts Cementation industrial operations are enclosed by security fencing and characterised by various forms of built infrastructure. Land to the north of the site boundary is under cultivation, and is regularly disturbed through ploughing, seeding and harvesting, and is dominated by commercial crop species (e.g., maize).

The site, including the proposed LILO Power Lines & Switching Station development footprint, is therefore surrounded by modified land. It is thus not considered a functionally important component

of local landscape connectivity or an ecological corridor. The proposed development of the proposed LILO Power Lines & Switching Station development footprint is therefore considered unlikely to cause a significant reduction in landscape connectivity.

5.3.4 PLANT SPECIES ASSESSMENT

The following is extracted from the Terrestrial Biodiversity SSVR report compiled by WSP and included as **Appendix E.**

The DFFE Screening Tool indicates that the site has a low sensitivity (**Figure 5-5**).

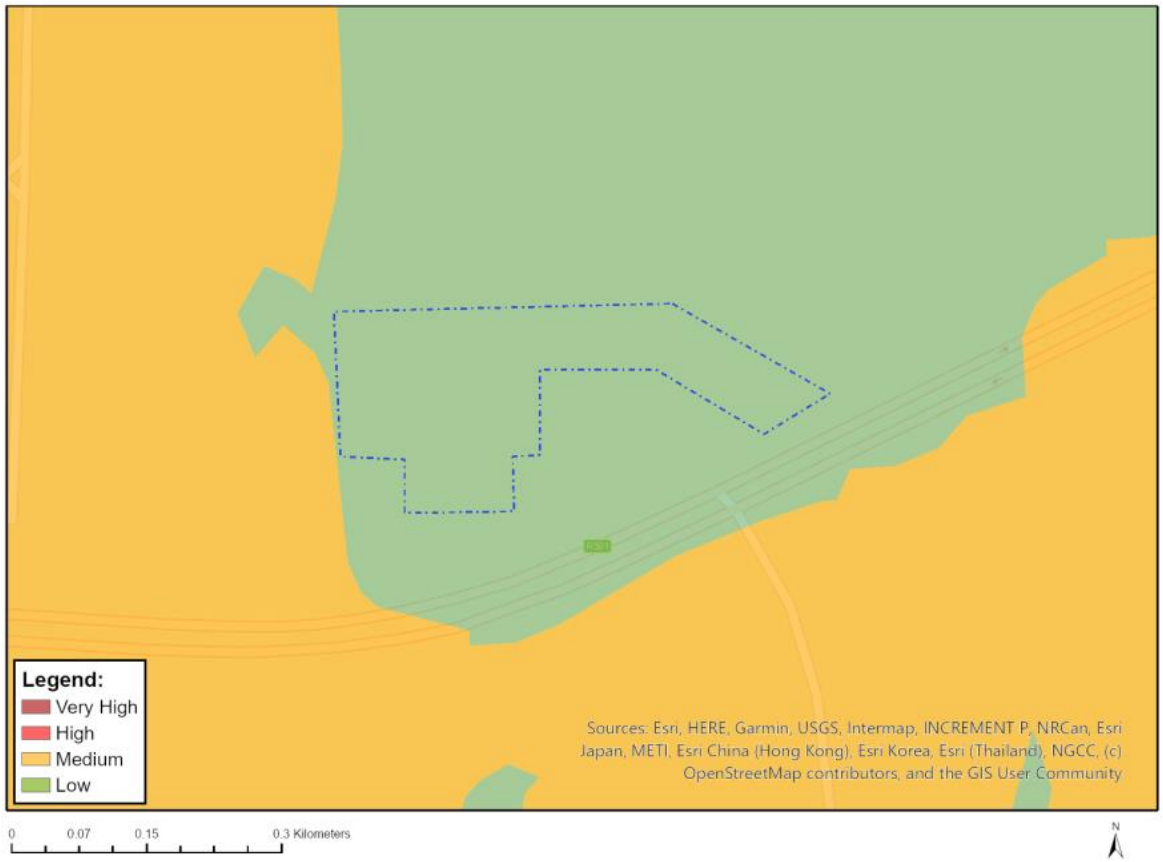


Figure 5-5 - Map of Plant Species Sensitivity

Source: DFFE Screening Report

Table 5-6 below provides information regarding the outcome of the DFFE Screening Tool sensitivity rating for the Plant Species theme, and the outcome of the sensitivity verification process.

Table 5-6 – Plant Species theme sensitivity for the proposed Merafong LILO Grid

Environmental Theme	DFFE Screening Tool Sensitivity	Applicable protocol	Specialist Sensitivity Verification
Plant Species	The proposed LILO Power Lines and Switching Station footprint is mapped as Low Sensitivity	Protocol for the specialist assessment and minimum report content requirements for environmental impacts on Plant Species	Outside of currently cultivated fields, on-site habitat, including that characterising the proposed LILO and Substation footprint, is characterised by old land secondary grassland, while a Eucalyptus dominated tree stand that is associated with a storm/process water

Environmental Theme	DFFE Screening Tool Sensitivity	Applicable protocol	Specialist Sensitivity Verification
			drainage channel is located to the east of the proposed LILO Power Lines and Switching Station footprint. No flora SCC were recorded on-site and none are expected to be present in the proposed LILO Power Lines and Switching Station footprint. Accordingly, the Plant Species sensitivity rating of Low is confirmed..

No Red List flora species were recorded on-site during the verification field visits, and considering the modified and secondary character of on-site vegetation, none are likely to be present within the proposed LILO Power Lines & Switching Station development area footprint, including those taxa highlighted by DFFE Screening Tool:

- *Khadia beswickii* favours open shallow soils, over rocks in grassland (Victor and Pfab, 2005). No suitable habitat is present on-site, and therefore it is unlikely' that *Khadia beswickii* is present;
- Sensitive species 1147 occurs in open undisturbed grasslands on dolomite or in black, sandy soils. No suitable habitat is present on-site, and therefore it is unlikely' that Sensitive species 1147 is present; and
- Sensitive species 1248 is found in open woodland and steep rocky hills in shady situations. No suitable habitat is present on-site, and therefore it is unlikely' that Sensitive species 1248 is present.

The 'Medium' sensitivity rating for the Plant Species theme is therefore considered incorrect. The sensitivity rating for the Plant Species theme is considered to be of 'Low' sensitivity

Habitat suitability assessments, based on field data collected on-site and a review of documented habitat preferences, also indicated that none of the seven flora SCC that are known from the region are likely to be present on-site – refer to **Table 5-7**. This is primarily predicated on the disturbed and secondary nature of on-site vegetation. The 'Medium' DFFE sensitivity rating for the Plant Species theme is therefore considered incorrect. The sensitivity rating for the Plant Species theme is considered to be of 'Low' sensitivity.

Table 5-7 - Flora species of conservation concern potentially occurring on-site.

Family	Scientific Name	Regional Red List Status	Gauteng Status	Habitat Preferences	Probability of Occurrence
Asphodelaceae	*Kniphofia typhoides*	Near Threatened	Protected	Kniphofia typhoides occurs in the black clay soils of low-lying wetlands and seasonally wet habitats in Themeda triandra grasslands (von Staden and Victor, 2005)	Unlikely – no suitable habitat present.
Aizoaceae	*Khadia beswickii*	Vulnerable	-	Species has an EOO of only 475 km2 and an AOO of 3-7 km2. It is known from only ten locations, mostly acr°ss Gauteng Province, but also scattered sites in Mpumalanga. Favours open	Unlikely – no suitable habitat present.

Family	Scientific Name	Regional Red List Status	Gauteng Status	Habitat Preferences	Probability of Occurrence
				shallow soils, over rocks in grassland (Victor and Pfab, 2005).	
Aizoaceae	*Lithops lesliei*	Vulnerable	Protected	This species has a widespread distribution, but is experiencing local losses due to urbanisation. This species favours rocky locations in arid grassland habitat (Mtshali, et al., 2023)	Unlikely – no suitable habitat present.
Crassulaceae	*Adromischus umbraticola subsp. umbraticola*	Near Threatened	-	Species has an EOO of 14 600 km2 and is known from 14 locations. Grows in rock crevices on south-facing slope ridges. (Helme and Raimondo, 2006).	Unlikely – no suitable habitat present.
Hyacinthaceae	*Drimia sanguinea*	Near Threatened	-	This species favours open veld and scrubby woodland across northern South Africa (Willaims, et al., 2008).	Unlikely – no suitable habitat present.
-	Sensitive species 1147	Endangered		Occurs in six scattered subpopulations, with a total population size estimated at 230 mature individuals. Occurs in open grassland on dolomite or in black sandy soil.	Unlikely – no suitable habitat present.
-	Sensitive species 1248	Vulnerable	-	Found in open woodland and steep rocky hills in shady situations at low- and medium altitudes. No EOO for this species is listed, but its AOO is estimated at 30.70 km2 (SANBI, 2020).	Unlikely – no suitable habitat present.

5.3.5 ANIMAL SPECIES ASSESSMENT

The following is extracted from the Terrestrial Biodiversity SSVR report compiled by WSP and included as **Appendix E.**

The DFFE Screening Tool indicates that the site has a medium sensitivity (**Figure 5-6**) due to the potential presence of the following features:

- Two mammal species:
  - Spotted-necked Otter (*Hydrictis maculicollis*)
  - Maquassie Musk Shrew (*Crocidura maquassiensis*);

- Two bird species[1]:
  - White-bellied Bustard (*Eupodotis senegalensis*);
  - African Grass Owl (*Tyto capensis*);
  - African Marsh Harrier (*Circus ranivorus*);
- Three invertebrate species:
  - Highveld Nimble Blue (*Lepidochrysops praeterita*); and
  - Uvarov's Clonia (*Clonia uvarovi*).

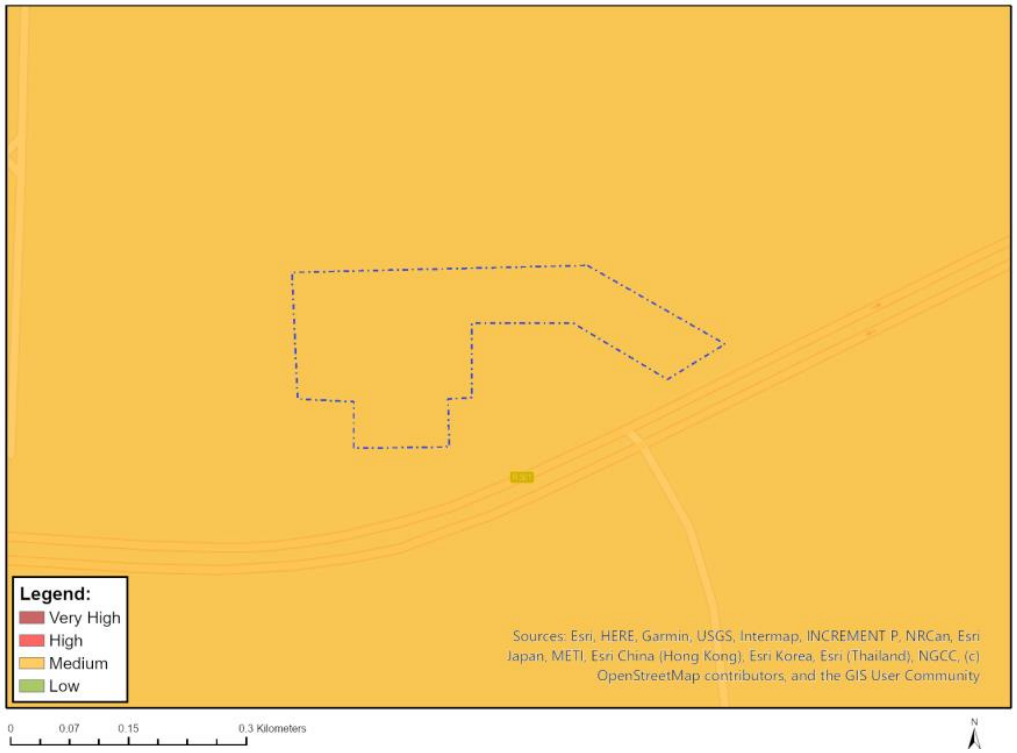


Figure 5-6 - Map of Animal Species Sensitivity

Source: DFFE Screening Report

Table 5-8 below provides information regarding the outcome of the DFFE Screening Tool sensitivity rating for the Animal Species theme, and the outcome of the sensitivity verification process.

Table 5-8 – Animal Species theme sensitivity for the proposed Merafong LILO Grid

Environmental Theme	DFFE Screening Tool Sensitivity	Applicable protocol	Specialist Sensitivity Verification
Animal Species	Medium for the broader site and the proposed LILO Power	Protocol for the specialist assessment and minimum report content requirements for	Considering the modified nature of the site, including the proposed

[1] Bird species were assessed as part of a separate sensitivity verification process.

Environmental Theme	DFFE Screening Tool Sensitivity	Applicable protocol	Specialist Sensitivity Verification
	Lines and Switching Station footprint.	environmental impacts on Animal Species	LILO Power Lines and Switching Station footprint, the site does not constitute functionally important fauna habitat. No fauna SCC were observed, and it is considered unlikely that SCC are present in the proposed LILO Power Lines and Switching Station footprint. Accordingly, the Animal Species sensitivity is rated Low.

No fauna SCC were recorded on-site during the verification field visit. Considering the modified and secondary character of on-site vegetation, the site is not considered important fauna habitat, and habitat suitability assessments for the fauna SCC highlighted by the DFFE Screening Tool's indicate that these SCC are 'unlikely' to be present:

- Spotted-necked Otter is restricted to areas with permanent, large open-water bodies (Ponsonby, et al., 2016). No suitable open-water bodies are present on-site for this species. It is therefore 'unlikely' that Spotted-necked Otter is present;
- Maquassie Musk Shrew favours moist grassland habitats in savanna and grassland ecosystems (Taylor et al., 2016). Limited moist grassland habitat is present on-site, and therefore it is 'unlikely' that the Maquassie Musk Shrew is present;
- *Lepidochrysops praeterita* inhabits rocky grassed south-facing slopes, with the host plant *Ocimum obovatum* present (Dobson, 2018). Suitable habitat is not present on-site, and *Ocimum obovatum* was not recorded during the verification field visit, nor considered likely to be present. It is therefore 'unlikely' that *Lepidochrysops praeterita* occurs on-site;
- *Clonia uvarovi* favours tall woodland and savanna (Bazelet and Naskrecki, 2014). Savanna/woodland habitat on-site is mostly limited to the alien Eucalyptus tree line and the small stands of alien Prunus persica trees. Suitable tall indigenous woodland habitat is therefore not present, and it is 'unlikely' that *Clonia uvarovi* occurs on-site.

Reviewed literature also indicates that up to 15 Red List mammal species and two herpetofauna taxa listed as Protected on the NEMBA ToPs List (2007) are known to occur in the broader region in which the site is located. These are listed in **Table 5-9**, along with their conservation status, and a 'probability of occurrence' based on habitat suitability assessments.

The 'Medium' DFFE sensitivity rating for the Animal Species theme is therefore considered incorrect. The sensitivity rating for the Animal Species theme for the site as well as the proposed LILO Power Lines & Switching Station development footprint, is considered to be of 'Low' sensitivity.

Table 5-9 - Fauna species of conservation concern potentially occurring on-site.

Family	Scientific Name	Common Name	Regional Red List Status	NEMBA ToPS List (2007)	Gauteng Status	Habitat Preferences	Probability of Occurrence
Mammals							
Bovidae	*Pelea capreolus*	Grey Rhebok	Near Threatened	-	Protected	Sourveld grassland and scrubland in hills and mountainous areas.	Unlikely – no suitable habitat
Bovidae	*Redunca fulvorufula fulvorufula*	Mountain Reedbuck	Endangered	-	Protected	Rolling grassy hillsides and mountain slopes.	Unlikely – no suitable habitat
Canidae	*Vulpes chama*	Cape Fox	Least Concern	Protected	-	Range of habitats, including grassland and arid savanna.	Unlikely – limited suitable habitat present
Chrysochloridae	*Amblysomus septentrionalis*	Highveld Golden Mole	Near Threatened	-	-	Sandy soils in undisturbed grassland areas.	Unlikely – no suitable habitat
Chrysochloridae	*Chrysospalax villosus*	Rough-haired Golden Mole	Vulnerable	Critically Endangered	-	Sandy soils in undisturbed grassland areas.	Unlikely – no suitable habitat
Erinaceidae	*Atelerix frontalis*	South African Hedgehog	Near Threatened	Protected	Protected	Range of habitats, including undisturbed grassland and savanna.	Unlikely – limited suitable habitat
Felidae	*Felis nigripes*	Black-footed Cat	Vulnerable	Protected	-	Open, short grass areas in savanna and grassland habitats.	Unlikely – limited suitable habitat
Felidae	*Leptailurus serval*	Serval	Near Threatened	Protected	-	Wetland, tall grassland and well-watered savanna habitats.	Unlikely – limited suitable habitat
Felidae	*Acinonyx jubatus*	Cheetah	Vulnerable	-	-	Occurs in a wide-range of habitats including savanna, grassland, thicket and karoo shrublands.	Unlikely – no suitable habitat &

Family	Scientific Name	Common Name	Regional Red List Status	NEMBA ToPS List (2007)	Gauteng Status	Habitat Preferences	Probability of Occurrence
							sensitive to disturbance
Felidae	*Panthera pardus*	Leopard	Vulnerable	Vulnerable	-	Wide range of habitats, including grassland and savanna.	Unlikely – no suitable habitat & sensitive to disturbance
Hipposideridae	*Cloeotis percivali*	Short-eared Trident Bat	Endangered	-	-	Savanna and woodland habitats, with caves or mine adits present.	Unlikely – no suitable habitat
Hyaenidae	*Parahyaena brunnea*	Brown Hyaena	Near Threatened	Protected	Protected	Savanna and grassland habitats.	Unlikely - sensitive to disturbance
Muridae	*Dasymys robertsii*	Robert's Marsh Rat	Vulnerable	-	-	Moist grassland and wetland habitats.	Unlikely – no suitable habitat
Mustelidae	*Aonyx capensis*	Cape Clawless Otter	Near Threatened	Protected	-	Riparian habitats, with permanent water.	Unlikely – no suitable habitat
Mustelidae	*Hydrictis maculicollis*	Spotted-necked Otter	Vulnerable	Protected	-	Riparian habitats, favouring large, open water bodies.	Unlikely – no suitable habitat
Nesomyidae	*Mystromys albicaudatus*	White-tailed Rat	Vulnerable	-	-	Undisturbed grassland habitats, as well as succulent karoo and fynbos.	Unlikely – no suitable habitat
Soricidae	*Crocidura maquassiensis*	Maquassie Musk Shrew	Vulnerable	-	-	Moist grassland habitats in savanna and grassland ecosystems.	Unlikely – no suitable habitat
Soricidae	Crocidura mariquensis	Swamp Musk Shrew	Near Threatened	-	-	Reedbeds, wetlands and thick moist grassland in riverine habitats.	Unlikely – no suitable habitat
Herpetofauna							

Family	Scientific Name	Common Name	Regional Red List Status	NEMBA ToPS List (2007)	Gauteng Status	Habitat Preferences	Probability of Occurrence
Pythonidae	*Python natalensis*	South African Python	Least Concern	Protected	-	Occurs in a wide variety of habitats but generally favours riverine and rocky areas.	Unlikely – no suitable habitat
Pyxicephalidae	*Pyxicephalus adspersus*	Giant Bullfrog	Least Concern	Protected	Protected	Seasonally shallow pans, wetland and rained-filled depressions in savanna and grassland ecosystems.	Unlikely – no suitable habitat

**Habitat preferences as per Stuart and Stuart (2007) and Child et al., (2016) for mammals, and Bates, et al., (2014) and Du Preez and Carruthers (2009) for herpetofauna.*

5.3.6 AVIFAUNA

The following is extracted from the Avifauna SSVR compiled by Feathers Environmental Services and included as **Appendix G.**

A map of the proposed Merafong LILO Power Lines & Switching Station development footprint overlaid on the screening tool sensitivity is given in Error! Reference source not found. for the whole project area as no sensitivity was identified in the grid area. The DFFE Screening Tool rates the Animal Species Theme as Medium Sensitivity, but no Avifauna specific sensitivity was identified.

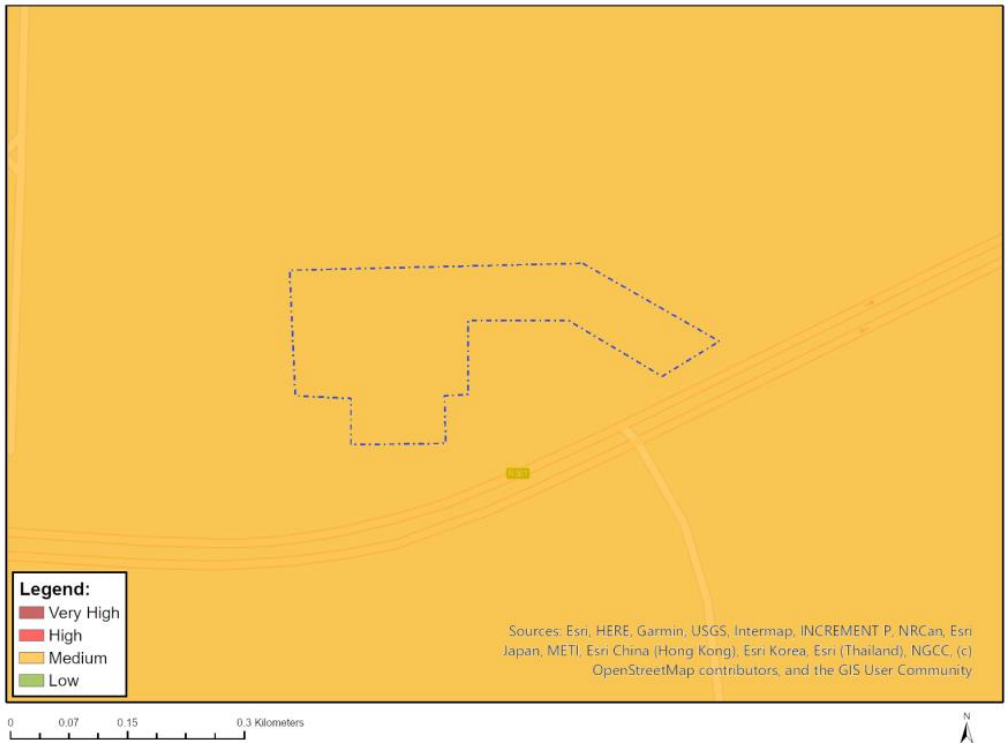


Figure 5-7 - Map of Avifauna Species Sensitivity

Source: DFFE Screening Report

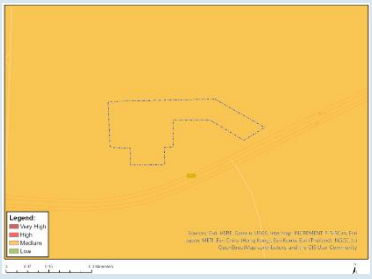
White-bellied Korhaan are very specific in their habitat requirements (Niemand 2009 and Barnes 2000) favouring tall 300-500mm, dense grassland in open lightly wooded areas. Suitable habitat must be expansive and free of anthropogenic disturbance in particular areas of high human densities, avoiding transformed areas altogether. Similarly, African Grass Owl are highly selective in terms of habitat and are associated with pristine, well managed rank grassland on the fringes of marshes, vleis, flood plains and pan edges. African Marsh Harrier prefer inland and coastal wetlands, for their breeding, roosting and foraging requirements. Although this species often extends their hunting grounds to grassland and cultivated areas, its association with wetlands remains paramount. The non-permanency of the pans and the absence of tall thick (rank) grassland precludes the regular occurrence of these three species within the proposed development area.

One of the key objectives of this assessment is to determine the likelihood of SCC occurrence within the Merafong LILO Power Lines & Switching Station development footprint and PAOI. Statistically, an unlikely event is an event that has a probability of occurring that is close to zero i.e. less than half. The SABAP2 atlas project provides essential data that underpins all conservation initiatives within South Africa. This robust dataset presents itself as a useful measure occurrence, particularly

in this case where over 124 checklists/surveys have been completed collectively for the pentads within which the proposed development area and PAOI occur. Species report rates (the proportion of checklists/surveys that note SCC) that are above 50% are likely to occur within the proposed development area and broader PAOI. Conversely, report rates that are less than 50% are an indication that a species is unlikely to occur within the proposed development area and PAOI. Relevant to this project, the seven SCC are reported at rates of between 1.1% and 3.4% indicating unlikely presence.

This site sensitivity verification disputes the medium sensitivity rating assigned to the Merafong LILO Power Lines & Switching Station. The significant disturbance and habitat transformation within the corridor precludes the regular occurrence of SCC. The absence of expansive natural habitat and the high levels of disturbance within the study area are confirmed by the low reporting rates of each grassland and savanna dependent priority species recorded during the SABAP2 survey period to date, supports a low site sensitivity.

Table 5-10 - Specialist Avifaunal Sensitivity disputing or confirming the assigned Screening Tool Sensitivity

Sensitivity Theme	Screening Tool Site Sensitivity	Specialist Site Sensitivity Verification	Specialist justification for disputed classification
Animal Species African Grass Owl Tyto capensis, African Marsh Harrier *Circus ranivorus* and White-bellied Korhaan *Eupodotis senegalensis*	Avifaunal Theme was not identified by the screening tool. Animal Species theme: Medium 	LOW 	The significant disturbance and habitat transformation within the corridor precludes the regular occurrence of SCC. The absence of expansive natural habitat and the high levels of disturbance within the study area are confirmed by the low reporting rates of each grassland and savanna dependent priority species recorded during the SABAP2 survey period to date, supports a LOW site sensitivity

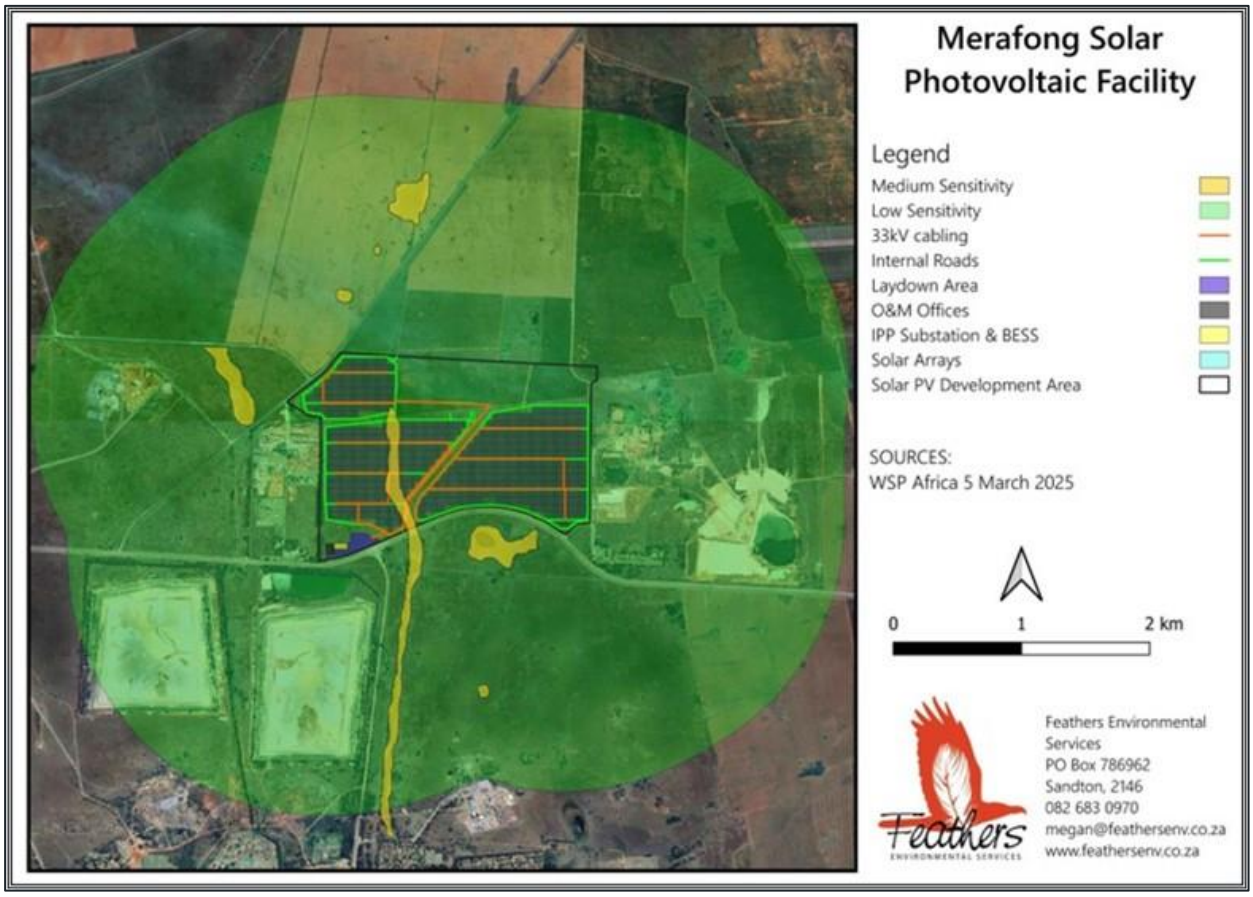


Figure 5-8 - Avifaunal sensitivities within the proposed Merafong development footprint

5.3.7 CIVIL AVIATION ASSESSMENT

Figure 5-9 illustrates the high civil aviation sensitivity rating identified for the project area by the DFFE Screening tool.

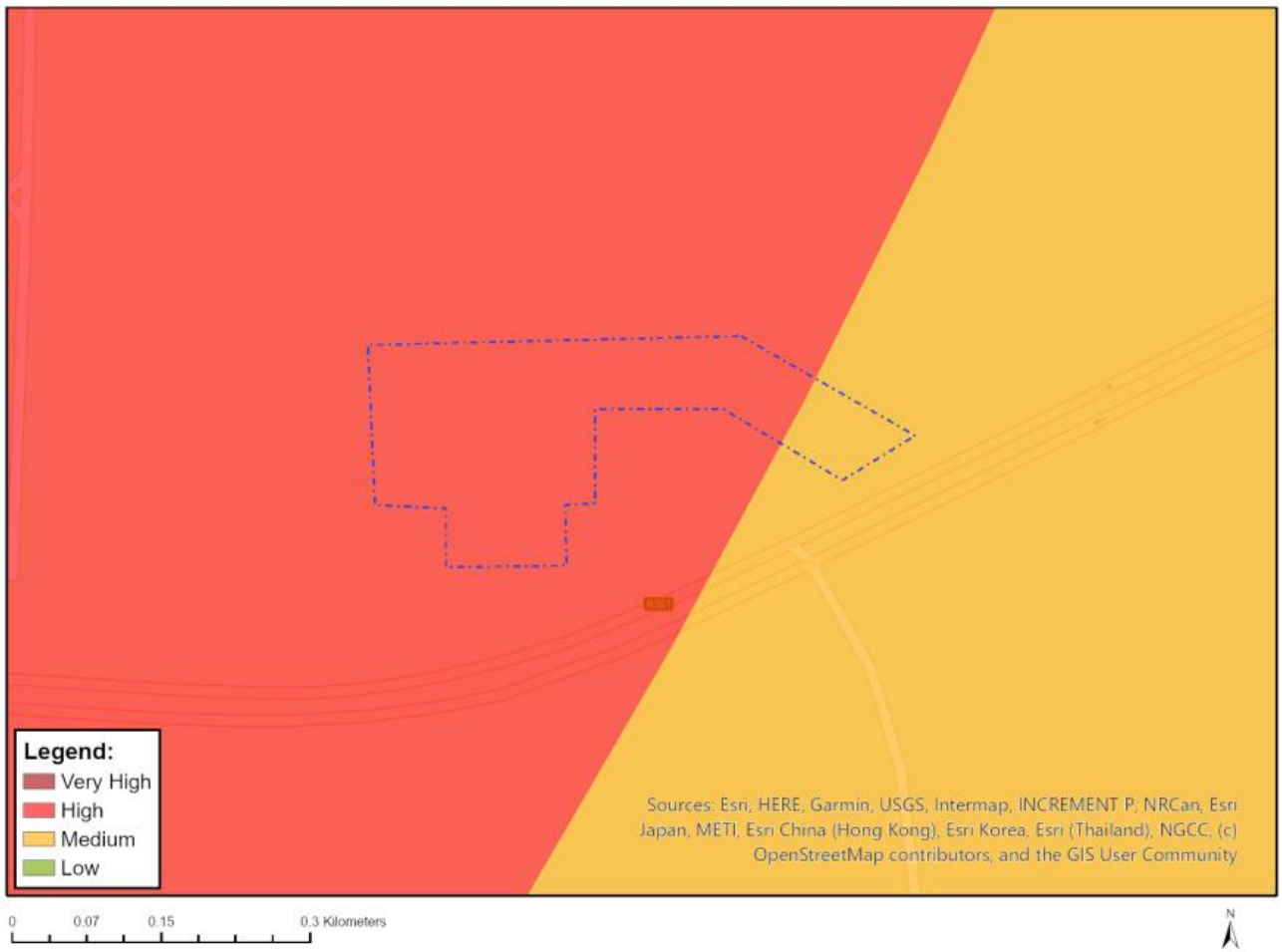


Figure 5-9 – DFFE screening tool sensitivity for civil aviation theme

According to the DFFE Screening Tool Report, civil aviation is regarded as having high sensitivity. due to the possible location of an aerodrome within 8 km of civil aviation aerodromes.

A google earth search shows that there are no active aerodromes within 8km of the site. The closest active aerodrome is the Carletonville Aerodrome which is 17km northwest of the proposed project. The high sensitivity identified in the DFFE Screening tool is therefore disputed and regarded as Low Sensitivity.

As of the 1st of May 2021, ATNS has been appointed as the new Obstacle application Service Provider for Wind farms and later Solar Plants. Their responsibility would pertain to the assessments, maintenance, and all other related matters in respect to Windfarms and in due time Power Plant assessments. The ATNS and SACAA have been included on the project stakeholder database. They have been informed of the proposed Project, and comment is being sought. Furthermore, an application for the Approval of Obstacles will be submitted to ATNS by the applicant.

5.3.8 DEFENCE ASSESSMENT

Figure 5-10 illustrates the low defence sensitivity rating identified for the project area by the DFFE Screening tool.

The defence theme is confirmed to have **low** sensitivity.

Figure 5-10 – DFFE screening tool sensitivity for Defence theme

Source: DFFE Screening Report

5.3.9 VISUAL

The following is extracted from the Visual SSVR report compiled by WSP and included as **Appendix I.**

The DFFE preliminary environmental impact assessment screening indicates that large parts of the Merafong Grid Connection area are of medium or high visual resource value for the overall project area as no sensitivity was identified in the grid area. The areas of least concern are located from R501 towards N12 national road (**Figure 5-11**). This information informed the visual resource value evaluation performed.

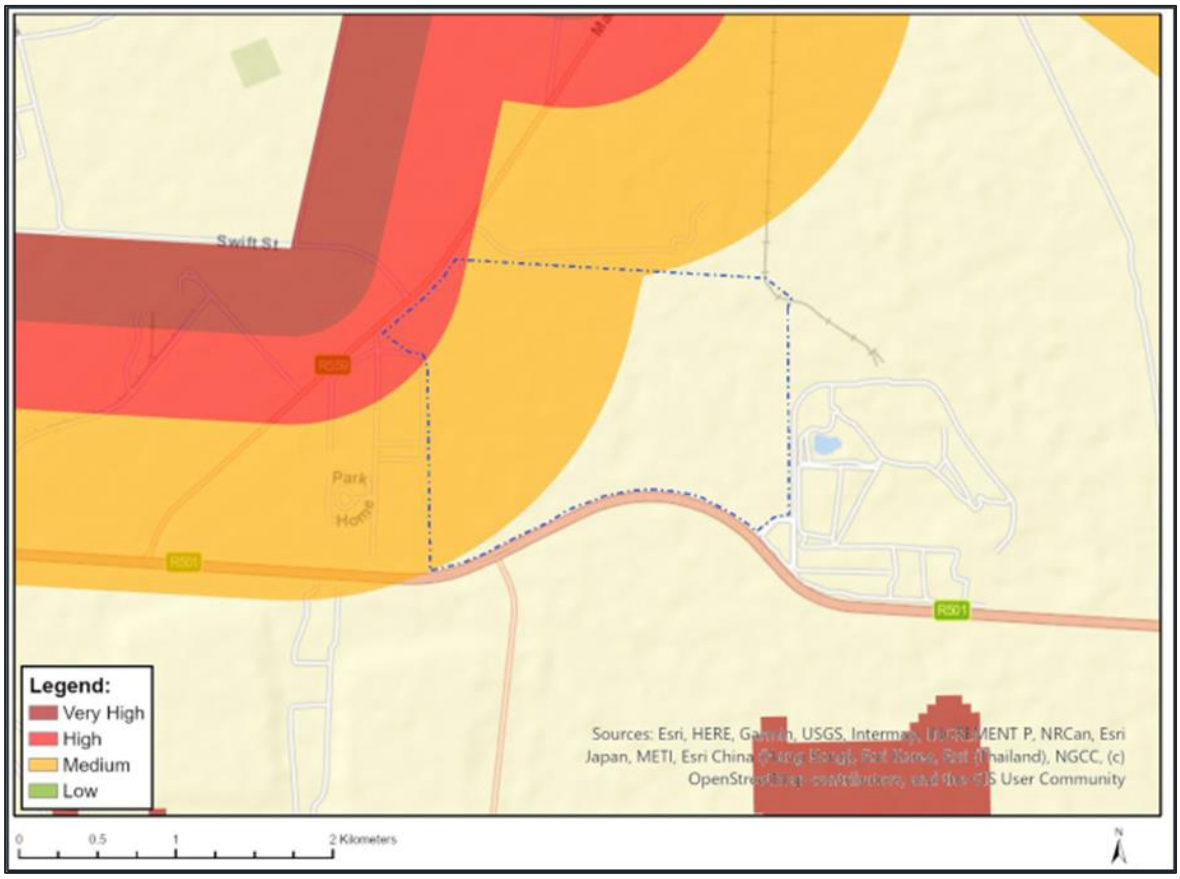


Figure 5-11 - DFFE environmental assessment screening tool - landscape solar theme (23/08/2024)

Visual resource Value Evaluation

A summary of the visual resource value of the study area vis-á-vis the tabulated factors is discussed below:

- The natural topography of the study area in general and site itself is distinct and central to the visual character of the region, with many features of visual interest. The Merafong site topography is largely characterised by many plateau and outcrop areas and a marked drop-off to the south and east, although there are fewer uniquely prominent landmarks than adjacent areas, with several artificial landforms namely the TSFs also occurring within view of the site. The visual resource value of this attribute is therefore rated as high (3)
- The hydrological aspect of the site is undistinctive and similar to many others in the area, although visually still largely intact, and is therefore rated as being of moderate (2) visual resource value
- Given that nationally only a fraction of the once expansive original Carletonville dolomite grasslands remain, and the further threat posed by mining, agriculture, urban expansion, and associated degradation, the visual resource value of the essentially untransformed nature of the site's vegetation cover is rated as very high. However, the grid connection will make use of the existing OHPL of which is situated on already transformed land (2)
- The site is predominantly in a natural state with limited agricultural land use. When considered within the broader context of the study area, which includes a mix of natural areas and various

human activities, the landscape appears partially transformed or disturbed. As a result, this attribute holds a moderate visual resource value (2)

The visual resource value assessment of the site within the context of the study area, in terms of the above criteria scores, is summarised in **Table 5-11**:

Table 5-11 - Visual resource value determination

Visual baseline attribute	Topography	Water bodies	Vegetation	Land uses
Visual resource value score	3	2	2	2
Total				9 (moderate)

Where:

- 4 – 6 = low
- 7 – 9 = moderate
- 10 – 13 = high
- 14-16 = very high

Based on the above score ranges, the overall visual resource value and sensitivity of most of the site, within the context of the surrounding study area, is rated as moderate, noting that the visual resource value of the overall study area is expected to range from moderate to high, based largely on the topographical character and land use characteristics. These preliminary findings will be verified during the impact assessment process.

The project site is located in a peri-urban and agricultural setting of which portions of the study area have been transformed by mining, urban, and to a lesser extent light industrial development., The visual resource value of the site within the context of the surrounding study area is moderate and has a low ability to absorb visual change., Furthermore, the visual resource value of the larger study area ranges from low to high, with areas of higher resource value to the south owing mainly to the lower prevailing levels of development, highly characteristic topography, and largely intact grassland cover. The DFFE screening tool low to medium sensitivity identified for the grid connection corresponds with the visual impact assessment.

The study area is populated with scattered township settlements and mining infrastructure, and the larger towns located further away from the site. As such, the potential visual receptor base to the proposed development is large but diverse.

The proposed project will have negative impacts on the visual environment, due to the introduction of visually intrusive power generation and support infrastructure. The significance of these impacts is expected to be low to moderate in the context of the existing visual setting, but limited visual mitigation is feasible and mainly relevant to the construction and decommissioning phases, as proposed in Section 11 of **Appendix I**.

However, given the partly developed nature of the study area and the fact that the site is not unique within the study area, the proposed development will not result in unacceptable residual or cumulative risks to sensitive visual receptors. Given these factors, and the ongoing and increasing need to secure stable power supplies to support the country's development, there is no concern

regarding any unacceptable visual effects arising from the development and can therefore be supported.

Therefore, the Sensitivity is verified as Low.

5.3.10 HERITAGE ASSESSMENT

The following is extracted from the Heritage Assessment compiled by Beyond Heritage and included as **Appendix J.**

Figure 5-12 illustrates the Low heritage sensitivity rating identified for the project area by the DFFE Screening tool.

Figure 5-12 - DFFE screening tool sensitivity for Heritage theme

The study area was assessed both on desktop level and by a non-intrusive pedestrian field survey. The field survey of the PV area noted high levels of surface disturbances from both agricultural and mining activities. The PV area is considered to be of low heritage potential and only a degraded cement foundation (MF 001) of low significance was identified. No other surface finds were present within the PV area. Any impact to the low significance ephemeral ruin is negligible and the inclusion of these features in an HIA report is considered sufficient mitigation. The area should be monitored during construction and a chance find procedure should be implemented.

The impact to heritage resources is expected to low provided that the recommendations in this report are adhered to, based on the South African Heritage Resource Authority (SAHRA) 's approval.

The DFFE Sensitivity is therefore confirmed as low.

5.3.11 PALAEONTOLOGICAL ASSESSMENT

The following is extracted from the Palaeontological Assessment compiled by Prof. Marion Bamford, on behalf of Beyond Heritage and included as **Appendix H.**

Figure 5-13 illustrates the very high palaeontological sensitivity rating identified for the project area by the DFFE Screening tool.

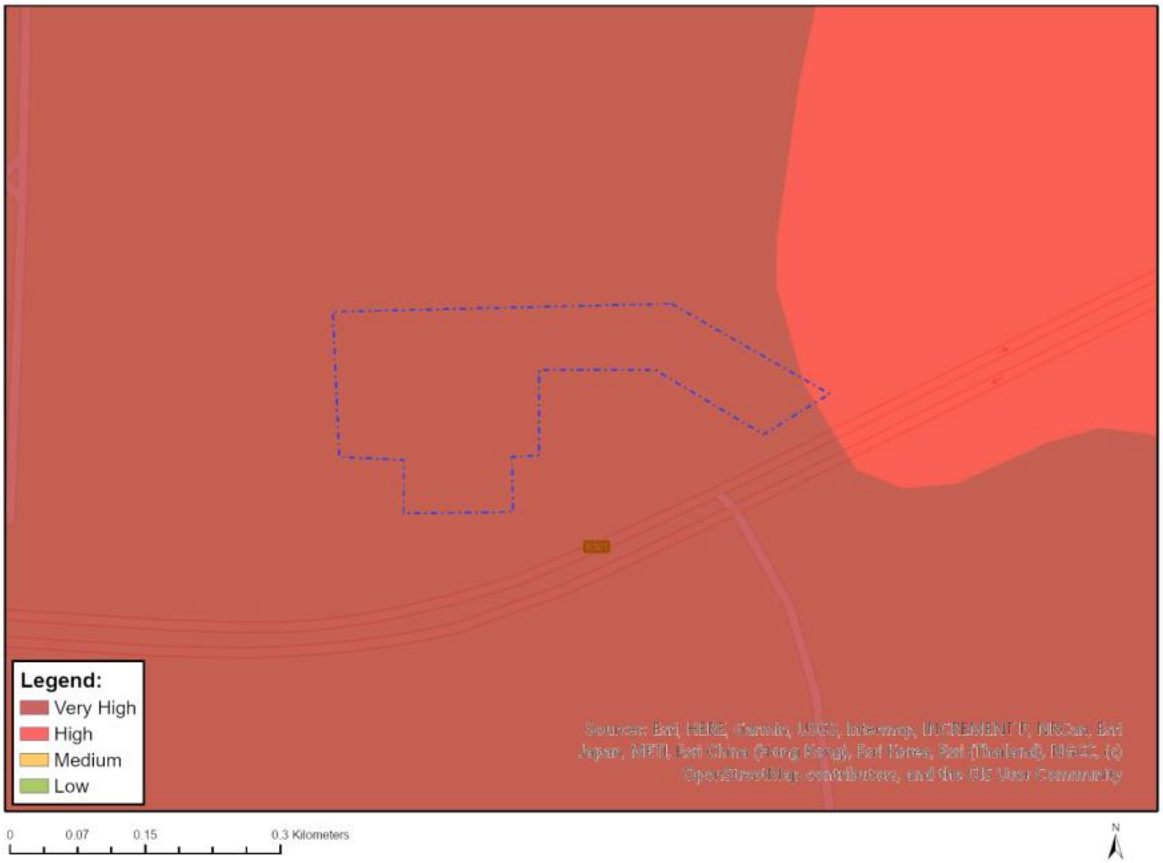


Figure 5-13 - DFFE screening tool sensitivity for Palaeontological theme

The site lies in the Transvaal Basin that has exposures of the basal members of the Transvaal Supergroup, and overlies the older rocks of the Witwatersrand Supergroup. Unconformably overlying the Transvaal Supergroup rocks are the much younger basal members of the Karoo Supergroup as this is the northern margin of the Main Karoo Basin. Along the rivers and watercourses are recent deposits of sand and alluvium, of late Quaternary age. Based on the site visit, experience and the lack of any previously recorded fossils from the area, it is extremely unlikely that any fossils would be preserved in the overlying soils of the Quaternary. Outcrops of the same formation in other parts of the country have fossils, therefore, there is a chance that they also occur in this area. The site visit and walk through in August 2024 (winter and burned vegetation so visibility was very good), however, confirmed that there were NO FOSSILS in the project footprint. There is a chance that plant fossils may occur below the ground surface in the mudstones, siltstones or shales of the Vryheid Formation or trace fossils such as stromatolites and microbialites in the dolomites of the Malmani Subgroup so a Fossil Chance Find Protocol should be added to the EMPr. If fossils are found by the environmental officer, or other responsible person once excavations for

foundations and infrastructure have commenced then they should be rescued and a palaeontologist called to assess and collect a representative sample. The impact on the palaeontological heritage would be low pre-mitigation and very low post-mitigation, as far as the palaeontology is concerned, so the project should be authorised. There are no no-go areas, no buffers are required and there will be no cumulative impact.

The DFFE sensitivity is therefore disputed and verified as low.

5.4 SENSITIVITY MAPPING

A preliminary consolidated environmental sensitivity map showing the "No-Go" areas (**Table 5-12**) has been compiled based on the sensitivities and buffers outlined in the specialist studies. The environmental sensitivities identified on site are included in **Table 5-12**. The development envelope avoids the very high (no-go) areas.

Table 5-12 - Environmental Sensitivities identified by specialists

Discipline	Infrastructure Type and Sensitivity Criteria		Exceptions
Heritage	National Significance (NS) - Grade 1	National Significance (NS) - Grade 1	Conservation; national site nomination
	Provincial Significance (PS) – Grade 2	Provincial Significance (PS) – Grade 2	Conservation; provincial site nomination
	Local Significance (LS) – Grade 3A High significance	Local Significance (LS) – Grade 3A High significance	Conservation; mitigation not advised
	Local Significance (LS) – Grade 3B High significance	Local Significance (LS) – Grade 3B High significance	Mitigation (part of site should be retained)
	Generally Protected A (GP. A) High/medium significance	Generally Protected A (GP. A) High/medium significance	Mitigation before destruction
	Generally Protected B (GP. B) Medium significance	Generally Protected B (GP. B) Medium significance	Recording before destruction
	Generally Protected C (GP.C) Low significance	Generally Protected C (GP.C) Low significance	Destruction
Avifauna	No-go areas were not identified by the specialist	No-go areas were not identified by the specialist	N/A
Aquatic Biodiversity	No-go areas were not identified by the specialist	No-go areas were not identified by the specialist	N/A
Agriculture	No-go areas were not identified by the specialist	No-go areas were not identified by the specialist	N/A
Terrestrial Ecology	No-go areas were not identified by the specialist	No-go areas were not identified by the specialist	N/A
Visual	No-go areas were not identified by the specialist	No-go areas were not identified by the specialist	N/A

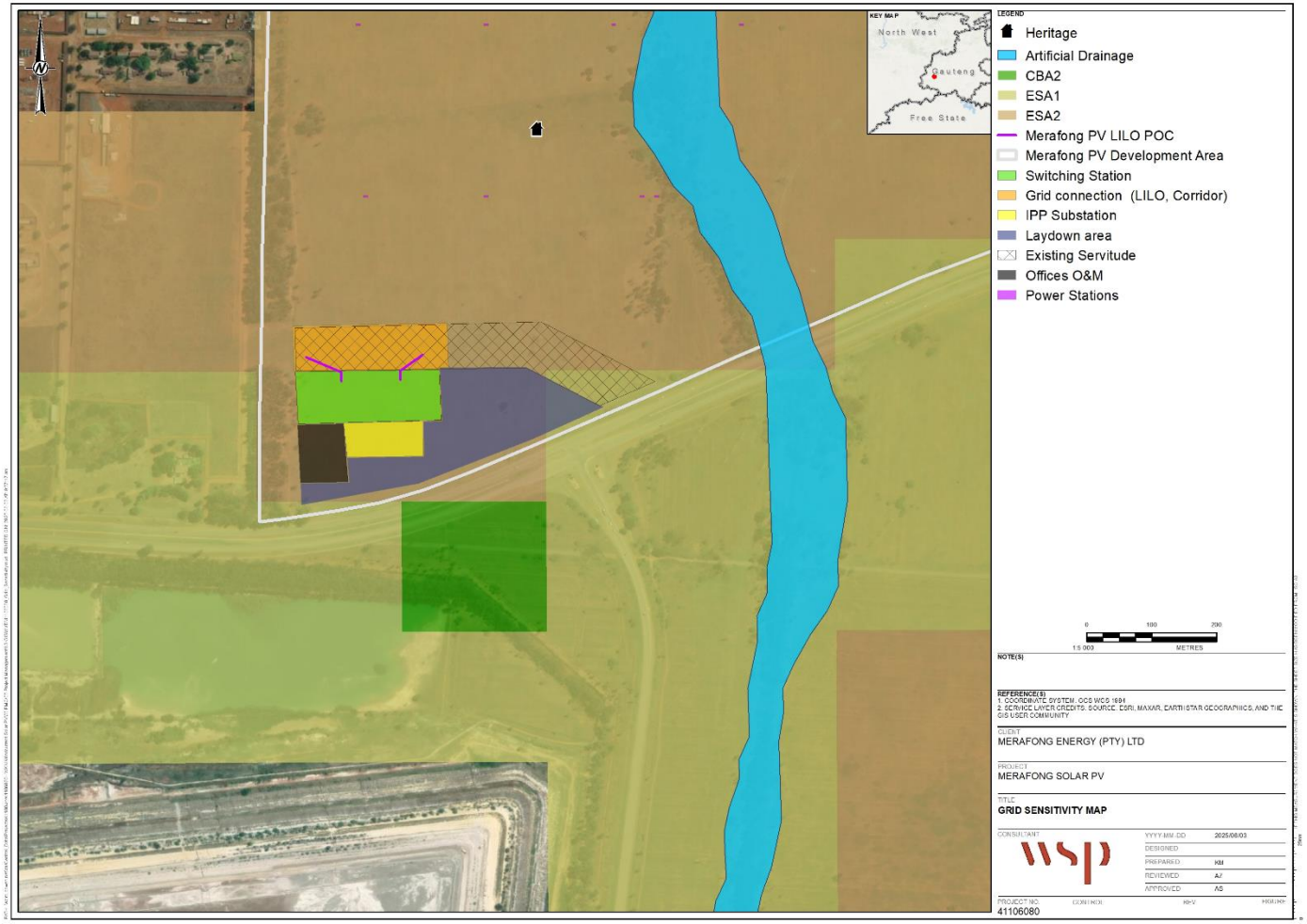


Figure 5-14 - Consolidated Sensitivity for Merafong LILO Grid Connection

6 CONCLUSION AND RECOMMENDATIONS

Merafong Energy (Pty) Ltd (Merafong) has appointed WSP Group Africa Pty Ltd (WSP), as an independent Environmental Assessment Practitioner (EAP) to submit an application for the registration of the Merafong LILO Grid Connection and associated infrastructure on various farm portions. The proposed project is situated approximately 10km east of Carletonville, within the jurisdiction of the Merafong City Local Municipality, in the West Rand District Municipality, Gauteng Province.

A registration application was submitted to the Department of Forestry, Fisheries and the Environment (DFFE) on **06 June 2025**.

The EAP hereby confirms the following environmental themes where sensitivity was confirmed to coincide with the DFFE Screening Tool Rating:

- Terrestrial Biodiversity (verified Low Sensitivity);
- Aquatic Biodiversity (verified Low Sensitivity);
- Plant Biodiversity (verified Low Sensitivity); and
- Heritage (verified Low Sensitivity).

The following environmental themes were disputed against the DFFE Screening Tool Rating, and found to be a lower sensitivity than what was identified by the DFFE Screening Tool:

- Agricultural (verified Medium to Low sensitivity).
- Animal Biodiversity (verified Low Sensitivity);
- Visual Impact Assessment (verified Low Sensitivity);
- Avifauna Impact Assessment (verified Low Sensitivity); and
- Palaeontology (verified Low Sensitivity).

The following recommendations have been made by the relevant specialists:

- Agriculture:
    - Impact management actions as contained in the pre-approved Generic EMPr template are sufficient for the avoidance, management and mitigation of the impacts and risks of the proposed development to agricultural production potential.
    - It is hereby confirmed that the agricultural sensitivity of the entire corridor and switching station footprint is medium because the land is not cropped, has insufficient land capability for viable and sustainable crop production, and is therefore only good enough for grazing. There are no areas within the corridor that need to be avoided. No site-specific mitigation actions are required
- Aquatic Biodiversity:
    - Impact management actions as contained in the pre-approved Generic EMPr template are sufficient for the avoidance, management and mitigation of the impacts and risks of the proposed development to aquatic biodiversity.
- Terrestrial Biodiversity:

- Impact management actions as contained in the pre-approved Generic EMPr template are sufficient for the avoidance, management and mitigation of the impacts and risks of the proposed development to terrestrial biodiversity.

- Avifauna:
  - In accordance with the baseline conditions as presented in Section 7 and the outcomes of the impact assessment detailed in Section 8, the construction and operation of the project components within the Merafong LILO Power Lines & Switching Station are not deemed to present unmitigable negative environmental issues or impacts. It is this specialist's opinion that the construction and operation of the project components within the corridor will result in acceptable levels of impact on the resident avifauna subject to mitigation and management measures.
  - Based on the anticipated impacts described above, the following recommendations are provided regarding practical mitigation measures for potentially significant impacts to be included in the EMPr in addition to those existing recommendations contained within the Generic EMPr for the Development and Expansion of Substation Infrastructure for the Transmission and Distribution of Electricity:
    - Collisions with the power line earthwires/conductors to be mitigated reactively using site-specific recommendations, by an avifaunal specialist, if they occur.
    - The 132kV power lines should be constructed using a bird friendly structure (i.e. Eskom DT 7641/7649 structure).
    - Additional mitigation in the form of insulating sleeves on jumpers present on strain poles and terminal poles is also required, alternatively all jumpers must be suspended below the crossarms.
    - Electrocutions within the switching station to be mitigated reactively using site-specific recommendations, by an avifaunal specialist, if they occur.

- Visual:
  - Airborne dust due to construction/decommissioning activities and resultant dust settling onto surrounding landscape
    - Water down construction roads and large bare areas as frequently as is required to minimise airborne dust
    - Enforce a 40 km/h speed limit on site for all vehicles
    - Monitor dust fallout if any complaints are received, using appropriate dust monitoring programme
  - Presence of visually intrusive construction/decommissioning related activities and equipment in the landscape
    - Ensure all construction areas are appropriately maintained and kept in tidy order
    - Reduce the number and size of material laydown and waste storage areas to the extent feasible, and barricade these from view with shade netting/similar if needed
    - Remove accumulated waste material and unused equipment from site as frequently as is feasible

- Repair unsightly and ecologically detrimental erosion damage to steep or bare slopes as soon as possible and re-vegetate these areas using a suitable mix of indigenous grass species

- Light pollution at night due to grid connection safety and project site security lighting
  - Utilise security lighting that is movement activated rather than permanently switched on, to prevent unnecessary constant illumination
  - Plan the lighting requirements of the facility to ensure that lighting meets the need to keep the site secure and safe, without resulting in excessive illumination
  - Reduce the height and angle of illumination from which lights are fixed as much possible while still maintaining the required levels of illumination
  - Identify zones of high and low lighting requirements, focusing on only illuminating areas to the minimum extent possible to allow security surveillance
  - Avoid up-lighting of structures by rather directing lighting downwards and focussed on the area to be illuminated
  - Fit all security lighting with 'blinkers' or specifically designed fixtures, to ensure light is directed downwards while preventing side spill. Light fixtures of this description are commonly available for a variety of uses and should be used to the greatest extent possible

- Heritage:
  - Development activities must be confined to the approved development footprint only;
  - Monitoring of the Project area (with specific reference to site MF001) by the ECO during pre-construction and construction phases for heritage and palaeontological chance finds, if chance finds are encountered to implement the Chance Find Procedure for the Project

- Palaeontology:
  - A Fossil Chance Find Protocol should be added to the EMPr. If fossils are found by the environmental officer, or other responsible person once excavations for foundations and infrastructure have commenced then they should be rescued and a palaeontologist called to assess and collect a representative sample.

The SSVR and EMPr are made available for public review for a period of 30 days from **06 June 2025 to 07 July 2025,** at the following public places:

- Carletonville Library;
- Fochville Library;
- WSP website - https://www.wsp.com/en-za/services/public-documents
- WSP datafree website - https://wsp-engage.com/

This SSVR, will be updated to include all comments and responses received during the public review period, and will be submitted to the DFFE for approval.

It is the opinion of WSP that the information contained in this document (read in conjunction the EMPr) is sufficient for the DFFE to make an informed decision on the registration application being applied for in respect of this Project.

Mitigation measures have been developed, where applicable, for the above aspects and are presented within the EMPr (**Appendix L**). It is imperative that all impact mitigation recommendations

contained in the EMPr, of which the environmental impact assessment took cognisance, are legally enforced.

Considering the findings of the above, no fatal flaws were identified for the proposed Project. The sensitivity pertaining to the environmental themes has been verified to be medium to low. It is thus the opinion of the EAP that the Project can proceed, and that all the prescribed mitigation measures and recommendations are considered by the issuing authority.

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