



ARC-SOIL, CLIMATE AND WATER

Private Bag X79, Pretoria 0001, SOUTH AFRICA
Tel: (012) 310 2500 Int: + 27-12 310 2500
Fax: (012) 323 1157 Int: + 27-12 323 1157
e-mail: iscwinfo@arc.agric.za website: www.arc.agric.za

Enquiries: DG Paterson

To whom it may concern:

Aggeneys 1 Part 2 Amendment, Northern Cape Province

ARC-Soil, Climate and Water was commissioned by Savannah Environmental to produce a report on the potential impacts of the Aggeneys 1 solar project on the soil resource and on agricultural potential. This report was submitted in 2018 (Paterson & Oosthuizen, 2018), and the main conclusions from that report were:

- The soils in the area are predominantly red, structureless and very sandy. They are generally deep, but in places, there is a shallower underlying layer.
- Combined with the hot, dry climate, the sandy nature of the soils makes this an area of very low agricultural potential.
- There is a potential wind erosion hazard, and various mitigation measures, as specified in the report, should be implemented.

Subsequently, ARC-SCW has been requested by Savannah to evaluate an amendment to the project (Aggeneys 1 Part 2 Amendment) by the developer (ABO Wind Aggeneys 1 PV (Pty) Ltd). The details of the proposed amendment are as follows:

ABO Wind Aggeneys 1 PV (Pty) Ltd is proposing the construction and operation of a Battery Energy Storage System (BESS) with a contracted capacity of up to 500MW/500MWh as part of the authorised Aggeneys 1 solar energy facility, on a site located 11 km south-east of Aggeneys in the Northern Cape Province. The project is located within the Springbok Renewable Energy Development Zone (REDZ), within ward 4 of the Khai-Ma Local Municipality and within the greater Namakwa District Municipality in the Northern Cape Province on the farm Remaining Extent of Bloemhoek 61. The purpose and utilisation of a Battery Energy Storage System (BESS) is to save and store excess electrical output as it is generated, allowing for a timed release when the capacity is required. BESS systems therefore provide flexibility in the efficient operation of the electricity grid through decoupling of the energy supply and demand.

The development area for the battery energy storage system is ~ 5 ha and is proposed within the area assessed and approved for the solar PV facility, and within the authorised laydown area. The BESS will be located adjacent and as close as possible to the authorised on-site facility substation of the solar PV facility.

The following infrastructure is associated with the BESS:

- **Electrochemical battery storage systems with a maximum height of 3.5 m; and**
- **Multi-core 22 kV or 33 kV underground cables, to follow internal access roads of the PV facility, to connect the battery storage area to the on-site facility substation.**

It is the Developer's intention to bid the solar PV facility and the battery energy storage under the Risk Mitigation Independent Power Producer (IPP) Procurement Programme and/or Renewable Energy Independent Power Producer Procurement Programme

(REIPPPP) of the Department of Mineral Resources and Energy and/or any future relevant procurement programme. Ultimately, the development of the solar PV facility as well as the battery energy storage system is intended to be part of the renewable energy projects portfolio for South Africa, as contemplated in the Integrated Resources Plan (IRP).

Regarding this proposed amendment, the following conclusions can be made:

- The area affected (shown on the map below in green) lies within the broad project footprint (shown by the white outline) as assessed in the previous specialists' report.
- The proposed BESS infrastructure will not have a significant effect on either the soils in the area or the prevailing agricultural potential. Therefore no new impacts are identified with the development of the BESS. The significance of the impacts identified within the specialist study undertaken as part of the EIA process will also remain unchanged.
- The same mitigation measures against possible wind erosion, as specified in the previous specialists' report, will apply. No new/additional mitigation measures are required.



MAP Aggeney's PV1 project site and the location of the authorized laydown area within which the BESS is proposed

It is therefore the opinion of the specialist that the amendment will not significantly affect the project or the potential impacts. The proposed amendment can therefore be authorized for the project, subject to the implementation of the recommended mitigation measures included in the impact assessment (Paterson & Oosthuizen, 2018).

Yours sincerely,

A handwritten signature in black ink, appearing to read 'DG Paterson', is centered within a light gray rectangular box.

DG Paterson (Dr)

Research Team Manager (Soil Science)
ARC-Soil, Climate and Water, Pretoria
garry@arc.agric.za; 012 310 2601 or 083 556 2458

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Reference:

Paterson, D.G. & Oosthuizen, A.B., 2018. Soil impact assessment for the proposed Aggeneys PV1 development near Aggeneys, Northern Cape. Report No. GW/A/2018/20, ARC-Soil, Climate and Water, Pretoria.