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

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Palaeontological Heritage Resources Comment on Proposed Amendment:

PROPOSED BATTERY ENERGY STORAGE SYSTEM FOR THREE AUTHORISED MULILO SOLAR PV FACILITIES (DU PLESSIS DAM SOLAR PV1, BADENHORST SOLAR PV2 AND BADENHORST DAM SOLAR PV3) NEAR DE AAR, EMTHANJENI MUNICIPALITY, NORTHERN CAPE

Combined desktop and field-based palaeontological heritage assessments (PIAs) for three Mulilo solar PV facility projects on the eastern outskirts of De Aar, Emthanjeni Municipality, Northern Cape were submitted by Almond (2013a, 2013b). Details of these three renewable energy developments - the Du Plessis Dam Solar PV1, the Badenhorst Solar PV2 and the Badenhorst Dam Solar PV3 facilities – are provided in Table 1 and the locations of the project areas are shown in Figures 1 and 2. In all three cases the author concluded that:

- Potential impacts on fossil heritage of the proposed solar facility developments are confined to the development footprint and are only anticipated during the construction phase;
- As far as fossil heritage is concerned, the impact significance of the proposed solar PV facilities is LOW (with or without mitigation).

The three solar PV facility projects have all subsequently received Environmental Authorization (EA) (See Table 1 for details). The respective project applicants now intend to apply for a further Amendment to the currently valid EAs to make provision for a Battery Energy Storage System (BESS) for each facility. This will be situated within the laydown area which was assessed and authorized as part of the Solar PV EIA applications (Figures 1 & 2). The proposed development area for the BESS is approximately 20 hectares in extent but the final footprint will be approximately 5 hectares in size. The BESS will comprise multiple battery units or modules housed in shipping containers and/or an applicable housing structure which is delivered pre-assembled to the project site. Containers are usually raised slightly off the ground and can be stacked if required. Supplementary infrastructure and equipment may include power cables, transformers, power converters, buildings & offices, HV/MV switch gear, inverters and temperature control equipment that may be positioned between the battery containers.

In view of (1) the generally LOW palaeontological heritage sensitivity of the three Mulilo solar PV facility project areas near De Aar, as assessed by Almond (2013a, 2013b), and of (2) the small additional footprint of the proposed BESS, it is concluded that:

- the inclusion of a BESS within each of the authorised laydown areas will not change the nature or significance of any of the impacts assessed in the original PIA studies;
- the proposed BESS installations are unlikely to result in any additional direct, indirect or cumulative impacts that were not previously assessed; and
- there are no additional management outcomes or mitigation measures in terms of palaeontological heritage that would be applicable to the proposed BESS.

There are no objections on palaeontological heritage grounds to the proposed amendment of the EAs for the three listed Mulilo solar PV energy facilities near De Aar.

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Table 1: Details of the three Mulilo solar PV projects near De Aar, Northern Cape

Applicant	Property	EIA Reference Number	Date EA issued
Badenhorst Dam Solar PV3 (Pty) Ltd	Remainder of Portion 1 of the Farm De Aar No 180	14/12/16/3/3/2/483	The EA was issued on 30 July 2015 with reference number 14/12/16/3/3/2/483. The EA was subsequently amended on 16 April 2018 with reference number 14/12/16/3/3/2/483AM1. The EA is valid until 30 July 2023.
Badenhorst Solar PV2 (Pty) Ltd	Remainder of Portion 1 of the Farm De Aar No 180	14/12/16/3/3/2/504	The EA was issued on 8 August 2014 with reference number 14/12/16/3/3/2/504. The EA was subsequently amended on 3 May 2017 with reference number 14/12/16/3/3/2/504AM1 and again on 24 August 2020 with reference number 14/12/16/3/3/2/504AM2. The EA is valid until 8 August 2024.
Du Plessis Dam Solar PV1 (Pty) Ltd	Remainder of the Farm Du Plessis Dam No 179	14/12/16/3/3/2/456	The EA was issued on 28 September 2015 with reference number 14/12/16/3/3/2/456. The EA was subsequently amended on 12 August 2020 with reference number 14/12/16/3/3/2/456AM1. The EA is valid until 29 September 2025.

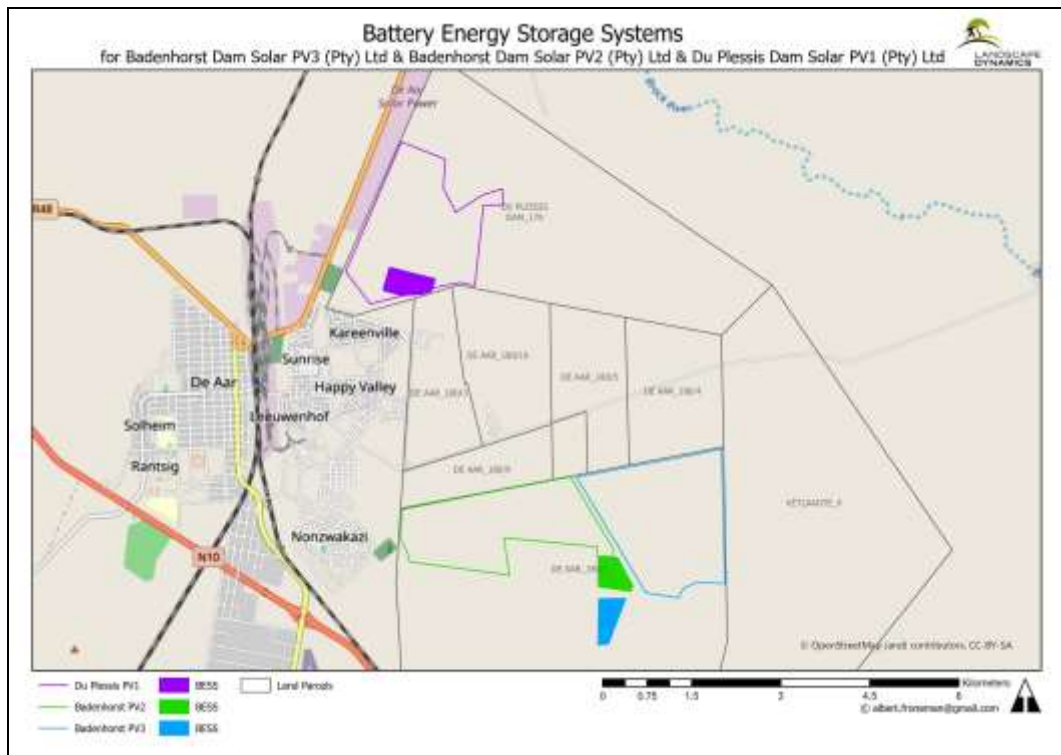


Figure 1: Map of the eastern outskirts of De Aar, Northern Cape, showing the location of the three Mulilo solar PV facilities as well as the proposed sites for the associated BESS (Image provided by Landscape Dynamics).

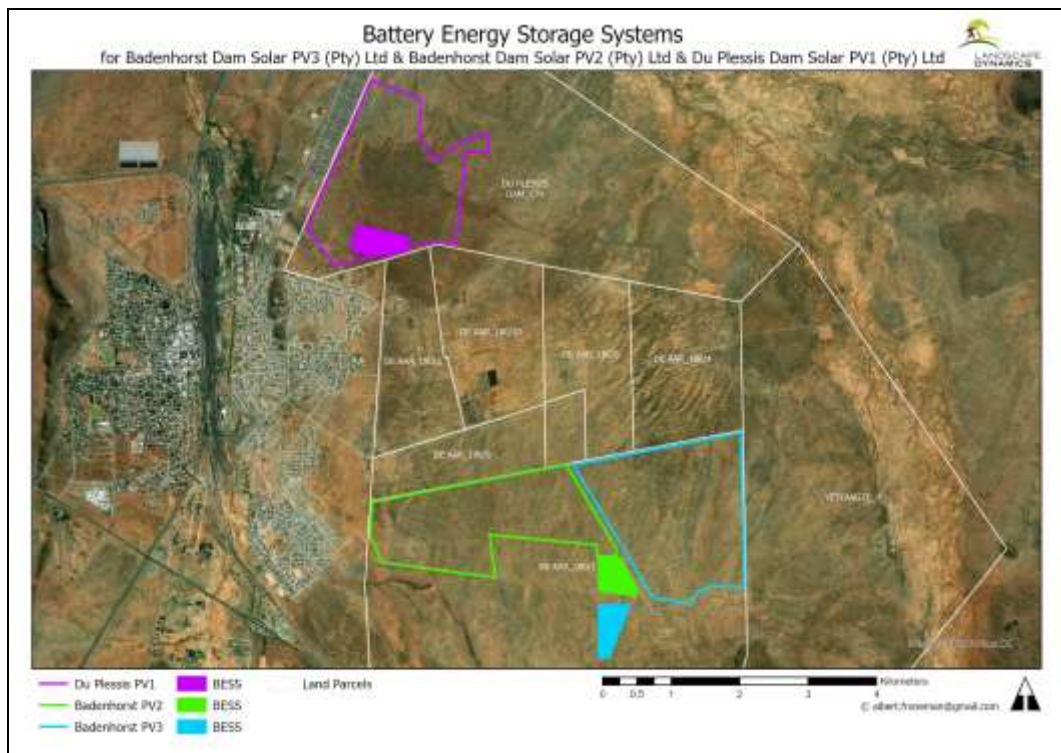


Figure 2: Satellite image of the region east of De Aar, Northern Cape showing the three Mulilo solar facility project areas as well as the footprint of the proposed BESS within each (Image provided by Landscape Dynamics).

REFERENCES

ALMOND, J.E. 2013a. Proposed photovoltaic (solar) energy facilities on Badenhorst Dam Farm near De Aar, Northern Cape. Palaeontological specialist study: combined desktop and field-based assessments, 57 pp. Natura Viva cc, Cape Town.

ALMOND, J.E. 2013b. Proposed photovoltaic (solar) energy facilities on Du Plessis Dam farm near De Aar, Northern Cape. Palaeontological specialist study: combined desktop and field-based assessments, 39 pp. Natura Viva c., Cape Town.