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AMENDMENT LETTER

AVIFAUNAL SPECIALIST INPUT: PROPOSED AMENDMENTS TO THE EA AND FINAL LAYOUT OF THE BEAUFORT WEST SOLAR PV ENERGY FACILITY (SEF) NEAR BEAUFORT WEST IN THE WESTERN CAPE PROVINCE

1. Introduction & Project Description

The proposed development site is located on privately owned farmland, approximately 12.5km south-east of the town of Beaufort West, within the Beaufort West Local Municipality, in the Central Karoo District Municipality, Western Cape Province.

The site is approximately 3763 ha in extent. The proposed Solar Photovoltaic (PV) Energy Facility (SEF) will generate up to 415MW, and include the following components:

- PV fields (arrays) comprising multiple PV modules. The modules will be either crystalline silicon or thin film technology. The modules will be mounted on a fixed/single or double axis tracking technology.
- Each PV module will be approximately 2.4 m long and 1.3 m wide and mounted on supporting structures above ground. At this stage it is anticipated that the PV modules will be mono- or bifacial modules.
- A 33/132kV on-site substation (facility substation) (stepdown from 132kV to 32kV) occupying an area of up to approximately 1 ha. This will be adjacent to the Eskom on-site substation (covered under the authorization for the grid connection OHL).
- Internal 33kV lines connecting the substations to the facilities (either underground/above ground).
- A Battery Energy Storage System (BESS) on an area of approximately 4 ha next to the onsite 33/132kV substation. The BESS containers will be delivered to site.
- Auxiliary/ Operations & Maintenance (O&M) buildings of approximately 1 ha. The functions within these buildings include (but are not limited to) office/administration, control centre, ablution, workshops, storage areas and security centre.
- The O&M building, substation construction camp and the laydown area (up to 12 ha) will be located together as per attached layout.
- Site and internal access roads, up to 6m wide, will provide access to the PV arrays. Existing site roads will be used wherever possible, although new site roads will be constructed where necessary.
- A new access road, 8 m wide, entering the site from the east is proposed. This road will however be subject to a separate BA process and is not included in the current amendment.
- Galvanized palisade perimeter fencing with a height of at least 2.1 m, is proposed around each PV cluster, with security access control, and security lighting.

- Associated infrastructure includes a lightning protection system, telecommunication infrastructure, diesel storage facilities (less than 80 m³) and a batching plant (if required).
- Abstraction of water will be from existing or new boreholes if required. The anticipated volume required is 220kL per day.

The previously authorized (via a separate BAR process – DFFE reference no 14/12116/3/3/1/2672) overhead grid connection from the proposed development to the Eskom Droërivier Main Transmission Station, is located approximately 10 km north-west of the site. Included in this is the on-site Eskom switching substation, located adjacent to the Independent Power Producer (IPP) substation, which forms part of the SEF BA.

➤ **Avifauna**

According to the original Avifaunal Impact Assessment (AfriAvian Environmental, formerly Chris van Rooyen Consulting, 2022) it is estimated that a total of 254 bird species could potentially occur in the broader area where the authorised Project is to be located. Of these, 122 species are classified as priority species for solar developments.

The entire Project Site is a high sensitivity zone, from an avifaunal perspective, due to the recorded and potential presence of several species of conservation concern (SCC) including Blue Crane, Karoo Korhaan, Lanner Falcon, Kori Bustard, Ludwig's Bustard, Martial Eagle, Secretarybird, and Verreaux's Eagle which could utilise the whole Project Site and surrounds for foraging. However, these species do not require specific avoidance measures at this stage because there is still adequate habitat available outside the Project Site.

The purpose of this Avifaunal Specialist Comment is to assess if the proposed amended final layout of the SEF has taken all avifaunal sensitivities into account, and to investigate and determine any potential implications of the proposed amendments to the project description and site layout with respect to avifauna, if any.

2. Site Locality

The proposed Beaufort West Solar PV Energy Facility is located on privately owned farmland, approximately 12.5km south-east of the town of Beaufort West, within the Beaufort West Local Municipality, in the Central Karoo District Municipality, Western Cape Province (**Figure 1**).

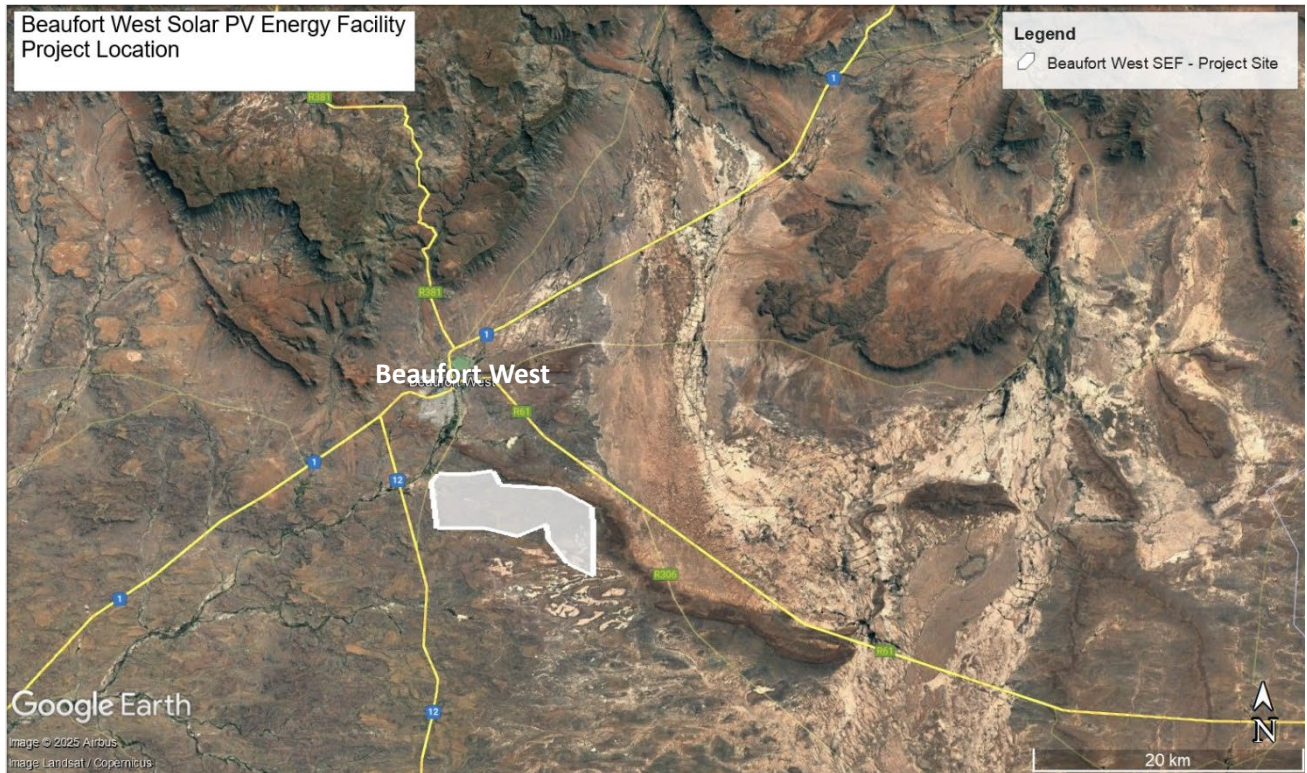


Figure 1: The location of the Beaufort West Solar PV Energy Facility (SEF) Project.

3. Current Approved Layout

The current authorised SEF layout is displayed in **Figure 2**. The layout has subsequently been refined, requiring an amendment to the approved Layout Plan and Project Description. The main changes applied for in this Part 2 Amendment relate to the project layout and footprint (remaining within the project site that was previously assessed). The project components also remain largely unchanged, apart from their configurations / locations and some increases in footprint area. A new access road is proposed to enter the site from the east (**to be assessed in a separate Basic Assessment process**).

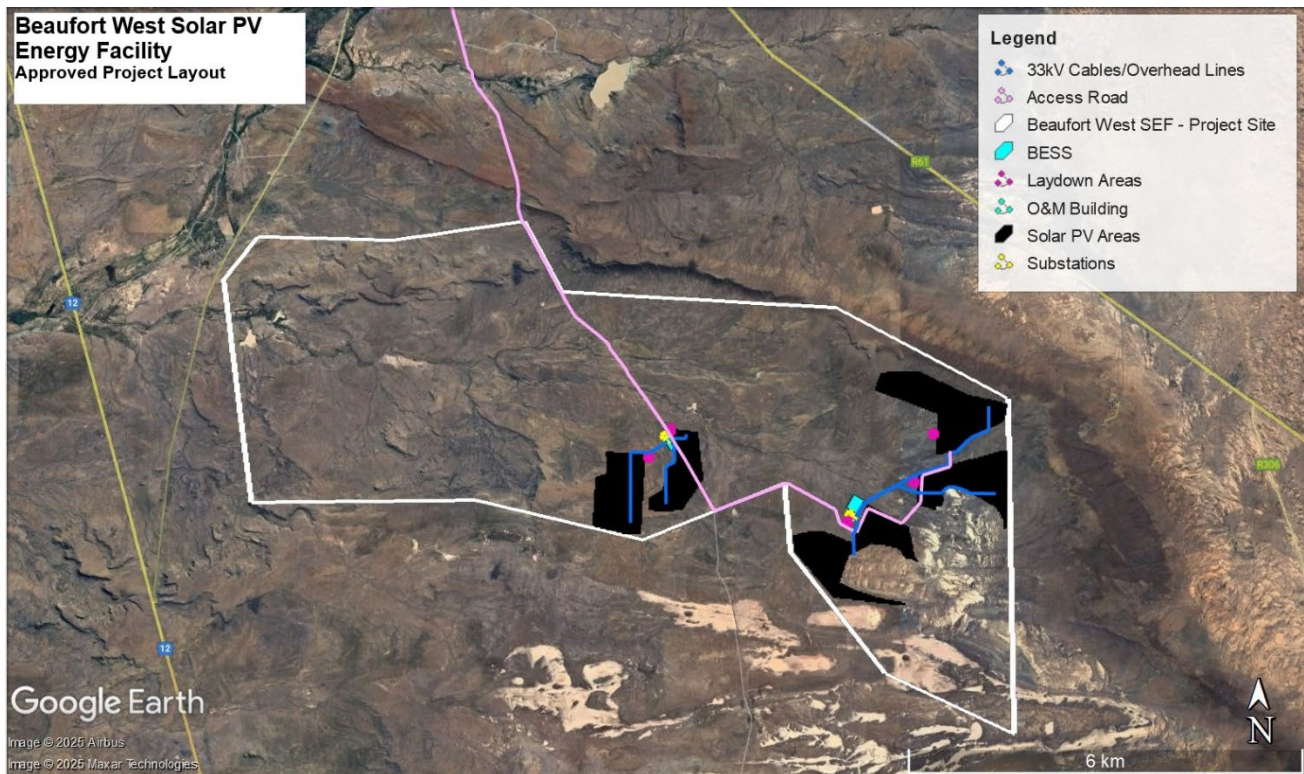


Figure 2: Approved layout of the authorised Beaufort West Solar PV Energy Facility.

4. Proposed Amended Layout Plan

The proposed amended layout includes a refinement of the layout of the on-site substations, the solar PV areas, laydown areas and MV cabling. All other aspects of the Project will remain the same. An alternative access road is being explored from the east, (to be assessed in a separate Basic Assessment process), however the previously approved access road in Figure 2 above will also be retained.

The proposed amended layout plans (the preferred layout and alternative layout) have both taken the identified avifaunal sensitives into account (**Figures 3 & 4**). The proposed amendments to the layout plan (preferred and alternative) will not result in an increased level or change in the nature of the avifaunal impacts originally identified or require any changes to the mitigation measures recommended in the Avifaunal Impact Assessment (Chris van Rooyen Consulting 2022). The inputs into the final EMP_r for the SEF should be as per the original recommendations, which is included in Section 7 below for ease of reference. The proposed changes to the Layout Plan would not result in any changes to the impact management outcomes (with respect to avifauna) of the EMP_r. **Overall, the proposed amended final layout plans (the preferred layout and alternative layout) is considered acceptable from an avifaunal impact perspective, provided all mitigation measures are strictly implemented.**

Overall, the proposed amendments to the project description would not result in an increased level or change in the nature of the impacts for the current approved final layout plan, nor would the proposed amendments result in an increased level or change in the nature of the impacts for the proposed amended final layout plan. Considering this, the proposed amendments are acceptable in terms of avifaunal impacts for both the current approved final layout plan and the proposed amended layout plan (both the preferred and alternative layout).

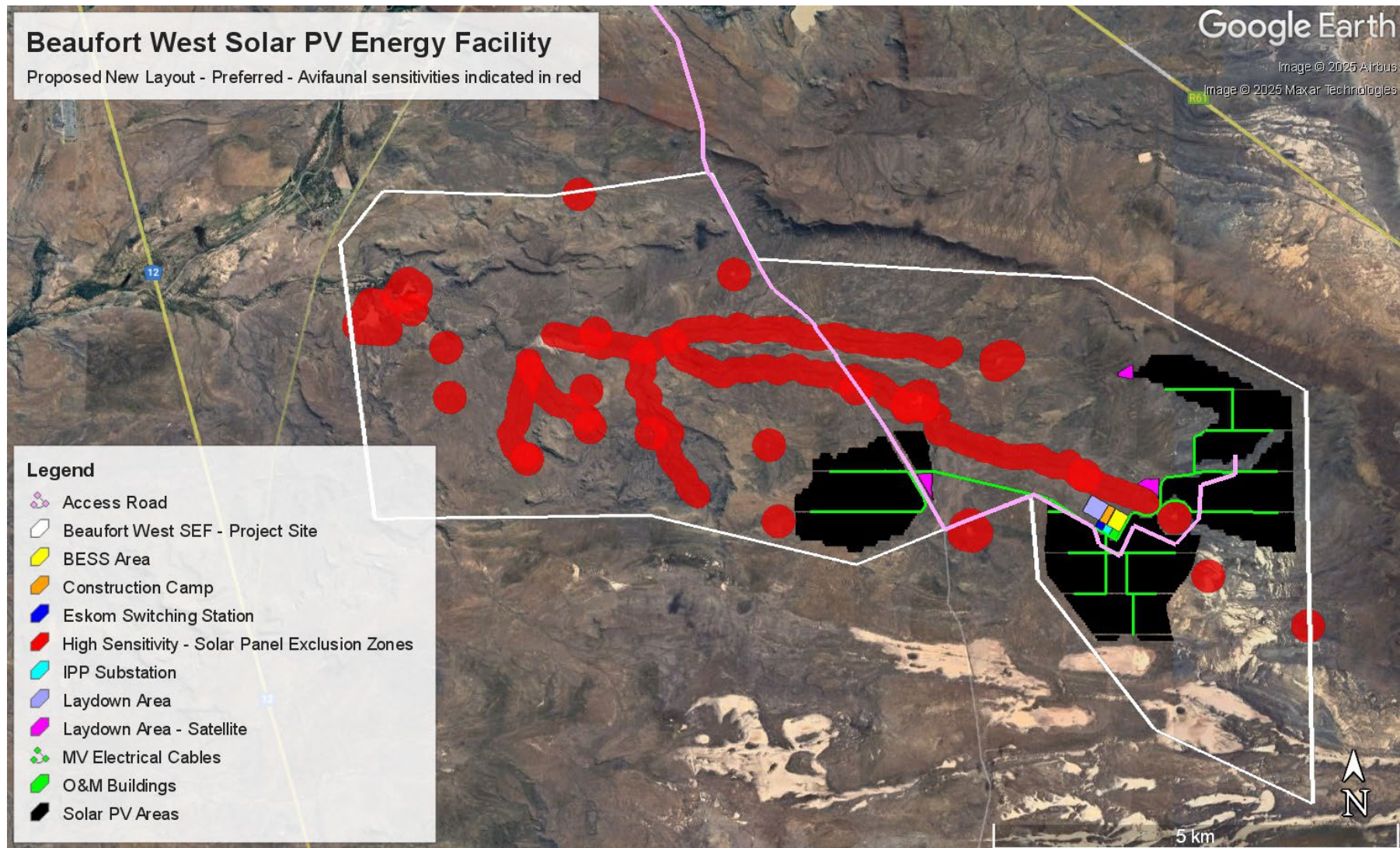


Figure 3: Proposed Amended Final Layout (Preferred) of the Beaufort West SEF. Avifaunal sensitivities indicated in red.

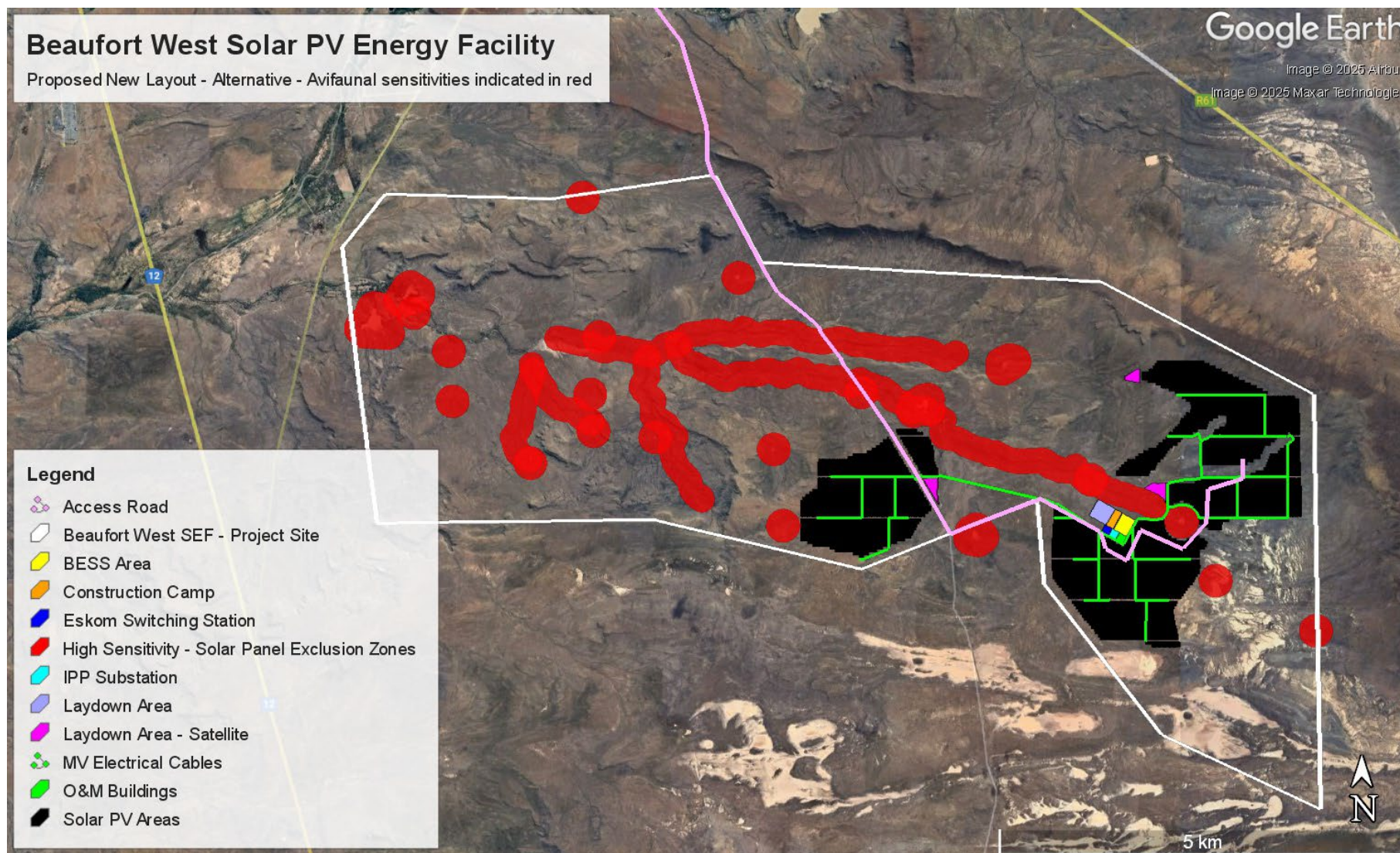


Figure 4: Proposed Amended Final Layout (Alternative) of the Beaufort West SEF. Avifaunal sensitivities indicated in red.

5. Cumulative Impacts

Cumulative effects are commonly understood to be impacts from different projects that combine to result in significant change, which could be larger than the sum of all the individual impacts. The assessment of cumulative effects therefore needs to consider all renewable energy projects within a 30 km radius that have received an EA at the time of starting the environmental impact process, as well as the authorised Beaufort West SEF Project. There were seven (7) renewable energy projects authorised, operational or in process within a 30 km radius around the proposed Beaufort West SEF at the time of the environmental impact process.

The negative impacts resulting from all phases of this proposed development (i.e. development to the extent of individual farms) would certainly be substantially amplified by the construction and operation of multiple renewable energy projects in the area (development to the extent of broader localities or even regions). Relatively minor levels of disturbance at the individual project level (i.e. farm) would escalate to combined levels likely to cause complete and possibly long-term evacuation of the locality or region by more sensitive bird species (Table 2).

Table 1: Cumulative Impacts

Nature: Cumulative impacts in terms of: <ul style="list-style-type: none"> • Displacement of priority species due to disturbance during construction phase • Displacement of priority species due to habitat loss in the construction phase • Mortality of priority species due to collisions with solar panels in the operational phase • Mortality of priority species due to entrapment in perimeter fences– operational phase • Mortality of priority species due to electrocutions on the overhead MV network and in the substation yard – operational phase • Mortality of priority species due to collisions with the 33kV medium voltage overhead lines in the operational phase 		
	Overall impact of the Project considered in isolation (post mitigation)	Cumulative impact of the Project and all other projects in the area (post mitigation)
Impacts Significance	Low	Medium
Status	Negative	Negative
Mitigation Measures: <ul style="list-style-type: none"> • Construction activity should be restricted to the immediate footprint of the infrastructure as far as possible. • Burying of internal MV cables. • Using bird-friendly structures for the any above ground sections of MV poles. • Rehabilitation of disturbed vegetation. • Maximum use of existing roads. • Avoidance of no-go buffers around sensitive areas, recommendations of the Freshwater and Botanical Specialists should be strictly implemented. • Marking of any overhead power lines with Bird Flight Diverters. 		
Residual Impacts: The implementation of the proposed mitigation measures will result in a reduction of the cumulative impacts, but the proposed Project (in isolation) will still have a low-medium residual impact at a regional level.		

6. Impacts Summary Table

Below is a summary table comparing the identified impacts of the Authorised Project vs. the proposed Amended Project of the Beaufort West SEF (**Table 3**). Identified impacts and impact ratings of the Authorised Project are as per the original Avifaunal Impact Assessment conducted by Chris van Rooyen Consulting (October 2022).

Table 2: Impacts Summary Table

IMPACT	AUTHORISED PROJECT		ASSESSMENT OF PROJECT WITH PROPOSED AMENDMENTS (PREFERRED ALT)		ASSESSMENT OF PROJECT WITH PROPOSED AMENDMENTS (ALTERNATIVE)	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
CONSTRUCTION PHASE						
1) Habitat Loss	Medium (-)	Medium (-)	Medium (-)	Medium (-)	Medium (-)	Medium (-)
2) Displacement due to Disturbance	Medium (-)	Medium (-)	Medium (-)	Medium (-)	Medium (-)	Medium (-)
OPERATIONAL PHASE						
1) Entrapment in Perimeter Fences	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)
2) Collisions with Solar Panels	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)
3) Electrocutions on the Internal Medium Voltage Network	Medium (-)	Low (-)	Medium (-)	Low (-)	Medium (-)	Low (-)
4) Collisions with the Internal Medium Voltage Network	Medium (-)	Low (-)	Medium (-)	Low (-)	Medium (-)	Low (-)
DECOMMISSIONING PHASE						
1) Displacement due to Disturbance	Medium (-)	Medium (-)	Medium (-)	Medium (-)	Medium (-)	Medium (-)
CUMULATIVE IMPACTS (ALL PROJECTS IN 30 KM RADIUS)						
1) Habitat Loss	High (-)	Medium (-)	High (-)	Medium (-)	High (-)	Medium (-)
2) Displacement due to Disturbance						
3) Collisions with Solar Panels						
4) Entrapment in Perimeter Fences						
5) Electrocutions/collisions on the Internal Medium Voltage Network						

7. Recommendations

The following mitigation must be included in the EMP:

7.1 Construction Phase

- A 200m solar panel exclusion zone must be implemented around dams, wetlands, and any other sources of open water, and a 150m solar panel exclusion zone must be implemented around drainage lines, as indicated and taken into account in the layouts in **Figures 3 and 4**.
- Construction activity should be restricted to the immediate footprint of the infrastructure and laydown areas, as per the proposed layout.
- Measures to control noise and dust should be applied according to current best practice in the industry.

- The construction of new roads should be kept to a minimum as far as practical and maximum use should be made of existing access roads.
- Access to the rest of the property must be restricted.
- The recommendations of the Ecological and Botanical specialist studies must be strictly implemented, especially as far as limitation of the construction footprint is concerned.
- **Perimeter fence:** Depending on the design of fence (as stipulated in final EMPr) replace at least the top two barbed strands with smooth wire to reduce snagging risks, increasing the spacing between at least the top two wires (to a minimum of 30cm), and ensuring they are correctly tensioned will reduce the snaring risk.
- **33kV network:** All 33kV cables will be underground. However, if any sections need to be above ground the final pole design must be developed in consultation with the avifaunal specialist to ensure that a bird-friendly design is employed. The avifaunal specialist must sign off on the final pole design.
- All internal medium voltage overhead lines must be marked with Eskom approved Bird Flight Diverters, according to the applicable Eskom Engineering Instruction.

7.2 Operational Phase

- A 200m solar panel exclusion zone must be maintained around dams, wetlands, and any other sources of open water, and a 150m solar panel exclusion zone must be maintained around drainage lines.
- The recommendations of the Ecological and Botanical specialist studies must be strictly implemented, especially as far as habitat restoration is concerned.
- **Substation:** Due to the complicated design of the substation hardware, pro-active mitigation is not a practical option. Instead, the situation must be monitored, and should electrocutions of priority species be recorded, reactive mitigation could be applied in the form of insulation of live components.

7.3 Decommissioning Phase

- Decommissioning activity should be restricted to the immediate footprint of the infrastructure and laydown areas.
- Access to the remainder of the site should be strictly controlled to prevent unnecessary disturbance of priority species.
- Measures to control noise and dust should be applied according to current industry standard best practice.

8. Conclusions

The proposed amendments to the layout plan (both the preferred layout and alternative layout) **would not result in an increased level or change in the nature of the avifaunal impacts, or require any changes to the mitigation measures recommended in the Avifaunal Impact Assessment (October 2022).**

The inputs into the final EMPr for the SEF should be as per the recommendations, Section 7 above, of AfriAvian Environmental (2024), formerly known as Chris van Rooyen Consulting. The proposed changes to the Layout Plan (both the preferred layout and alternative layout) would not result in any changes to the impact management outcomes (with respect to avifauna) of the EMPr. **Overall, the proposed amended final layout plan (both the preferred layout and alternative layout) is considered acceptable from an avifaunal impact perspective, provided all mitigation measures are strictly implemented.**

Similarly, the proposed amendments to the project description would not result in an increased level or change in the nature of the impacts for the current approved final layout plan, nor for the proposed amended layout plan. Accordingly, the proposed amendments to the project description are acceptable in terms of avifaunal impacts for both the current approved final layout plan and the proposed amended layout plan.

It is recommended that the proposed EA amendments and the amended layout is approved, **subject to the implementation of the mitigation measures as detailed in the approved EMPr and Section 7 of this Letter.**

Signed:

A handwritten signature in black ink, appearing to read 'A. Froneman', with a stylized flourish at the end.

Name: Albert Froneman

Position: Director / Avifaunal Specialist ek