

NATURA VIVA cc
Palaeontological Impact Assessments & Heritage Management,
Natural History Education, Tourism, Research

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Date: 16 February 2025

Palaeontological Heritage Comment:

**PROPOSED PART 2 AMENDMENT FOR THE AUTHORIZED BEAUFORT WEST
 SOLAR PV ENERGY FACILITY NEAR BEAUFORT WEST, WESTERN CAPE
 PROVINCE**

1. PROJECT CONTEXT & PROPOSED SEF AMENDMENT

Upgrade Energy (Pty) Ltd received Environmental Authorization in 2023 for the proposed construction of the Beaufort West Solar Photovoltaic (PV) Energy Facility (SEF) and associated grid connection infrastructure near Beaufort West in the Western Cape Province (DFFE Reference Number: 14/12/16/3/3/1/2673). A subsequent amendment to the authorisation was undertaken to change the holder from Upgrade Energy to Beaufort West Solar PV Energy Facility (Pty) Ltd, the proponent of the current amendment application. The development site is located on privately owned farmland, approximately 12.5km south east from the town of Beaufort West, within the Beaufort West Local Municipality, in the Central Karoo District Municipality, Western Cape Province (Figure 1).

The site is approximately 3763 ha in extent. The project involves the development of a solar energy facility with a total generation capacity of approximately 415MWac electricity from renewable solar energy to be supplied to the national Eskom grid *via* the existing Droerivier Substation located near to the site.

Beaufort West Solar PV Energy Facility is now applying for a Part 2 Amendment regarding the SEF component of the project but not for the grid connection which will remain within the previously authorised alignment. The main changes applied for in this amendment relate to the project layout and footprint (remaining within the site that was previously assessed). The project components remain largely unchanged, apart from their configurations / locations and some increases in footprint area. The revised SEF project description is appended to this comment letter and the proposed new SEF layout is shown in Figure 1 below.

The **proposed changes to the authorized infrastructure layout of the SEF** (see Figure 1) to be noted are:

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- New **temporary laydown areas** on the north and west – these will be for construction only and will be rehabilitated after construction;
- Inclusion of **construction site camp** (note, no accommodation will be provided on site), and the **substation footprint** changed slightly, but still placed within the approved 2ha footprint;
- The addition of **guard houses** at various locations around the site (these will be very small);
- Each PV development area will be completely fenced.

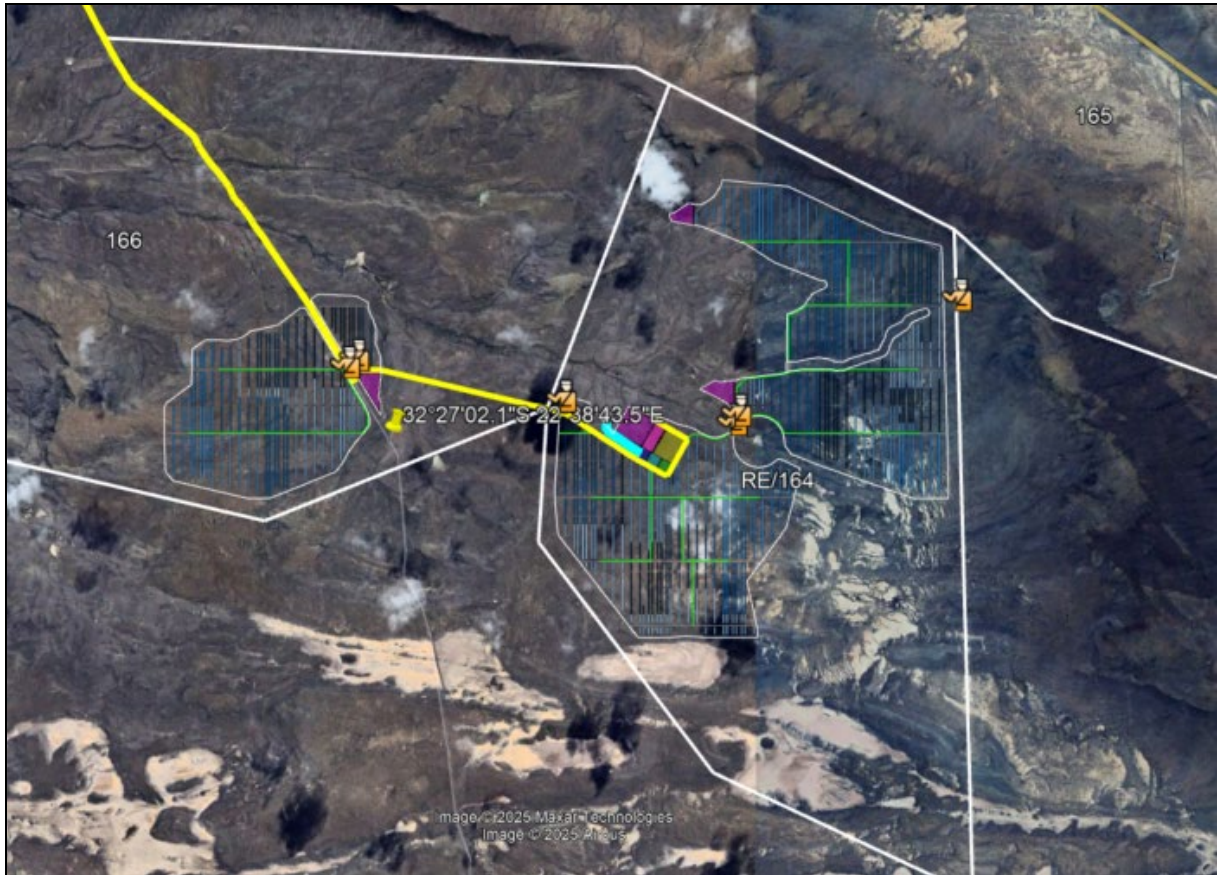


Figure 1: Google Earth© satellite image showing the proposed amended layout of the authorized Beaufort West Solar PV Energy Facility near Beaufort West, Western Cape (Image provided by SRK).

A combined desktop- and field-based palaeontological heritage report for the original, authorized SEF and Grid Connection was submitted by Almond (2022). The principle conclusions and recommendations reached in this earlier report were:

- **No Very High Sensitivity or No-Go palaeontological sites or areas have been identified within the SEF or Grid Connection Infrastructure project areas.** Almost all the known fossil sites (apart from some *in situ* tetrapod burrows) can be readily mitigated – if necessary - through professional recording and collection of fossil material in the pre-construction phase. Therefore no recommendations for micro-siting of SEF or Grid Connection infrastructure are made here.

- The proposed Beaufort West SEF and associated Grid Connection Infrastructure developments are assigned a similar overall impact significance rating (Construction Phase) of **NEGATIVE LOW without mitigation and NEGATIVE LOW following mitigation**. No significant further impacts on fossil heritage resources are anticipated in the planning, operational and decommissioning phases.
- Pending the potential discovery of significant new fossil remains during the Construction Phase of these developments, **no recommendations for further specialist palaeontological studies or mitigation are made here**.
- The responsible ECO / ESO should be aware of the possibility of chance fossil finds (*e.g.* vertebrate teeth, bones, petrified wood) in this region of the Great Karoo and should implement the **Chance Fossil Finds Protocol** outlined in Appendix 2 during the construction phase. The qualified palaeontologist responsible for any mitigation work will need to submit a Work Plan for approval by Heritage Western Cape (HWC) and a Mitigation Report must be submitted to HWC for consideration.
- The proposed Beaufort West SEF and Grid Connection Infrastructure developments are **not fatally flawed in terms of palaeontological heritage**. On condition that the recommended mitigation measures are included within the relevant EMPs and implemented in full, there are **no objections on palaeontological heritage grounds to the authorization of these renewable energy developments**.

2. CONCLUSIONS & RECOMMENDATIONS

Based on a comparison of the original palaeontological database provided by Almond (2022 - fossil site table and maps provided in Appendix 1) and the proposed amended layout of the SEF as shown in Figure 1, **no known fossil sites of significant scientific or conservation interest will be threatened by the new, amended layout**. It is accordingly concluded that:

- **There are no outstanding palaeontological heritage issues with the amended layout for the SEF;**
- **The conclusions and recommendations made in the original PIA report by Almond (2022) remain unchanged.**
- **On condition that the palaeontological heritage mitigation measures made by Almond (2022) are included within the relevant EMPs and implemented in full, there are no objections on palaeontological heritage grounds to the authorization of the proposed amended layout for the Mulilo Beaufort West SEF.**

3. KEY REFERENCES

ALMOND, J.E. (2022). Proposed Beaufort West Solar Renewable Energy Facility and associated grid connection infrastructure, near Beaufort West, Western Cape Province. Palaeontological heritage

report, 93 pp. *Natura Viva cc*, Cape Town.

4. OUTLINE OF AUTHOR'S EXPERTISE

Dr John Almond has an Honours Degree in Natural Sciences (Zoology) as well as a PhD in Palaeontology from the University of Cambridge, UK. He has been awarded post-doctoral research fellowships at Cambridge University and the University of Tübingen in Germany, and has carried out palaeontological research in Europe, North America, the Middle East as well as North and South Africa and Madagascar. For eight years he was a scientific officer (palaeontologist) for the Geological Survey / Council for Geoscience in the RSA. His current palaeontological research focuses on fossil record of the Precambrian - Cambrian boundary and the Cape Supergroup of South Africa. He has recently written palaeontological reviews for several 1: 250 000 geological maps published by the Council for Geoscience and has contributed educational material on fossils and evolution for new school textbooks in the RSA.

Since 2002 Dr Almond has also carried out numerous palaeontological impact assessments for developments and conservation areas in the Western, Eastern and Northern Cape, Limpopo, Northwest Province, Mpumalanga, Gauteng, KwaZulu-Natal and the Free State under the aegis of his Cape Town-based company *Natura Viva cc*. He has served as a member of the Archaeology, Palaeontology and Meteorites Committee for Heritage Western Cape (HWC) and an advisor on palaeontological conservation and management issues for the Palaeontological Society of South Africa (PSSA), HWC and SAHRA. He is currently compiling technical reports on the provincial palaeontological heritage of Western, Northern and Eastern Cape for SAHRA and HWC. Dr Almond is an accredited member of PSSA and APHP (Association of Professional Heritage Practitioners – Western Cape).

Declaration of Independence

I, John E. Almond, declare that I am an independent consultant and have no business, financial, personal or other interest in the proposed development project, application or appeal in respect of which I was appointed other than fair remuneration for work performed in connection with the activity, application or appeal. There are no circumstances that compromise the objectivity of my performing such work.



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APPENDIX - Mulilo BW SEF Amended Project Description

The proposed development site is located on privately owned farmland, approximately 12.5km south east from 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 will generate up to 415 MW, 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 0.5 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 1ha. The functions within these buildings include (but are not limited to) to office/administration, control centre, ablution, workshops, storage areas and security centre.
- The O&M building, substation construction camp and the laydown area (approximately 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 site access road is proposed to the East of the site. However, this will be assessed via a separate BA process and does not form part of the current amendment application.
- 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 Droeriver Main Transmission Station, located approximately 10 km northwest 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.

It is anticipated that construction will take up to two years to complete.