Savannah Environmental (Pty) Ltd | Directors: KM Jodas, J Thomas, M Matsabu
Company Reg No.: 2006/000127/07
VAT Reg No.: 4780226736

SITE SENSITIVITY VERIFICATION REPORT FOR THE HIGHVELD SOLAR PV FACILITY ON PORTIONS 79 AND 56 AND THE REMAINDER OF PORTION 10 OF THE FARM RIETFONTEIN 388 AS WELL AS THE REMAINDER OF THE FARM RIETFONTEIN 3, JB MARKS LOCAL MUNICIPALITY, NORTH WEST PROVINCE (DFFE REFERENCE: 14/12/16/3/3/1/2671)

The development of a solar photovoltaic (PV) facility with a generating capacity of up to 240MW and associated grid connection infrastructure is proposed by WKN Windcurrent SA (Pty) Ltd on a site located approximately ~15km north east of Stilfontein in the North West Province (refer to **Figure 1**). The solar PV development will be known as the Highveld Solar PV Facility. The grid connection solution will be known as Highveld PV Grid Connection, is required to connect the project/s to the Eskom grid (within a 300m wide corridor approximately 20km in length) and will form part of a separate application for Environmental Authorisation. The projects are situated within the JB Marks Local Municipality and within the Dr Kenneth Kaunda District Municipality.

The PV facility is located on the Portions 56 and 79, and the Remainder of Portion 10 of Farm Rietfontein 388 as well as Remainder of Farm Rietfontein 3. The grid connection infrastructure will include a substation on portion 56 and the Remainder of Portion 10 of the Farm Rietfontein 388, and a power line within a 300m wide and 20km long corridor. The corridor extends between the proposed Highveld Solar PV Facility and a point of connection on the Hermes DS - Potchefstroom DS 1 and Buffels East 1 - Potchefstroom 132kV Feeder lines located east of Khuma and the R502.

The Highveld Solar PV Facility is located within the Klerksdorp Renewable Energy Development Zone (REDZ), the project is therefore subject to a Basic Assessment (BA) process, as well as a shortened timeframe of 57 days for the processing of an Application for Environmental Authorisation in accordance with the EIA Regulations, 2014 (as amended), as well as the GNR 114 as formally gazetted on 16 February 2018. The Highveld PV Grid Connection is located in the Central Corridor of the Strategic Transmission Corridors.

A project site considered to be technically suitable for the development of the solar PV facility, with an extent of approximately ~1400ha was demarcated within this project site. It allows an adequate footprint (~433ha) for the installation of a solar PV facility with a contracted capacity of up to 240MW, while allowing for the avoidance of environmental site sensitivities.

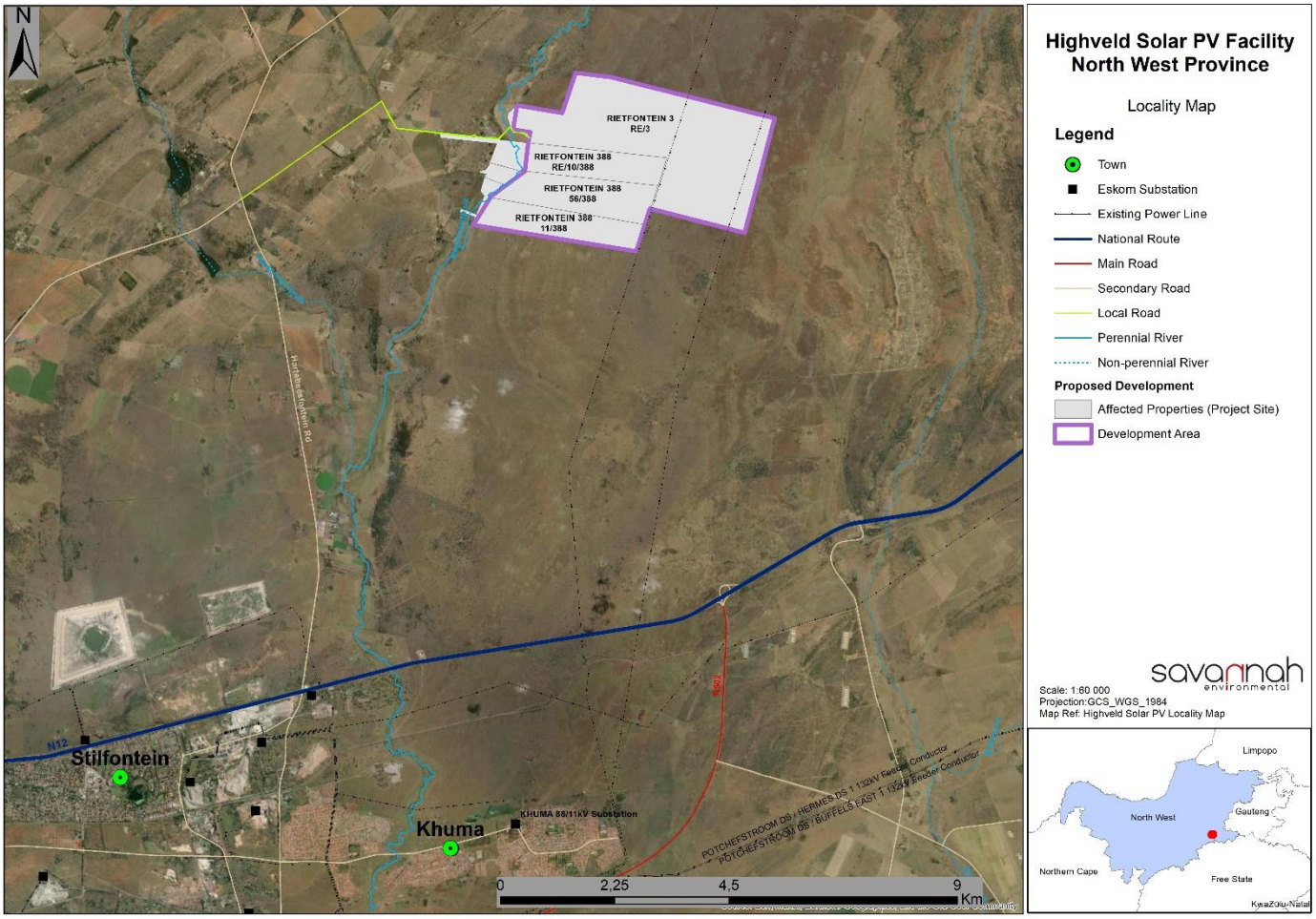

Figure 1: Locality map of the project site showing the location of the site in relation to the closest towns of the area

SENSITIVITY VERIFICATION METHODOLOGY:

The site sensitivity verification report was compiled by the EAP and is based on specialist desktop information and field work undertaken as part of the BA process. This report forms part of the Basic Assessment (BA) process being undertaken for the proposed Highveld Solar PV Facility and associated infrastructure on Portions 79 and 56 and the Remainder of Portion 10 of the Farm Rietfontein 388 as well as the Remainder of the Farm Rietfontein 3, JB Marks Local Municipality, North West Province.

SITE SENSITIVITY VERIFICATION:

The table below and reference to specialist assessments serve to:

» Verify land use and sensitivities identified in the screening report; and
» Confirm / contest the need for the various specialist inputs called for in terms of the screening tool report.

Environmental Theme/Specialist Assessment	Sensitivity Rating and Specialist Input Identified in Terms of the DFFE Screening Tool	Verification of Site-Specific Sensitivity and Motivation of the Need for Specialist Investigation
Agricultural Impact Assessment	Screening tool: High Sensitivity Required an agricultural impact assessment (in accordance with the protocol prescribed in GNR 320). Verified Sensitivity by Specialist: **Medium to Low**	The Highveld Solar PV Facility is mostly characterised with "Very Low to Low" land capability and land potential sensitivities. It is anticipated that the construction and operation of the Highveld Solar PV Facility will have impacts that range from medium to low. Through the consistent implementation of the recommended mitigation measures, most of the impacts can be reduced to low significance. It is of the specialist's opinion that this project be considered favourably, permitting that the mitigation measures are followed to prevent soil erosion and soil pollution and to minimise impacts on the veld quality of the farm portions that will be affected. A Soils and Agricultural Potential Impact Assessment is included as **Appendix F** of the BA Report.
Landscape/Visual Impact Assessment	Screening tool: Very High Sensitivity (General Assessment Protocols) Verified Sensitivity by Specialist: **Medium to Low**	The following is a summary of impacts remaining, assuming mitigation as recommended, is exercised: » The PV facility is expected to have a high visual impact pre-mitigation and a moderate visual impact post mitigation on residents of the Rietfontein East homesteads and one unknown homestead, within a 1km radius of the proposed PV facility. » The operational PV facility could have a moderate visual impact on sensitive receptors within a 1-6km radius of the PV facility structures. This impact may be mitigated to low. » The anticipated impact of lighting at the PV facility is likely to be of moderate significance and may be mitigated to low. » The potential visual impact related to solar glint and glare as a road travel hazard is expected to be of negligible significance before and after mitigation.

Environmental Theme/Specialist Assessment	Sensitivity Rating and Specialist Input Identified in Terms of the DFFE Screening Tool	Verification of Site-Specific Sensitivity and Motivation of the Need for Specialist Investigation
		» The only residences within a 1km radius of the PV facility are the residents of the Rietfontein East homesteads to the west and one unknown homestead to the south. Since these residents are located to west and south of the site and it is assumed that the PV panels will be oriented to the north for maximum sun exposure it is unlikely that these receptors will be impacted upon by solar glint and glare. Therefore, the potential visual impact related to solar glint and glare on static ground-based receptors (residents of homesteads) is therefore expected to be of low significance, both before and after mitigation. The significance of the visual impacts is expected to range from moderate to low as a result of the generally industrial and developed character of the landscape. There are a very limited number of potential sensitive visual receptors within a 3km radius of the proposed structures, although the possibility does exist for visitors to the region to venture into closer proximity to the PV facility structures. These observers may consider visual exposure to this type of infrastructure to be intrusive. A Visual Impact Assessment has been undertaken for the Highveld Solar PV Facility and is included in this BA Report as **Appendix H.**
Archaeological and Cultural Heritage Impact Assessment	Screening tool: Low Sensitivity Verified Sensitivity by Specialist: **Low**	None of the heritage resources identified fall within the area PV layout provided and as such, no direct impact to any heritage resources is anticipated. The low sensitivity rating is supported, and no study is required in this regard. However, a Heritage Impact Assessment (which covers both archaeological and cultural aspects of the development area and development footprint) has been undertaken for the Highveld Solar PV Facility and is included in this BA Report as **Appendix G.** The HIA complies with the requirements of the NHRA.
Palaeontology Impact Assessment	Screening tool: Very High Sensitivity Verified Sensitivity by Specialist: **Low** (If no fossils are uncovered during construction)	According to the SAHRIS Palaeosensitivity Map the development sites are underlain by sediments of very high fossil sensitivity. Based on the nature of the project, surface activities may impact upon the fossil heritage if preserved in the development footprint. The site visit and walk through confirmed that there were no fossils in the project footprint. One small stromatolite only was found below the existing power line, i.e. not in the route for the new powerline. Furthermore, the main solar cluster area is not on dolomites, only some cherts were present. As such there is an extremely small chance that trace fossils from the Malmani Subgroup may be disturbed. Taking account of the defined criteria, it is the specialist's opinion that the potential impact to fossil heritage resources is extremely low. With the implementation of mitigation measures by the developer, contractors, and operational staff, the significance of impacts of the Highveld Solar PV Facility palaeontological resources will be low.

<table>
<tr><th>Environmental Theme/Specialist Assessment</th><th>Sensitivity Rating and Specialist Input Identified in Terms of the DFFE Screening Tool</th><th>Verification of Site-Specific Sensitivity and Motivation of the Need for Specialist Investigation</th></tr>
<tr><td></td><td></td><td>A Heritage Impact Assessment (which covers both archaeological and cultural aspects of the development area and development footprint) has been undertaken for the Highveld Solar PV Facility and is included in this BA Report as Appendix G. The PIA complies with the requirements of the NHRA.</td></tr>
<tr><td>Terrestrial Biodiversity Impact Assessment</td><td>Screening tool: Very high Sensitivity

Required a terrestrial biodiversity impact assessment and a plant species assessment (Terrestrial Biodiversity Assessment Protocols)

Verified Sensitivity by Specialist: Medium</td><td>The completion of the terrestrial biodiversity assessment found a colony of Red Listed plants, Lithops lesliei, was identified in the south- eastern portion of the site. This species is currently listed as being Near Threatened and is regarded as having a very-high conservation value which corroborate with the Very high sensitivity rating from the screening tool report. However, a very small area provides the habitat suitable for this species, and it is only this habitat which must be avoided by the development footprint. With avoidance of this area as the primary mitigation, the sensitivity rating was verified to be Medium by the specialist.

Summary of habitat types delineated within the project area
<table>
<tr><th>Habitat (Area)</th><th>Conservation Importance</th><th>Functional Integrity</th><th>Biodiversity Importance</th><th>Receptor Resilience</th><th>Site Ecological Importance</th></tr>
<tr><td>Red Listed Plants</td><td>High</td><td>High</td><td>High</td><td>Very Low</td><td>Very High</td></tr>
<tr><td>Wetland</td><td>Medium</td><td>High</td><td>Medium</td><td>Low</td><td>High</td></tr>
<tr><td>Drainage Area</td><td>Medium</td><td>Medium</td><td>Medium</td><td>Medium</td><td>Medium</td></tr>
<tr><td>Degraded</td><td>Medium</td><td>Medium</td><td>Medium</td><td>Medium</td><td>Medium</td></tr>
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</table>
Five (5) different terrestrial habitat types were delineated within the project area, and one set of wetland habitats as a whole. Based on the criteria provided in Section 5.1 of the specialist report, all habitats within the assessment area of the proposed project were allocated a sensitivity category.

An Ecological Impact Assessment (including terrestrial and freshwater ecology) has been undertaken for the Highveld Solar PV Facility and is included as Appendix D of the BA Report.</td></tr>
<tr><td>Aquatic Biodiversity Impact Assessment</td><td>Screening tool: Very high Sensitivity

Required an Aquatic Biodiversity impact assessment (in accordance with</td><td>Summary of habitat types delineated within the project area
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<tr><th>Habitat (Area)</th><th>Conservation Importance</th><th>Functional Integrity</th><th>Biodiversity Importance</th><th>Receptor Resilience</th><th>Site Ecological Importance</th></tr>
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Environmental Theme/Specialist Assessment	Sensitivity Rating and Specialist Input Identified in Terms of the DFFE Screening Tool	Verification of Site-Specific Sensitivity and Motivation of the Need for Specialist Investigation
	the protocol prescribed in GNR 320, Aquatic Biodiversity Assessment Protocols). Verified Sensitivity by Specialist: **Low**	The project site is located directly adjacent to the Kromdraaispruit watercourse. The specialist has rated the site ecological importance for this wetland area as high. However, the PV development footprint avoids this regulated area (500m) entirely. It is of the specialist's opinion that the impact on wetlands and watercourses can be delineated to low after mitigation measures are implemented. Five (5) different terrestrial habitat types were delineated within the project area, and one set of wetland habitats as a whole. Based on the criteria provided in Section 5.1 of the specialist report, all habitats within the assessment area of the proposed project were allocated a sensitivity category. An Ecological Impact Assessment (including terrestrial and freshwater ecology) has been undertaken for the Highveld Solar PV Facility and is included as **Appendix D** of the BA Report.
Avian Impact Assessment	Screening tool: Low Sensitivity Verified Sensitivity: **Medium to Low**	Sensitivities were compiled for the avifauna study based on the field results and desktop information. Based on the criteria provided in the specialist report, all habitats within the assessment area of the proposed project were allocated a sensitivity category. Three prominent avifaunal habitat types were identified on the development area, which consisted of open savannoid grassland with bush clump mosaics, artificial livestock watering points and the Kromdraaispruit floodplain. An evaluation of potential and likely impacts on the avifauna revealed that the impact significance was moderate to low after mitigation (depending on the type of impact). However, the risk for certain waterbirds (mainly large-bodied waterfowl such as the South African Shelduck *Tadorna cana*, Egyptian Goose *Alopochen aegyptiacus* and members of the genus *Anas*) colliding with the PV infrastructure remained eminent due to the presence of the nearby Kromdraaispruit. It is recommended that the proposed mitigation measures and monitoring protocols (e.g. post construction monitoring) be implemented during the construction and operational phase of the project. An Avifauna Impact Assessment has been undertaken for the Highveld Solar PV Facility and is included as **Appendix E** of the BA Report. The assessment has been undertaken in accordance with the requirements of the BirdLife SA Best Practice Guidelines for Solar Developments.
Civil Aviation Assessment	Screening tool: Low Sensitivity	The Civil Aviation Authority (CAA) and Air Traffic Navigation Services (ATNS) have been consulted throughout the BA process to obtain input and details of any requirements for further studies. No objections to the project have been received.

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<tr><td></td><td>Verified Sensitivity: Low</td><td>The project site is not located within close proximity of any aerodromes, landing strips or infrastructure. The low sensitivity rating is supported, and no study is required in this regard.</td></tr>
<tr><td>Defence Assessment</td><td>Screening tool: Low Sensitivity

Verified Sensitivity: Low</td><td>The project site is not located within close proximity of any military base or infrastructure. The low sensitivity rating is supported, and no study is required in this regard.</td></tr>
<tr><td>RFI Assessment</td><td>Screening tool: Low Sensitivity

Verified Sensitivity: Low</td><td>The project site under consideration for the development of the Highveld Solar PV Facility is located outside of an Astronomy Advantage Area and within an area that as classified as having low sensitivity for telecommunication. The low sensitivity rating is supported, and no study is required in this regard. No comments or objections in this regard have been received during the public participation process.</td></tr>
<tr><td>Social Impact Assessment</td><td>The screening report does not indicate a rating for this theme.</td><td>A Social Impact Assessment has been undertaken for the Highveld Solar PV Facility and is included in the BA Report as Appendix I.</td></tr>
<tr><td>Plant Species Assessment</td><td>Screening tool: Medium Sensitivity

Necessitating a plant species assessment (General Assessment Protocols).

Verified Sensitivity by Specialist: Medium</td><td rowspan="2">The completion of the terrestrial biodiversity assessment found a colony of Red Listed plants, Lithops lesliei, was identified in the south-eastern portion of the site. This species is currently listed as being Near Threatened and is regarded as having a very-high conservation value which corroborate with the Very high sensitivity rating from the screening tool report. However, a very small area provides the habitat suitable for this species, and it is only this habitat which must be avoided by the development footprint. With avoidance of this area as the primary mitigation, the sensitivity rating was verified to be Medium by the specialist.

Summary of habitat types delineated within the project area
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Five (5) different terrestrial habitat types were delineated within the project area, and one set of wetland habitats as a whole. Based on the criteria provided in Section 5.1 of the specialist report, all habitats</td></tr>
<tr><td>Animal Species</td><td>Screening tool: Medium Sensitivity

Necessitating an animal species assessment (in accordance with Animal Species Assessment Protocols</td></tr>
</table>

Environmental Theme/Specialist Assessment	Sensitivity Rating and Specialist Input Identified in Terms of the DFFE Screening Tool	Verification of Site-Specific Sensitivity and Motivation of the Need for Specialist Investigation
	prescribed in GN 43855) Verified Sensitivity by Specialist: **Medium**	within the assessment area of the proposed project were allocated a sensitivity category. Five (5) mammal species of Least Concern were observed that could naturally occur outside of protected areas. An Ecological Impact Assessment (including terrestrial and freshwater ecology) has been undertaken for the Highveld Solar PV Facility and is included as **Appendix D** of the BA Report.
Socio-Economic Assessment	The screening report does not indicate a rating for this theme.	A Social Impact Assessment has been undertaken for the Highveld Solar PV Facility and is included in the BA Report as **Appendix I.**

Based on the outcomes of the Basic Assessment Process and the outcomes of the Site Sensitivity Verification, the following studies were identified as being required:

- Terrestrial Ecology and Wetland Impact Assessment
- Avifauna Impact Assessment
- Soils and Agricultural Potential Impact Assessment
- Visual Impact Assessment
- Social Impact Assessment

The specialist studies undertaken for this project are required to comply with either the above Protocols or, alternatively, with the requirements of Appendix 6 of the NEMA EIA Regulations of 2014 (as amended 2017 & 2021).