

6 June 2026

Attention: AEP Bloemsmond Solar 2 (Pty) Ltd

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To whom it may concern:

AVIFAUNA SPECIALIST INPUT FOR THE PART 2 AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION (EA) FOR THE PROPOSED DEVELOPMENT OF THE AEP BLOEMSMOND SOLAR PV 2 (Pty) Ltd, NEAR UPINGTON, NORTHERN CAPE.

1. Project Background

AEP Bloemsmond Solar 2 (Pty) Ltd is the proponent for the proposed Bloemsmond Solar Energy 2 Facility. The project is located on the farm Bloemsmond 455, portions 5 and 14, situated southwest of Upington, within the ZF Mgcawu District Municipality, in the Northern Cape Province, South Africa. The proposed solar development is planned to cover approximately 225 hectares to meet the required capacity. The facility is designed for a contracted generation capacity of 100 megawatts (MW).

The Environmental Authorisation (EA) for the facility was issued on the 26 April 2016, DEA Reference 14/12/16/3/3/2/816, and has subsequently been amended since:

- 14/12/16/3/3/2/816/AM1 – 13 March 2020 – Increase in facility capacity from 75MW to 100MW
- 14/12/16/3/3/2/816/AM2 – 10 February 2021 – Inclusion of a BESS
- facility in the project description and an extension to the EA validity to 26 April 2026
- 14/12/16/3/3/2/816/AM3 – 25 March 2021 – Correction to 14/12/16/3/3/2/816/AM2

For the purpose of this report, reference to the EA includes the original EA and all amendments thereto.

Condition 7 of the EA states that:

“This activity must commence within a period of ten (10) years from the date of issue of the authorisation (i.e. the EA lapses on 26 April 2026). If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken.”

An application to extend the validity of the EA was submitted on 16 April 2026. The competent authority acknowledged receipt of the application on 24 April 2026 and confirmed that the application falls within the ambit of amendments to be applied for in terms of Part 1 of Chapter 5 of the Environmental Impact Assessment Regulations, 2014, as amended.

Further to the acknowledgement, the competent authority requested additional information in support of this application, including a review of all specialist studies undertaken, a detailed assessment, including a site verification report providing an indication of the status of the receiving environment (by the relative specialist, if applicable) and confirmation of validity of the impact ratings and mitigation measures recommended previously.

2. Terms of Reference

The Biodiversity Company was appointed to provide specialist inputs in terms of avifauna for this Amendment Application. This project area was assessed during the Afzelia (2015) studies and confirmed through a specialist site visit undertaken in May 2026. The focus of this study was therefore to confirm or dispute the findings of the previous studies. Therefore, the Terms of Reference (ToR) for this assessment must consider the following:

- Confirmation of the status of the environment compared to that at the time of the original assessments undertaken in 2015 by Afzelia, as well as the subsequent specialist impact statement provided in the BESS EA amendment application.
- An indication as to whether the impact rating as provided in the previous assessments remains valid; if the mitigation measures provided in the initial assessments are still applicable; or if there are any new mitigation measures which need to be included in the EA, should the request to extend the commencement period be granted by the DFFE.
- An indication as to whether there are any new assessments/guidelines which are now relevant to the authorised development which were not undertaken as part of the initial assessment and must be taken into consideration and addressed in the report.
- A description and an assessment of any changes to the biophysical environment that have occurred since the EA was issued.
- A description and an assessment of the surrounding environment, in relation to new developments or changes in land use which might impact the authorised project, the assessment must consider the following:
 - Similar developments within a 30 km radius; and
 - Identified cumulative impacts, and where possible, the size of the identified impact must be quantified and indicated, i.e., hectares of cumulatively transformed land.

3. Assumptions and Limitations

The field survey sought to determine site characteristics and conditions to determine any changes from the baseline conditions and previous reports, supplemented by satellite imagery.

Moreover, the field survey was conducted during a single dry season survey, limiting the presence of certain avifauna species and temporal changes. However, the field survey is sufficient for the nature of this assessment.

4. Project Description

The Project Area of Influence (PAOI) for the original Bloemsmond Solar PV 1 assessment is shown in Figure 1 below.

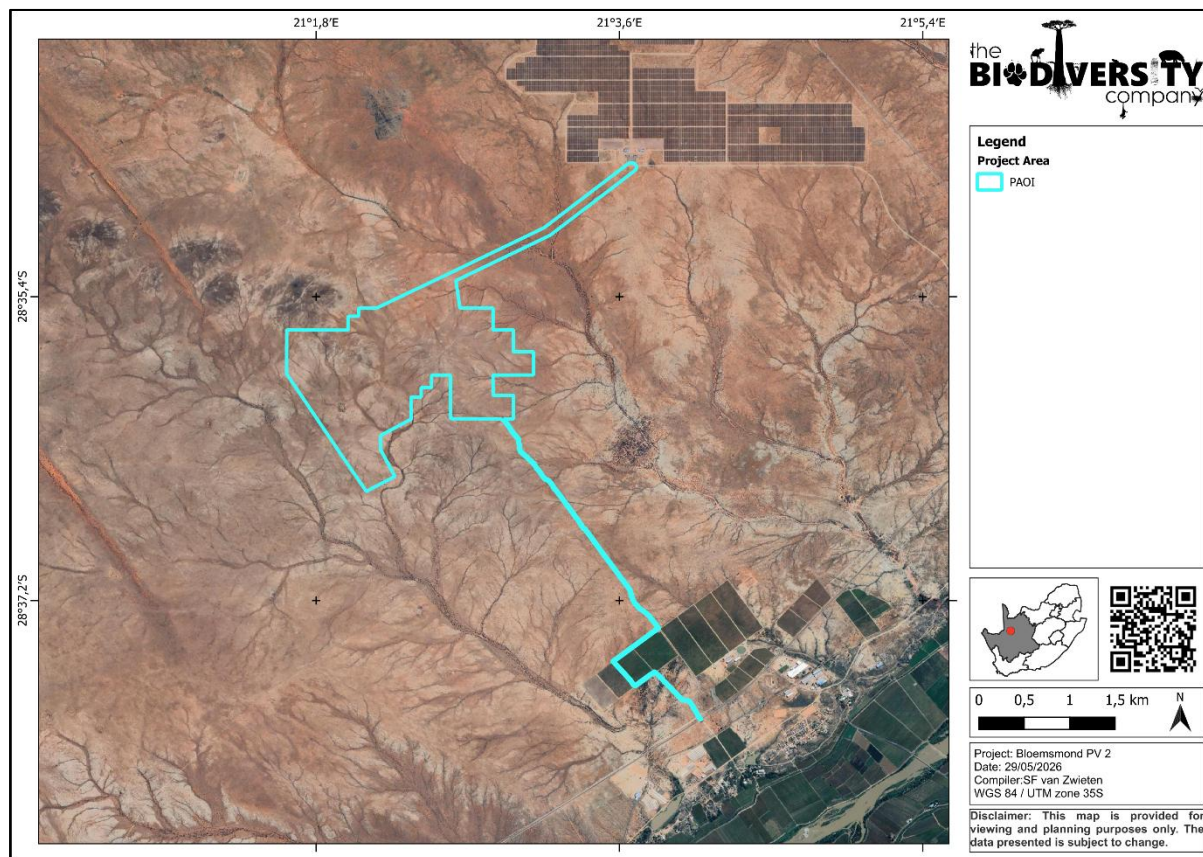


Figure 1 **The Project Area of Influence of Bloemsmond PV2**

The PAOI project description and layout remain as authorised in the EA and no changes to the scope are proposed as part of this EA Amendment process (Figure 2):

- Solar Technology: Several arrays of PV solar panels;
- Mounting structures to support the PV panels;
- On-site inverters to step up the power and a substation to facilitate the connection between the Solar Facility and the Eskom electricity grid;
- A new 132kV power line between the on-site substation and the Dyasons Klip Substation (located on the farm Dyasons Klip RE/454);
- Cabling between the project components, to be laid underground where practical;
- Offices and workshop areas for maintenance and storage;
- Temporary laydown areas;
- Internal access roads and fencing around the development area; and
- A Battery Energy Storage System of up to 500MWh.

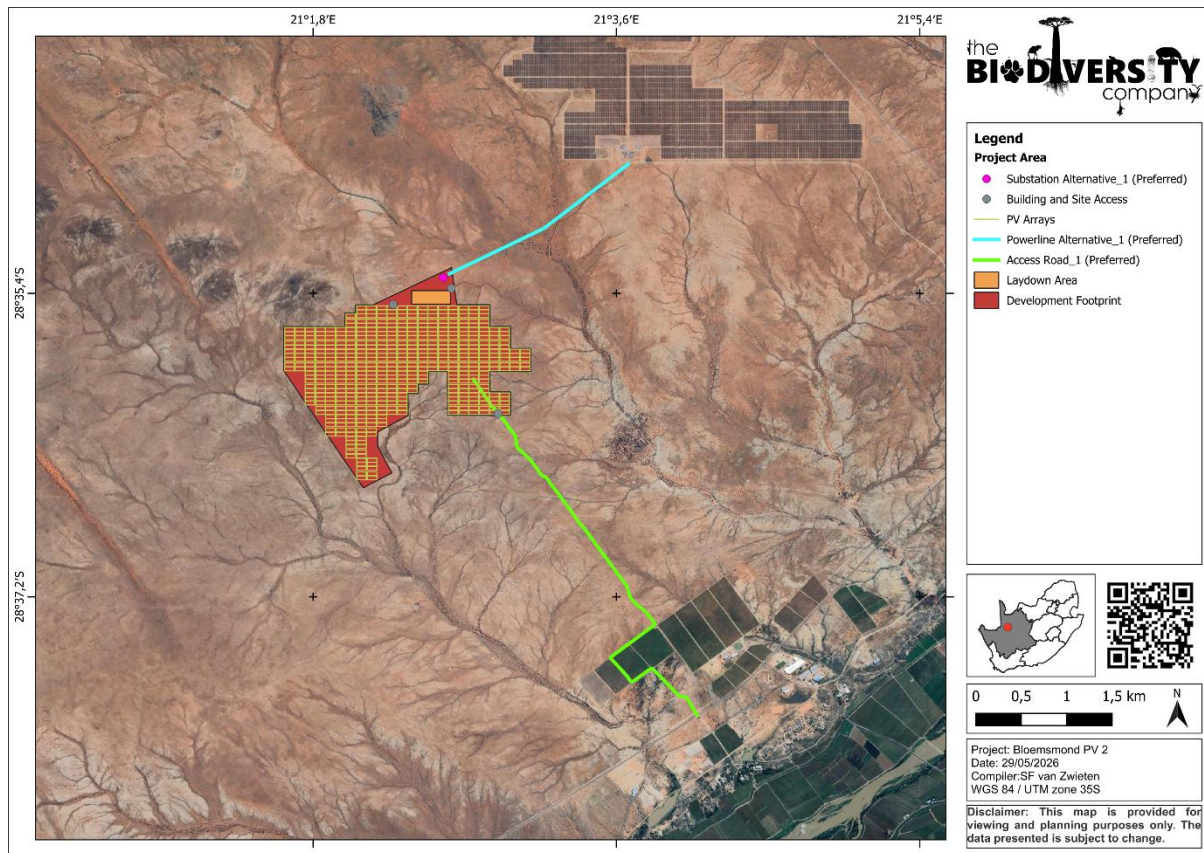


Figure 2 **Layout of Bloemsmond PV2 site**

5. Site Baseline and Sensitivity (2015)

The following is summarised for the avifauna theme taken from the 2015 Afzelia report:

- 1.1. In the assessment, the dominant avifaunal habitat identified on site was described as sparsely vegetated rocky soils with grass patches and was named Bushmanland Arid Grassland. This habitat would attract mostly ground-dwelling avian species, with many of these being nomadic when food and water are available. These birds would include the Kori Bustard and Ludwig's Bustard. The main impacts that would be caused by the development associated with this habitat include habitat loss, disturbance and collisions with powerlines. This habitat was assigned a low sensitivity due to its homogenous nature.
- 1.2. The rocky-hill slopes and elevated platforms were assigned a medium sensitivity due to the uniqueness of the habitat and its ability to provide unique breeding and foraging habitats to some local avifauna species, including Lanner Falcons.
- 1.3. The ephemeral drainage areas were assigned a high sensitivity as these areas are ecologically significant for the avifaunal community and attracts a high number of species, therefore important to conserve these areas. These areas only hold water periodically during good rains but can provide suitable foraging areas for important bird species including Kori Bustard and Secretarybirds. The main impacts the development can impose on this habitat includes habitat loss, disturbance and collisions with powerlines.

- 1.4. Finally, artificial habitats were also identified in the project area, which comprises existing overhead powerlines and water reservoirs. These areas can still be used by the local avifaunal community, but these habitats themselves provide risks to the local avifauna, including collisions and drowning.
- 1.5. The data from the 2015 Bloemsmond PV 2 report did not report avifaunal Species of Conservation Concern (SCC). However, at the time, this report predates the implementation of the 2015 Eskom Red Data Book. From the observed list of avifauna species, the Karoo Korhaan (*Eupodotis vigorsii*) is now considered a SCC.

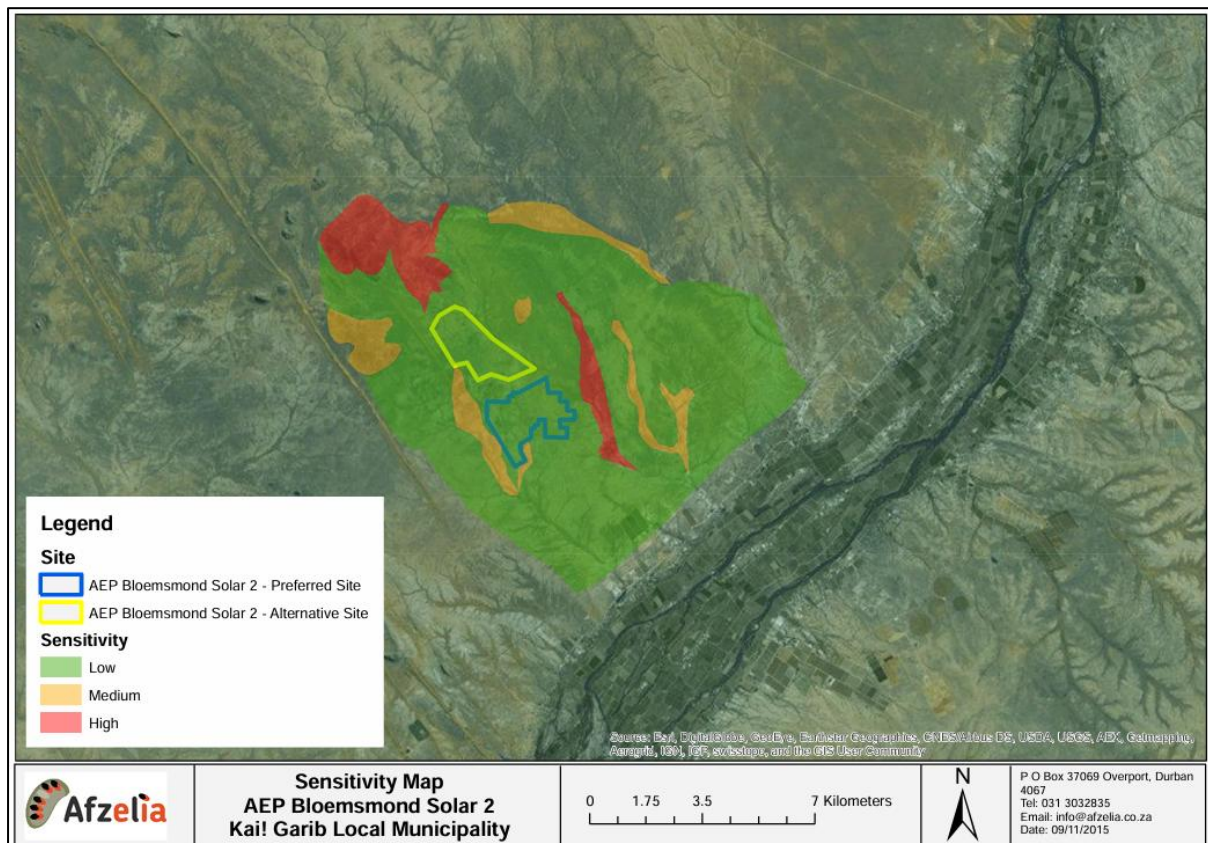


Figure 3 Avifaunal sensitivity of Bloemsmond PV 2 as described by Afzelia (2015)

6. Avifaunal Ecological Findings (2026)

A specialist from The Biodiversity Company (TBC) undertook a re-assessment of the potential environmental impacts associated with the PAOI on the 25th and 26th of May 2026, which constitutes a dry season survey.

Three main habitats were identified based on aerial imagery, previous reports, and field coverage and data collection. These habitats include Arid Grassland, Modified (Agriculture, existing roads and infrastructure), and Freshwater Features. The pictures of the habitats were taken by the TBC specialist during the site visit (Figure 4).



Figure 4 Example of the habitat represented within the PAOI considered for this amendment.

During the field work, forty-six (46) avifaunal species were recorded indicating somewhat low species diversity. Of these, three (3) SCCs were observed and based off SABAP2 data for the area, an additional fourteen (14) are likely to occur within the PAOI. The likelihood of the SCCs occurring within the site are presented in Table 1.

Table 1 Threatened avifauna species that are expected to occur within the PAOI. CR = Critically Endangered, EN = Endangered, LC = Least Concern, NT = Near Threatened, VU = Vulnerable

Common Name	Scientific Name	Regional*	Global*	Screening tool	Likelihood of occurrence
African Darter	<i>Anhinga rufa</i>	NT	LC	-	Low
Black Harrier	<i>Circus maurus</i>	EN	EN	-	Confirmed
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	NT	LC	-	Low
Black-winged Kite	<i>Elanus caeruleus</i>	NT	LC	-	Confirmed
Hamerkop	<i>Scopus umbretta</i>	NT	LC	-	Moderate
Karoo Korhaan	<i>Eupodotis vigorsii</i>	NT	LC	-	Confirmed
Kori Bustard	<i>Ardeotis kori</i>	NT	NT	-	Moderate
Lanner Falcon	<i>Falco biarmicus</i>	NT	LC	High	High
Ludwig's Bustard	<i>Neotis ludwigii</i>	EN	EN	Medium	Moderate

Martial Eagle	<i>Polemaetus bellicosus</i>	EN	EN	-	High
Pallid Harrier	<i>Circus macrourus</i>	NA	NT	-	Low
Red-billed Teal	<i>Anas erythrorhyncha</i>	NT	LC	-	Low
Secretarybird	<i>Sagittarius serpentarius</i>	VU	EN	-	Moderate
White-backed Vulture	<i>Gyps africanus</i>	CR	CR	-	Low
Yellow-billed Duck	<i>Anas undulata</i>	NT	LC	-	Low
Yellow-billed Egret	<i>Ardea brachyrhyncha</i>	NT	LC	-	Low
Yellow-billed Stork	<i>Mycteria ibis</i>	VU	LC	-	Low

*(BLSA 2025), + (IUCN 2025)

The screening tool report generated for the PAOI provided the following results:

- **Animal Species Theme - High.** This is due to the possible presence of one (1) high sensitivity avifauna SCC, Lanner Falcon (*Falco biarmicus*), and one (1) medium sensitivity avifauna SCC, Ludwig's Bustard (*Neotis ludwigii*) (Figure 5).

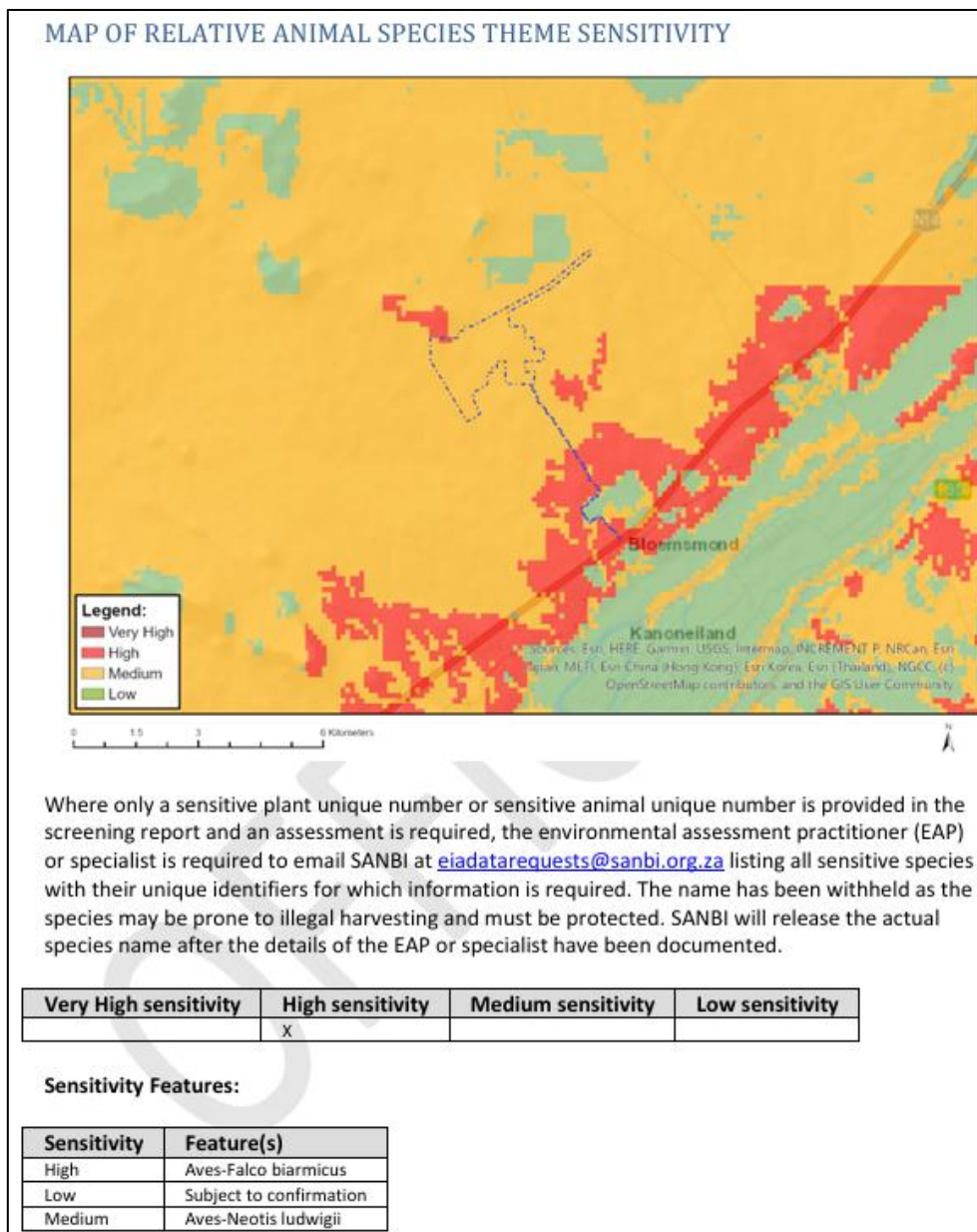


Figure 5 *Figure indicating the relative Animal Sensitivity Theme Sensitivity as identified by the Environmental Screening Tool for Bloemsmond PV2*

7. Impact Assessment

The initial study conducted by Afzelia (2015) included an impact assessment for the construction, and operational phases for the Bloemsmond PV2 project area. The summary of their findings is provided in Table 2.

Table 2 *Summary table of the impacts associated with the development of the project (Afzelia, 2015).*

Impacts	Without Mitigation	With Mitigation
Impacts Associated with PV Facility		

Habitat Destruction	High Negative	Medium Negative
Disturbance during Construction Phase	Medium Negative	Medium Negative
Disturbance during Operational Phase	Medium Negative	Low Negative
Collisions with solar panel infrastructure	High Negative	Low Negative
Use of solar infrastructure by avian species	Medium Negative	Medium Negative
Impacts Associated with Substation and Powerline		
Habitat Destruction	Medium Negative	Medium Negative
Disturbance during Construction Phase	Medium Negative	Low Negative
Disturbance during Operational Phase	Medium Negative	Low Negative
Electrocution of birds on substations/switching infrastructure	Low Negative	Low Negative
Electrocution of birds on overhead power line	Medium Negative	Low Negative
Collisions with the power line	Medium Negative	Medium Negative

Given that the amendment application seeks only to extend the validity period of the existing EA, the principal issue is whether the original impact ratings and mitigation measures remain valid. Based on the available information currently reviewed, it is considered that:

- The nature of the activity remains unchanged;
- The receiving environment, insofar as presently known, does not appear to have changed so materially as to invalidate the original findings;
- The identified avifaunal impacts remain the same in nature and significance pathway; and
- No new impact has been identified that would require the amendment application to be treated as a fundamentally different development proposal.

It is therefore reasonable to conclude, for purposes of this draft, that the original impact assessment findings remain substantially valid, subject to final confirmation by the environmental assessment practitioner.

8. Cumulative Impacts

The original avifaunal assessment for Bloemsmond PV 2 recognised that cumulative impacts could arise in the broader Upington region as a result of multiple renewable energy developments occurring within the same landscape. Although the site itself was not identified as being of particularly high avifaunal importance, the specialist noted that the combined effect of multiple solar facilities and associated powerline infrastructure could, over time, contribute to cumulative habitat loss and fragmentation, increased disturbance, and increased collision and electrocution risk for avifauna.

No explicit cumulative impact methodology or quantitative rating approach was presented in the original avifaunal report (Afzelia, 2015). However, the report did identify the presence of other renewable energy developments in the surrounding region at the time, thereby acknowledging a cumulative impact pathway. In the absence of a detailed original cumulative methodology, the current assessment has

compared the regional development context reflected in the original report with the present development context within the broader surrounding landscape.

Figure 6 illustrates the similar developments identified in the region of the proposed project in 2015, as reflected in the original avifaunal assessment. Figure 7 illustrates the currently known similar developments within 30 km of the Bloemsmond PV 2 PAOI. A comparison of these two figures indicates that the cumulative development context in the broader area has intensified since the original assessment, with a greater concentration of renewable energy projects and associated infrastructure now forming part of the receiving environment.

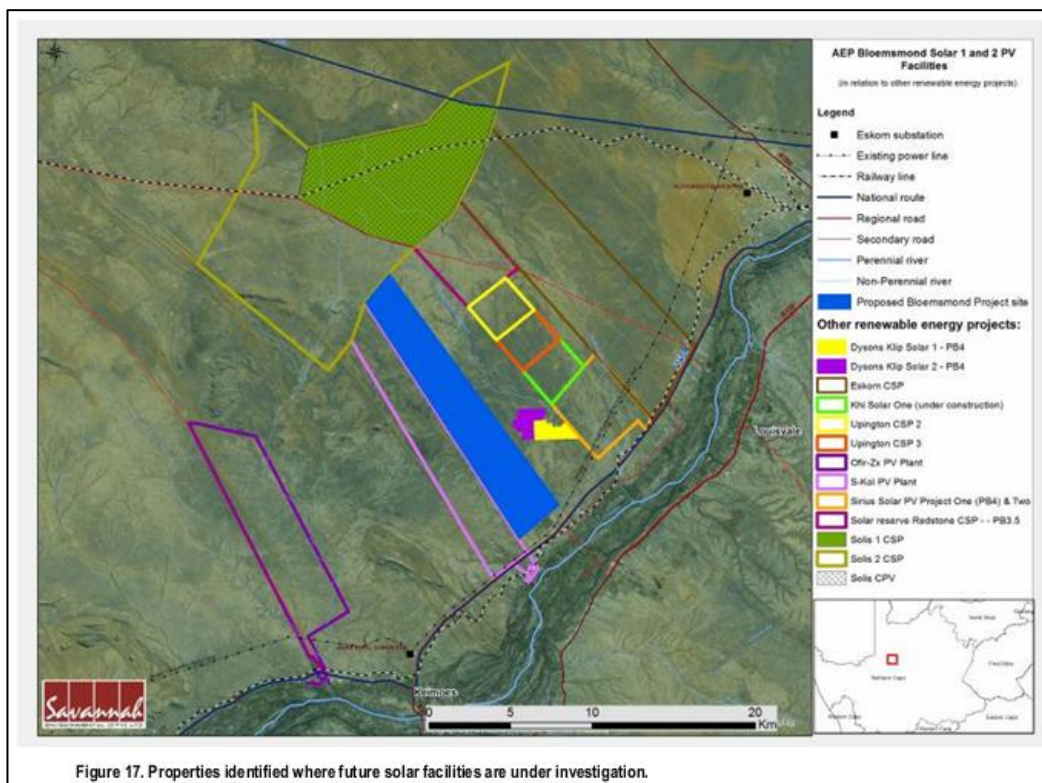


Figure 6 *Map illustrating the similar developments within the region of the proposed to the Project in 2015*

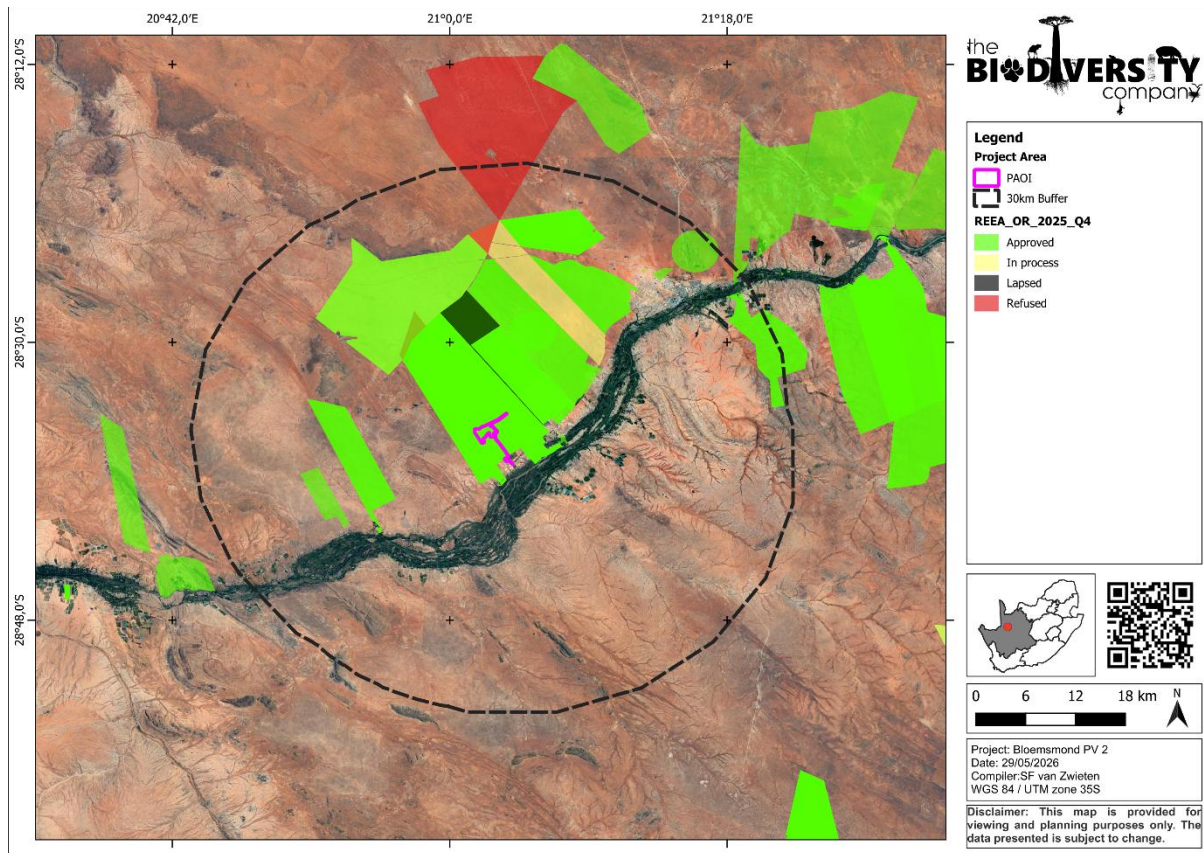


Figure 7 *Map illustrating the similar developments within the region of the proposed Bloemsmond PV 2 in 30 km surrounding the PAOI*

This change in the surrounding development context is important because cumulative impacts are not driven only by the footprint of the Bloemsmond PV 2 project in isolation, but by the way in which that footprint interacts with other existing and foreseeable developments in the same landscape. While the direct site-specific loss of habitat and local disruption of Species of Conservation Concern (SCC) home ranges remain relatively limited, the cumulative effect of multiple developments may result in broader ecological change at a regional scale.

This interpretation is reflected in Table 3, which distinguishes between the impact of the project in isolation and the impact in terms of its cumulative effect. In isolation, the impact associated with the loss of habitat and disruption of SCC home ranges was assessed as long-term, local, and of low significance, reflecting that the direct project footprint would affect a relatively limited area and that ecosystem structure and function would remain largely unchanged at the local scale. Under the cumulative scenario, however, the same impact increases to a moderate significance, as the duration becomes effectively permanent, the spatial scale increases to the regional level, and the severity increases due to the combined effect of multiple developments on habitat availability, ecological function, and species movement patterns.

In this regard, the cumulative assessment indicates that the project in isolation is likely to result in a low-significance impact on habitat and SCC home ranges within the local site context. The cumulative effect, when considered together with other renewable energy developments in the surrounding area, is of moderate significance due to the broader and longer-term effect on the receiving environment.

Table 3 *Cumulative impact assessment of the project area*

Impact	Project in Isolation					
	Duration of Impact	Spatial Scope	Severity of Impact	Sensitivity of Receiving Environment	Probability of Impact	Significance
Loss of habitat, and disruption of SCC home ranges	4	3	2	2	3	
	Life of operation or less than 20 years: Long Term	Local area/ within 1 km of the site boundary	Small / ecosystem structure and function largely unchanged	Ecology with limited sensitivity/importance	Likely	Low
Impact	Cumulative Effect					
	Duration of Impact	Spatial Scope	Severity of Impact	Sensitivity of Receiving Environment	Probability of Impact	Significance
Loss of habitat, and disruption of SCC home ranges	5	4	3	3	3	
	Permanent	Regional within 5 km of the site boundary	Significant / ecosystem structure and function moderately altered	Ecology moderately sensitive/ /important	Likely	Moderate

The increase in significance from low to moderate is therefore not due to a change in the inherent impact of Bloemsmond PV 2 alone, but rather due to the increased development pressure within the broader landscape since the original assessment. This supports the conclusion that cumulative impacts remain a relevant consideration for the amendment application, particularly from an avifaunal perspective.

Notwithstanding the above, it is important to note that the current amendment application relates only to the extension of the validity period of the existing Environmental Authorisation. The amendment does not propose any increase in the authorised footprint, generation capacity, infrastructure extent, or operational intensity of the project. As such, the amendment does not introduce a new cumulative impact pathway, nor does it increase the project's individual contribution beyond what was originally assessed. Rather, it confirms that the project remains part of a broader regional renewable energy landscape in which cumulative ecological effects must continue to be acknowledged and managed.

Overall, the cumulative impact associated with habitat loss and disruption of SCC home ranges is considered to remain moderate at the regional scale when viewed in the context of other surrounding developments. However, this cumulative impact is not materially altered by the proposed amendment itself, as the amendment is administrative in nature and limited to the extension of the EA validity period.

9. Mitigation Measures

The mitigations that have been proposed in the original assessment are still deemed to be sufficient, as discussed in the report. However, the assessment was conducted prior to the formation of the BirdLife South Africa's best practice guidelines (2017). These guidelines recommend post-construction monitoring for all "Regime 2 and 3" PV projects, which this project would fall under. As such, following best practice guidelines it is recommended that post-construction monitoring be conducted in accordance with BirdLife South Africa best practice guidelines for solar energy facilities. If monitoring results indicate excessive bird fatalities, then adaptive mitigations should be implemented. Before implementation, these should be discussed with the avifaunal specialist and ECO and could include the retrofitting/incorporation of additional visual cues/diverters to existing PV panels/infrastructure. Post construction monitoring must be performed quarterly for at least one year following the construction

phase, following this the results of the monitoring must be used to inform whether another year of monitoring is necessary, in consultation with an avifauna specialist.

10. Summary of Findings

The initial avifaunal study was conducted in 2015 by Afzelia for the Bloemsmond PV 2. The table below illustrates the comparisons between the original (or initial) assessments and current assessment for this amendment process.

Table 4 *Table depicting the differences between the Afzelia 2015 findings, and the current amendment findings*

Aspect	Comments and Recommendations	
	Previous Study (Afzelia, 2015)	Current study
Baseline	Findings: The site was described as comprising largely homogenous avifaunal habitat, dominated by sparsely vegetated rocky soils with grass patches, referred to as Bushmanland Arid Grassland. Artificial habitats such as existing powerlines and water reservoirs were also noted. The broader habitat was considered suitable mainly for ground-dwelling and nomadic avifaunal species.	Findings: The 2026 site verification confirmed that the PAOI remains largely homogenous and is represented by arid grassland, modified habitats associated with existing infrastructure and access, and freshwater features. The habitat character is therefore broadly consistent with the baseline described by Afzelia (2015).
Sensitivity	Findings: Afzelia (2015) assigned a low sensitivity to the dominant Bushmanland Arid Grassland habitat due to its homogenous nature. Rocky hill slopes and elevated platforms were assigned medium sensitivity due to their value for breeding and foraging by certain species, while ephemeral drainage areas were assigned high sensitivity because of their ecological importance to avifauna. Artificial habitats were also recognised as presenting risks to birds.	Findings: The sensitivity of the habitats partially aligns with the Afzelia 2015 findings. Water Resources are still classified as high sensitivity habitats. However, the Arid Grassland habitat is deemed a medium sensitivity habitat, and modified habitats (access roads and other infrastructure) are classified as very low.
Species of Conservation Concern (SCC)	Findings: The 2015 report did not explicitly identify avifaunal SCCs in the project area, although the species list included species which are now recognised as SCCs under updated conservation listings.	Findings: During the May 2026 site visit, 46 avifaunal species were recorded, of which 3 SCCs were observed. Based on SABAP2 data, a further 14 SCCs are considered likely to occur within the PAOI. The Karoo Korhaan, which was recorded in the original assessment, is now recognised as an SCC.
Impact Assessment	Afzelia (2015) assessed impacts associated with the PV facility, substation and powerline. These included habitat destruction, disturbance, collisions with solar panel infrastructure, use of solar infrastructure by avian species, electrocution on substations and powerlines, and collisions with the powerline. With mitigation, impacts ranged from low negative to medium negative.	The current amendment review found that the receiving environment has not changed so materially as to invalidate the original findings. The identified avifaunal impacts remain the same in nature and significance pathway, and no new impact has been identified that would require the amendment application to be treated as a fundamentally different development proposal.
Cumulative Impacts	The original report acknowledged that cumulative impacts could arise in the broader Upington region due to multiple renewable energy developments occurring within the same landscape. Although no explicit cumulative methodology was provided, the report recognised cumulative habitat loss,	The current assessment confirms that cumulative impacts remain relevant. Comparison of the 2015 regional development context with the current 30 km development context indicates that the surrounding renewable energy landscape has intensified. Based on the current assessment, the cumulative impact

Aspect	Comments and Recommendations	
	Previous Study (Afzelia, 2015)	Current study
	fragmentation, disturbance, and increased collision and electrocution risk as relevant concerns.	associated with habitat loss and disruption of SCC home ranges is rated as moderate at the regional scale.
Mitigation Measures	The original assessment recommended mitigation to reduce impacts associated with habitat destruction, disturbance, collisions and electrocution.	No additional mitigation measures are proposed as part of this amendment, as the original mitigation remains applicable and sufficient for the authorised project.
Conclusion on Validity of Original Findings	The original study concluded that the avifaunal impacts associated with the development would be acceptable subject to mitigation and appropriate management.	The 2026 amendment findings support the conclusion that the original Afzelia (2015) assessment remains substantially valid for the purposes of extending the validity period of the EA.

11. Conclusion

Based on a review of the original Afzelia (2015) avifaunal assessment and the findings of the May 2026 site verification, the avifaunal receiving environment associated with Bloemsmond PV 2 has not changed to such an extent that the original findings are no longer applicable. The site remains largely representative of the homogenous arid habitat originally described, with the key avifaunal sensitivities still associated with freshwater features and drainage areas. Although the current assessment recorded additional Species of Conservation Concern and confirms that the broader cumulative development context has intensified since 2015, these factors do not materially alter the nature of the impacts previously identified for the authorised development.

As the current amendment application relates only to the extension of the validity period of the existing Environmental Authorisation, and no changes to the authorised layout, footprint or infrastructure are proposed, the original impact ratings and mitigation measures contained in Afzelia (2015) are considered to remain substantially valid. It is therefore the opinion of the specialist that the original avifaunal assessment remains suitable to inform the amendment application, and that no avifaunal objection is raised to the proposed extension of the EA validity period by a further 10 years.

Kind regards,

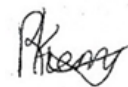


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