

8 September 2020

Dear Sir or Madam

RE: SIRIUS SOLAR PV PROJECT TWO: INCREASE IN CONTRACTED CAPACITY BY 75MW AND DEVELOPMENT OF A BATTERY ENERGY STORAGE SYSTEM

Sirius Solar PV Project Two RF (Pty) Ltd is proposing the construction and operation of a Battery Energy Storage System (BESS) of up to 4.5GWh, as well as an increase of the contracted capacity of the authorised Sirius Solar PV Project Two by 75MW within the authorised footprint, on a site located 21km south-west of Upington in the Northern Cape Province. The project is located within the Upington Renewable Energy Development Zone (REDZ), within the Kai !Garib Local Municipality and the ZF Mgcawu District Municipality in the Northern Cape Province.

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 6.5ha within a development area of around 18ha as well as the increase of the contracted capacity of the solar PV facility by 75MW. The BESS development area will be within the boundaries of the authorised development footprint for the Sirius Solar PV Project Two. The applicant of the proposed amendments is Sirius Solar PV Project RF (Pty) Ltd.

The development footprint as well as the development area identified for the construction and operation of the BESS is located adjacent the authorised on-site facility substation of the solar PV facility. The BESS will be connected to the authorised on-site facility substation. The following infrastructure is associated with the BESS:

- Lithium-ion, Lithium Iron Phosphate, Sodium Sulphur or Vanadium Redox batteries in a container with a footprint of 6.5ha and a maximum height of up to 2.8m; and
- Multi-core, 33kV underground cables to connect the battery energy storage to the authorised on-site facility substation of Sirius Solar PV Project Two.

The environmental impact assessment process for Sirius Solar PV Project Two included a report by Johann Lanz (November 2013) that describes the soil and agricultural properties of the development area. Considering this report, the area consists mainly of shallow soils of the Coega and Mispah forms and small patches with deeper Hutton soil profiles. The agricultural activities of the development area has been described as low intensity grazing without any presence of cultivated land. As a result of the arid climate and shallow soil depth, the only agricultural activities considered to have long-term sustainability, is extensive livestock farming.

Some areas within the authorised development footprint consist of old mine excavations that were used for tungsten mining and has never been rehabilitated since. The report estimates that the total area affected by the excavations is approximately 80m².

The report by Lanz (2013), identified the following impacts as a result of the project infrastructure associated with the Sirius Solar PV Project Two:

- Loss of agricultural land use
- Generation of alternative land use income
- Soil erosion
- Loss of topsoil
- Degradation of veld vegetation

In addition to the original impacts identified and rated, soil pollution as a result of construction and operation of the BESS, is considered to be a potential risk that will require the implementation of mitigation measures. The significance of any potential soil pollution resulting from the project, is rated in the table below.

Nature: The following construction activities can result in the chemical pollution of the soil:

1. Petroleum hydrocarbon (present in oil and diesel) spills by machinery and vehicles during earthworks and the removal of vegetation as part of site preparation.
2. Spills from vehicles transporting workers, equipment, and construction material to and from the construction site.
3. The accidental spills from temporary chemical toilets used by construction workers.
4. The generation of domestic waste by construction workers.
5. Spills from fuel storage tanks during construction.
6. Pollution from concrete mixing.
7. Any construction material remaining within the construction area once construction is completed.
8. Containment breaches related to the battery units and any inadvertent chemical exposure therefrom.

During the operation phase of the BESS, maintenance and repairs can result in waste generation within the assessment zone.

	Without mitigation	With mitigation
Extent	Local (1)	Local (1)
Duration	Short-term (2)	Short-term (2)
Magnitude	Moderate (6)	Low (4)
Probability	Low (4)	Improbable (2)
Significance	Medium (36)	Low (14)
Status (positive or negative)	Negative	Negative

Reversibility	Low	Low
Irreplaceable loss of resources?	Yes	No
Can impacts be mitigated?	Yes	N/A
Mitigation:		
<ul style="list-style-type: none"> • Maintenance must be undertaken regularly on all vehicles and construction/maintenance machinery to prevent hydrocarbon spills. • Any waste generated during construction, must be stored into designated containers and removed from the site by the construction teams. • Any left-over construction materials must be removed from site. • Ensure battery transport and installation by accredited staff / contractors. • Adhere to a procedure for the safe handling of battery cells during transport and installation. 		
Residual Impacts:		
The residual impact from the construction and operation of the proposed project will be low to negligible.		
Cumulative Impacts:		
Any additional infrastructure that will be constructed to strengthen and support the operation of the Sirius Solar PV Project Two and where waste is not removed to designated waste sites, will increase the cumulative impacts associated with soil pollution in the area.		

Apart from the inclusion of mitigation measures to prevent soil pollution to ensure the significance of the impact remains low, it is my professional opinion that the findings and recommended mitigation measures of the specialist report (Lanz, 2013) for the development footprint of Sirius Solar PV Project Two, is also applicable to the construction and operation of the BESS as well as the increase in the contracted capacity with 75MW.

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

Yours sincerely,

