

14 October 2020

Dear Sir or Madam

RE: ABO WIND LICHTENBURG 2 PV (PTY) LTD PART 2 AMENDMENT

ABO Wind Lichtenburg 2 PV (Pty) Ltd ("Lichtenburg 2") is proposing the construction and operation of a Battery Energy Storage System (BESS) of up to 500MW/500MWh within the authorised footprint of the solar PV facility, on a site located 10km north of Lichtenburg and 7.5km south of Bakerville in the North West Province. The project is located on Portion 23 of the Farm Houthaalbomen No. 31 and Portion 2 of the Farm Zamenkomst No. 4, within the Ditsobotla Local Municipality in the Ngaka Modiri Molema District Municipality in the North West Province. The general 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 purpose of the letter is to discuss the anticipated impacts of the proposed construction and operation of a Battery Energy Storage System (BESS) of up to 5ha within the authorised laydown area assessed and approved for the solar PV facility.

The following infrastructure is associated with the BESS:

- Electrochemical battery energy storage systems (including either Lead Acid and Advanced Lead Acid; Lithium ion; NiCd, NiMh-based batteries; Temperaure (NaS, Na-NiCl₂, Mg/Pb-Sb) batteries or Flow batteries (VRFB,Zn-Fe, Zn-Br)) with a maximum height of 3.5m;
- Multi-core 33kV underground cables, to follow internal access roads of the solar PV facility, to connect the battery storage system to the on-site facility substation.

The Soil, Land Use, Land Capability and Agricultural Potential Assessment for the Environmental Impact Assessment (EIA) process of Lichtenburg 2 was conducted in June 2018 and the final report submitted on 7 November 2018. This assessment included soil and land capability classification of Portion 23 of the Farm Houthaalbomen No. 31 and Portion 2 of the Farm Zamenkomst No. 4, the properties where the solar PV facility as well as the proposed BESS will be located. These properties were collectively referred to as the "project site". The project site consists of shallow red apedal soil and shallow orthic topsoil overlying lithic material or rock and fractured rock. The shallow red apedal soil profile was named "Hutton" following the previous South African Soil Classification System of 1991. Following the Soil Classification System published in 2018, the red apedal soil profiles in the area are now referred to as the Vaalbos and Nkonkoni forms. The other shallow soil forms in this farm portion is that of the Glenrosa and Mispah forms.

Small pockets of deeper soil profiles are present within the project site and consist of Hutton soils (deeper than 1.5m) as well as Clovelly and Glencoe soils. These soil profiles are part of the centre pivot irrigation areas and have been excluded from the layout of the Lichtenburg 2 PV project.

Following the land capability criteria as outlined by Department of Agriculture, Forestry and Fisheries in 2017, the area is considered to have five different land capability classes ranging from low to moderate-high. The derivation of land capabilities from the soil classification data indicated that there are two land capability classes i.e. low-moderate where shallow soils are present and moderate-high where the deeper arable soil is present. The Lichtenburg PV 2 project's layout was altered during the EIA process to avoid areas with moderate-high land capability. Prior to the environmental authorisation of Lichtenburg 2, the property was used for irrigated grain production and cattle grazing at a grazing density of 10 to 12 ha per Large Stock Unit (ha/LSU).

The following impacts on soil and agricultural production was identified, as part of the EIA, for the (now authorised) Lichtenburg PV 2 project:

- Soil erosion
- Soil chemical pollution
- Loss of areas with land capability for livestock grazing

The impacts listed above remain applicable for the proposed amendments and no additional impacts from a soils and agricultural potential perspective is anticipated. In addition to the original impacts identified and rated, the decrease of areas available for livestock farming, is considered a cumulative impact of Lichtenburg 2, as assessed within the EIA. It is assumed that the BESS footprint will remain outside of the centre pivot irrigated crop fields and will allow for a 50m buffered area around these fields.

It is my professional opinion that the findings and recommended mitigation measures of the EIA specialist report submitted as part of the Lichtenburg 2 authorisation process remain applicable for the proposed BESS.

I therefore do not recommend any additional Soil and Agricultural Specialist Assessment as part of the Application for an amended Environmental Authorisation.

Yours sincerely,

