

SITE SENSITIVITY VERIFICATION REPORT FOR THE PROPOSED TRANSALLOYS SOLAR PV FACILITY AND ASSOCIATED INFRASTRUCTURE ON PORTIONS 34 AND 35 OF THE FARM ELANDSFONTEIN 309JS AND PORTIONS 20 AND 24 OF THE FARM SCHOONGEZICHT 308JS, WITHIN THE EMALAHLENI LOCAL MUNICIPALITY

Transalloys (Pty) Ltd propose to develop a commercial Solar Photovoltaic (PV) Energy Facility and associated electrical infrastructure on Portions 34 and 35 of the Farm Elandsfontein 309JS and Portions 20 and 24 of the Farm Schoongezicht 308JS, adjacent to their smelter complex on Clewer Road 1034, eMalahleni, in the Emalahleni Local Municipality. The project is located in the greater Nkangala District Municipality of Mpumalanga Province, approximately 34km west of Middelburg and 37km east of Bronkhorstspuit. The entire extent of the site falls within the Emalahleni Renewable Energy Development Zone (REDZ9) and the International Corridor of the Strategic Transmission Corridors (**Figure 1.1**). The facility will have a contracted capacity of up to 55MW and will be known as the Transalloys Solar PV Energy Facility.

The PV facility is proposed in order to partially meet Transalloys' current electricity needs and future expansion requirements. The plant will be a captive generating plant whereby generated electricity will be fed directly into the smelter complex for direct consumption. The development of the power plant project would effectively mean that Transalloys would become less dependent on the Eskom electricity grid, thereby creating additional capacity within the Eskom grid for use by other electricity users.

A development area of ~67.9ha has been identified by Transalloys (Pty) Ltd for the establishment of the PV facility. The proposed facility will have a contracted capacity of up to 55MW and will include the following infrastructure:

- » Solar PV array comprising PV modules and mounting structures (Bi-facial panels with single axis tracking are preferred over fixed-axis or double axis tracking systems, and mono-facial panels. However, the preferred panel technology will be confirmed during the final design phase.)
- » Inverters and on-site transformers with total capacity up to 53MVA.
- » Cabling between the project components.
- » Underground 33kV power line to connect the solar PV facility to the existing Transalloys Substation
- » Site control building and Site Security office, operations and control, and maintenance and storage laydown areas.
- » Access roads and internal distribution roads.

To evacuate the generated power to Transalloys Smelter, a 33kV underground power line will be established to connect the on-site facility transformers to the existing Transalloys Substation. This proposed power line will run within the Transalloys property, parallel to the existing internal distribution roads.

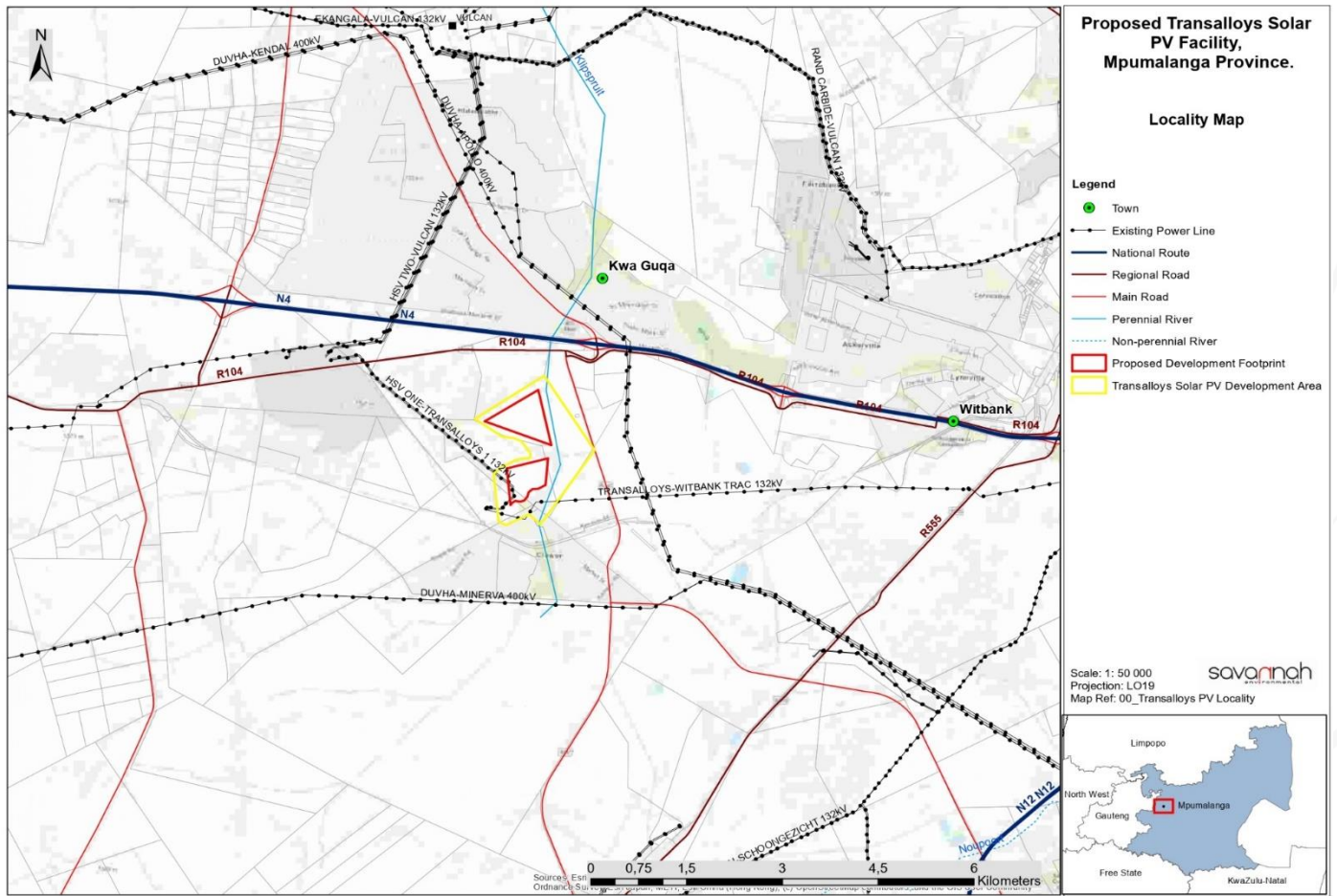


Figure 1: Locality map illustrating the location of the Transalloys Solar PV Facility and associated infrastructure

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 Basic Assessment process. This report forms part of the Basic Assessment process being undertaken for the proposed Transalloys Solar PV Facility and associated infrastructure on infrastructure on Portions 34 and 35 of the Farm Elandsfontein 309JS and Portions 20 and 24 of the Farm Schoongezicht 308JS, within the Emalahleni Local Municipality in Mpumalanga 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 as per the Screening Tool (relating to the need for the study)	Verification of Site Sensitivity												
Agriculture	High	<p>The proposed Transalloys Solar PV energy facility project is mostly characterised with “Low” to “Moderate” land capability sensitivities.</p> <p>Smaller patches are characterised by sensitivities up to “High”. Furthermore, various crop field boundaries were identified by means of the DEA Screening Tool (2022), which are predominantly characterised by “High” sensitivities with one area being classified as “Very High” sensitivity. It is the specialist’s recommendation that such high potential crop fields be avoided for the project. In a case relocating of the project is not feasible, intensive mitigation measures should be applied.</p> <p>A Soils and Agricultural Potential Compliance Statement is included in this EIA Report as Appendix F of the EIA Report.</p>												
Animal Species	High	<p>The completion of the terrestrial desktop and field studies disputes the ‘Very High’ sensitivity presented in screening report. As most of the project area represents Degraded Grassland habitat which has been exposed to significant levels of historical disturbance and is thus assigned a ‘Low’ sensitivity. Portions of land within the project area, namely the Wetland habitats, maintain a higher level of functionality and are assigned a ‘High’ sensitivity.</p> <p>Three (3) 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 5.2 of the specialist report, all habitats within the assessment area of the proposed project were allocated a sensitivity category.</p> <p>Summary of habitat types delineated within the project area</p> <table border="1"> <thead> <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> </thead> <tbody> <tr> <td>Transformed</td> <td>Very Low</td> <td>Low</td> <td>Very Low</td> <td>High</td> <td>Very Low</td> </tr> </tbody> </table>	Habitat (Area)	Conservation Importance	Functional Integrity	Biodiversity Importance	Receptor Resilience	Site Ecological Importance	Transformed	Very Low	Low	Very Low	High	Very Low
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Landscape (Solar)	Very High	<p>The majority of the exposed areas in this area fall within the Transalloys property itself. The Evras Highveld Steel, Transalloys Smelter Complex and the Landua mining activities are the dominant industries in the area. It is generally acceptable, from a visual impact point of view, to place industrial infrastructure within existing industrial areas. The existing visual disturbances brought about by the Transalloys Smelter and the Evras Highveld Steel works, and the close proximity of the proposed PV Facility to these, somewhat mitigates the visual impact of the structures and activities.</p> <p>A Visual Impact Assessment has been undertaken for the Solar Energy Facility and is included in this EIA Report as Appendix G.</p>																		
Archaeological and Cultural Heritage	Very High	<p>There is number of heritage resources within and in proximity to the area proposed for Transalloys Solar PV Energy Facility including "the remains of a very large graveyard containing at least 90 graves. Different types of grave dressing and headstones were found, being cement borders with headstones, heaps of soil, stone packed with or without headstones, granite borders and headstones and heaps of brick.</p> <p>A Heritage Screener has been undertaken for the Solar Energy Facility and is included in this EIA Report as Appendix H.</p>																		
Palaeontology	Very High	<p>The project area proposed for Transalloys PV Solar Energy facility is underlain by sediments of very high palaeontological sensitivity. According to the CGS Map for Pretoria, the underlying geology of the development area consists of sediments of the Eccca Formation. "The region is known for its fossiliferous mudstones and sandstones and it is highly probable that fossils will be encountered during construction if the excavations expose the bedrock.</p> <p>A Heritage Screener has been undertaken for the Solar Energy Facility and is included in this EIA Report as Appendix H.</p>																		
Terrestrial Biodiversity	Very High	<p>The completion of the terrestrial desktop and field studies disputes the 'Very High' sensitivity presented in screening report. As most of the project area represents Degraded Grassland habitat which has been exposed to significant levels of historical disturbance and is thus assigned a 'Low' sensitivity. Portions of land within the project area, namely the Wetland habitats, maintain a higher level of functionality and are assigned a 'High' sensitivity.</p>																		

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Aquatic Biodiversity	Very High	<p>The completion of the terrestrial biodiversity assessment found that the Degraded Thornveld habitat that overlaps with the screening report is of medium sensitivity and thus do not corroborate the screening report in that regard.</p> <p>Three (3) 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 2.2 of the specialist report, all habitats within the assessment area of the proposed project were allocated a sensitivity category.</p> <p>Summary of habitat types delineated within the project area</p> <table border="1"> <thead> <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> </thead> <tbody> <tr> <td>Degraded Thornveld</td> <td>Medium</td> <td>High</td> <td>Medium</td> <td>Medium</td> <td>Medium</td> </tr> <tr> <td>Wetlands</td> <td>Medium</td> <td>Medium</td> <td>Medium</td> <td>Low</td> <td>Medium</td> </tr> <tr> <td>Disturbed Thornveld</td> <td>Medium</td> <td>Low</td> <td>Low</td> <td>Medium</td> <td>Low</td> </tr> <tr> <td>Transformed</td> <td>Very Low</td> <td>Very Low</td> <td>Very Low</td> <td>Low</td> <td>Very Low</td> </tr> </tbody> </table> <p>An Ecology Impact Assessment has been undertaken for the Solar Energy Facility and is included as Appendix D of the EIA Report.</p>	Habitat (Area)	Conservation Importance	Functional Integrity	Biodiversity Importance	Receptor Resilience	Site Ecological Importance	Degraded Thornveld	Medium	High	Medium	Medium	Medium	Wetlands	Medium	Medium	Medium	Low	Medium	Disturbed Thornveld	Medium	Low	Low	Medium	Low	Transformed	Very Low	Very Low	Very Low	Low	Very Low
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Avian	Low	<p>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. The Water resources were given a high sensitivity based on the importance of these areas for the species in the area not only as a water source but also as habitat for the water birds. The level of disturbance found in the Degraded Marikana Thornveld</p>																														

Environmental Theme/Specialist Assessment	Sensitivity Rating as per the Screening Tool (relating to the need for the study)	Verification of Site Sensitivity
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combined with the mostly generalist species found here led to the Low rating.

SEI Summary of habitat types delineated within field assessment area of project area

Habitat	Conservation Importance	Functional Integrity	Biodiversity Importance	Receptor Resilience	Site Ecological Importance
Water Resources	<p>High</p> <p>The water resources (i.e., river and wetland) are rated as CR based on the SAIIAE dataset.</p>	<p>High</p> <p>The CR wetland found on site is approximately 60Ha. The size combined with the somewhat disturbed nature this habitat it was given a High functional integrity.</p>	<p>High</p>	<p>Medium</p> <p>Taking into account the current vegetation growth and state, the area will recover slowly, and it will take more than 10 years to reach the same state. If the vegetation growth in the area is altered, it will disturb the avifauna diversity as well which will take long to return to its pre disturbance state.</p>	<p>High</p>
Degraded Grassland	<p>Medium</p> <p>The VU listed Lanner Falcon were observed in this area</p>	<p>Medium</p> <p>The area does still function as ecological corridor especially between the water resource areas</p>	<p>Medium</p>	<p>High</p> <p>The area has been altered from its original state mainly by over grazing, therefore the flora species composition is low. As the area</p>	<p>Low</p>

Environmental Theme/Specialist Assessment	Sensitivity Rating as per the Screening Tool (relating to the need for the study)	Verification of Site Sensitivity					
						does not provide a large number of food sources especially for granivorous species the receptor resilience is rated as high.	
		Secondary Grassland	Medium The VU listed Lanner Falcon were observed in this area	Medium The area does still function as an ecological corridor especially between the water resource areas.	Medium	High his habitat has also been altered by overgrazing, however the flora species composition in this area is more diverse. As the habitat is mainly supporting graminoid species and therefore granivorous species if the area recovers the granivores will return	Low
		Transformed	Very Low Unlikely to support any SCCs and no natural habitat remains in these areas anymore.	Very Low Several major current negative ecological impacts found in the area and no ecological connectivity offered.	Very Low	Very High The flora species composition surrounding the buildings for example is mainly garden species and therefore will support mainly generalist more adaptable	Very Low

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		<p style="text-align: right;">species</p> <p>An Avifauna Impact Assessment has been undertaken for the Solar Energy Facility and included as Appendix E of the EIA Report. The assessment has been undertaken in accordance with the requirements of the BirdLife SA Best Practice Guidelines for Solar Developments.</p>																														
Civil Aviation (Solar PV)	Low	<p>A Compliance Statement is included in the Draft BA Report. The sensitivity has been verified to be low due to the long distance in between the proposed PV facility and the airfield. Further assessment of the potential impacts is not required.</p> <p>The Civil Aviation Authority (CAA) and Air Traffic Navigation Services (ATNS) have been consulted throughout the EIA process to obtain input and details of any requirements for further studies. No objections to the project have been received.</p>																														
Defence	Low	The project site is not located within close proximity of any military base.																														
RFI	Medium	<p>The screening report indicates that there is a telecommunication facility within 1km of the proposed development, but this has not been identified as being of significant sensitivity during the assessment. No comments or objections in this regard have been received during the S&EIA process.</p> <p>A Compliance Statement will be included in the Final BA Report.</p>																														
Plant Species	Medium	<p>The completion of the terrestrial biodiversity assessment found that the Degraded Thornveld habitat that overlaps with the screening report is of medium sensitivity and thus do not corroborate the screening report in that regard.</p> <p>Three (3) 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 2.2 of the specialist report, all habitats within the assessment area of the proposed project were allocated a sensitivity category.</p> <p>Table 1: Summary of habitat types delineated within the project area</p> <table border="1"> <thead> <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> </thead> <tbody> <tr> <td>Degraded Thornveld</td> <td>Medium</td> <td>High</td> <td>Medium</td> <td>Medium</td> <td>Medium</td> </tr> <tr> <td>Wetlands</td> <td>Medium</td> <td>Medium</td> <td>Medium</td> <td>Low</td> <td>Medium</td> </tr> <tr> <td>Disturbed Thornveld</td> <td>Medium</td> <td>Low</td> <td>Low</td> <td>Medium</td> <td>Low</td> </tr> <tr> <td>Transformed</td> <td>Very Low</td> <td>Very Low</td> <td>Very Low</td> <td>Low</td> <td>Very Low</td> </tr> </tbody> </table> <p>A Terrestrial Ecology Impact Assessment (including flora) has been undertaken for the SRPM Solar Facility and is included as Appendix D of the EIA Report.</p>	Habitat (Area)	Conservation Importance	Functional Integrity	Biodiversity Importance	Receptor Resilience	Site Ecological Importance	Degraded Thornveld	Medium	High	Medium	Medium	Medium	Wetlands	Medium	Medium	Medium	Low	Medium	Disturbed Thornveld	Medium	Low	Low	Medium	Low	Transformed	Very Low	Very Low	Very Low	Low	Very Low
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Socio-Economic Assessment	The screening report does not indicate a rating for this theme.	A Socio-Economic Impact Assessment has been undertaken and is included in the EIA Report as Appendix I .

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

- » Terrestrial Ecology Impact Assessment
- » Civil Aviation Compliance Statement
- » Avifauna Impact Assessment
- » Aquatic Impact Assessment
- » Heritage Screener
- » Soils and Agricultural Potential
- » 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).