



ARC-SOIL, CLIMATE AND WATER

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To whom it may concern:

Aggeneys 2 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 2 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 2 Part 2 Amendment) by the developer (ABO Wind Aggeneys 2 PV (Pty) Ltd). The details of the proposed amendment are as follows:

ABO Wind Aggeneys 2 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 2 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 ~ 5ha and is proposed within the area assessed and approved for the solar PV facility, and within either of the two authorised laydown areas. Both laydown areas authorised for the project are being considered for the placement of the BESS.

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 two proposed areas affected (shown on the map below in green) lie 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.
- In terms of a preferred alternative, neither of the two proposed BESS locations is more or less suitable, as the prevailing factors are the same. Therefore, either one of the options can be authorized from a soils and agricultural perspective.



MAP Aggeneys 2 project site and the locations of the authorized laydown areas which are considered for the placement of the BESS.

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 square box containing a handwritten signature in black ink, which appears to be 'DG Paterson'.

DG Paterson (Dr)

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Reference:

Paterson, D.G. & Oosthuizen, A.B., 2018. Soil impact assessment for the proposed Aggeneys PV2 development near Aggeneys, Northern Cape. Report No. GW/A/2018/21, ARC-Soil, Climate and Water, Pretoria.