

Vryburg Solar 3 Part 2 Amendment, North West Province

Ecology: Terrestrial and Aquatic

Portion 1 of Retreat Farm 671 (where the BESS will be located), Portion 2 of Frankfort Farm 672, Remaining extent of Frankfort Farm 672, Portion 1 of Frankfort Number Farm 672 and the Remainder of Rosendal Farm 673, located within the Vryburg Renewable Energy Development Zone (REDZ), within ward 4 of the Naledi Local Municipality and within the greater Dr Ruth Segomotsi Mompati District Municipality in the North West Province approximately 10 km south-west of Vryburg

22 October 2020

COMPILED BY:

Reinier F. Terblanche

(M.Sc, Cum Laude; Pr.Sci.Nat, Reg. No. 400244/05)

ANTHENE ECOLOGICAL CC

2008/007252/23

For Savannah Environmental (Pty) Ltd

Introduction

The purpose of this report is to consider whether the amendments proposed to add a Battery Energy Storage System (BESS) to the Vryburg Solar 3 Energy Facility, and the change in the description included in the EA pertaining to the on-site substation will need another ecological reassessment of the site or will change the outcomes of the present findings and recommendations at the site. Note that the Battery Energy Storage System (BESS) will be placed within the project site assessed previously for its ecology (terrestrial and aquatic). A detailed description of the proposed amendment and its location follows.

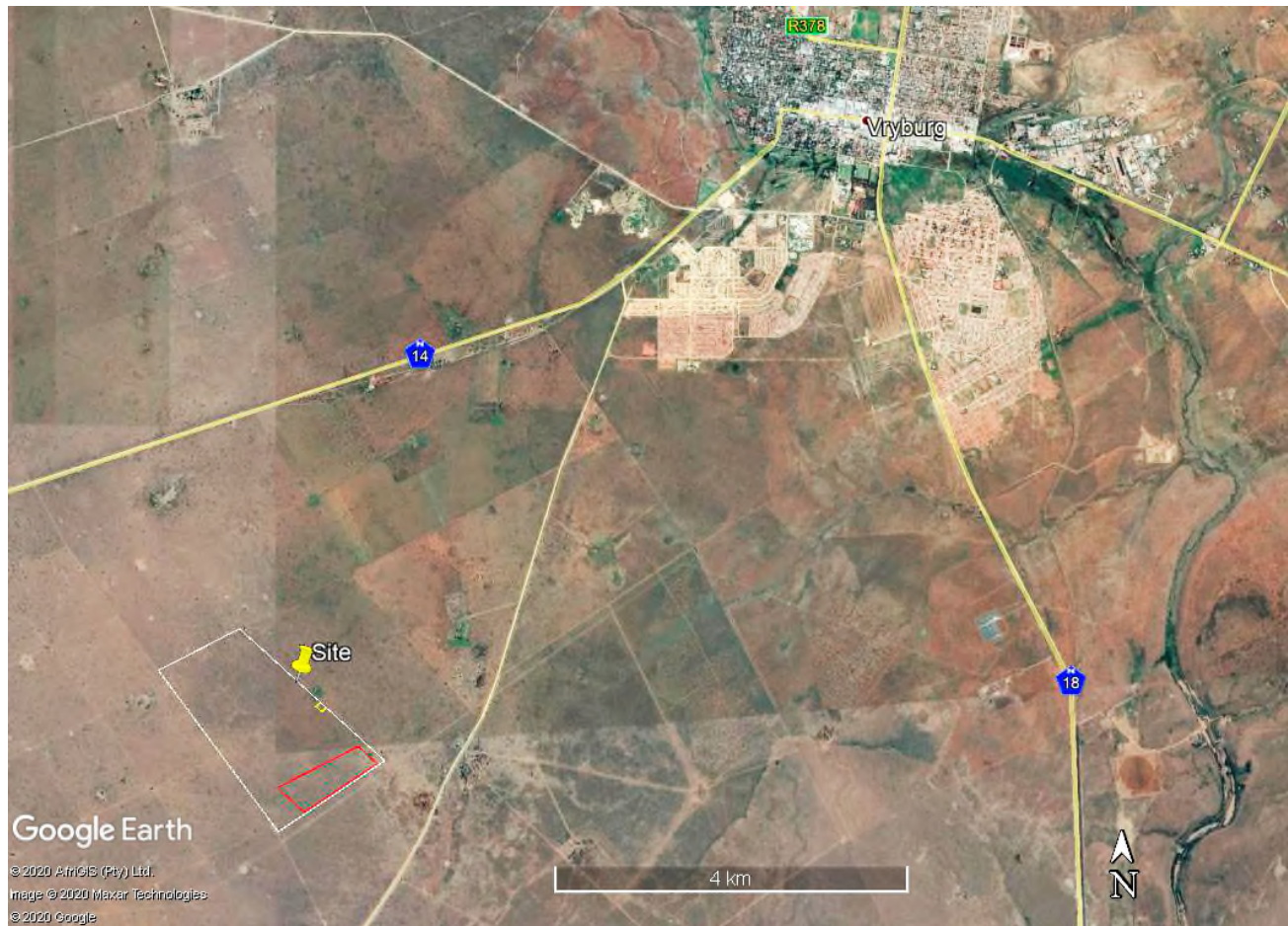



Figure 1 Indications of location of the site of the proposed Vryburg Solar 3 Part 2 Amendment.

White outline	Boundaries of the site
 Red outline	Location of the proposed construction compound/laydown area for the BESS (Battery Energy Storage System)

Grid references and altitudes were taken at site with a GPS Garmin E-trex 20 ® instrument. Map information were analysed and depicted on Google images with the aid of Google Earth Pro (US Dept. of State Geographer, MapLink/ Tele Atlas, Google, 2020).

Vryburg Solar 3 Part 2 Amendment, North West Province – Project Description

Vryburg Solar 3 (Pty) Ltd is proposing the inclusion of the construction and operation of a Battery Energy Storage (BESS) for the authorised Vryburg Solar 3, with a capacity of up to 500MW/500MWh into the project description of the Environmental Authorisation (EA). The BESS which will have an extent of no more than 5ha will be developed within the authorised development footprint of Vryburg Solar 3, within the authorised 15 ha laydown area. The BESS will connect to the authorised on-site facility substation of Vryburg Solar 3 via underground cables. The project is located within the Vryburg Renewable Energy Development Zone (REDZ), within ward 4 of the Naledi Local Municipality and within the greater Dr Ruth Segomotsi Mompati District Municipality in the North West Province 10 km south-west of Vryburg. The authorised solar energy facility and associated infrastructure will be located on the following farm portions:

- » Portion 1 of Retreat Farm 671;
- » Portion 2 of Frankfort Farm 672;
- » Remaining extent of Frankfort Farm 672;
- » Portion 1 of Frankfort Number Farm 672; and
- » The Remainder of Rosendal Farm 673.

The BESS will be located on Portion 1 of Retreat Farm 671.

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 following infrastructure is associated with the BESS:

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

In addition, Vryburg Solar 3 (Pty) Ltd is also proposing a change in the description included in the Environmental Authorisation pertaining to the on-site substation. The change relates to the addition of collector infrastructure as part of the authorised on-site substation and within the authorised footprint of the 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 is intended to be part of the renewable energy projects portfolio for South Africa, as contemplated in the Integrated Resources Plan (IRP).

Conclusion and recommendation

* The proposed laydown area of the Battery Energy Storage System (BESS) and collector infrastructure are located within the Vryburg Solar 3 site of which the ecology (terrestrial and aquatic) has been surveyed previously.

* The outcomes of the previous report do not need any changes in terms of the findings, risks, mitigations and recommendations.

* The permit for removal of the protected tree species *Vachellia erioloba* (Camel Thorn Tree) has been successfully applied for following the ecological survey at the proposed Vryburg Solar 3 site and was issued for the entire site. Therefore, also in terms of protected tree species at the site, there is no need for reassessment and no need for any other application for any additional removal of protected tree species.

* Finally, there is no need for any reassessment of the ecology at the site or any change in the outcomes of the ecological report for Vryburg Solar 3 site and it recommended that the existing ecological (terrestrial and aquatic) report applies for the Vryburg Solar 3 Part 2 amendment.



Reinier F. Terblanche

M.Sc, Pr.Sci.Nat 400244/05 Ecological Science, M.Sc, Ecology, *Cum Laude*