

PROPOSED SOLAR ENERGY FACILITY AND RELATED INFRASTRUCTURE ON FARMS RE/695 AND RE/26/174, BONNIEVALE, WESTERN CAPE

DEA&DP Reference Number: 16/3/3/1/B1/4/1071/24

EXECUTIVE SUMMARY

PROJECT DESCRIPTION:

Energy Partners Power (Pty) Ltd (herein referred to as the "Applicant") proposes the development of a Solar Renewable Energy Facility (SEF) and associated infrastructure on Farms RE695 and RE/26/174 in Bonnievale, Western Cape.

The proposed maximum export capacity of 7.74 MW will be for the sole use of the Lactalis dairy factory in Bonnievale.

In addition to the solar field, the project will include a Battery Energy Storage System (BESS), three internal mini substations ("minisubs") and a 11.5 kV underground transmission line to connect the SEF to the factory's incoming electrical infrastructure. The total development footprint measures approximately 13 ha. Existing gravel access roads off Malherbe Street will be used to access the solar field and transmission line.

In summary, the proposed SEF will entail:

- Fixed tilt monocrystalline solar PV panels mounted on hot dipped galvanised steel purlins and columns with a total maximum height (top of module) of 2.65m
- The PV panels will be connected to 3 respective inverter stations that consist of an inverter stand, canopy & cage, each housing up to 6 inverters.
- An on-site low voltage network will connect the inverters to three respective step-up 11.5kV transformers. From the transformers, an underground 11.5 kV transmission line of approximately 900 m in length will connect the solar plant to the factory. The 1 m deep, 1.2 m wide cable trench will start at the solar PV area on Farm RE695, cross the R317 into Farm RE/26/174 and run to the Lactalis Factory grounds north, back into Farm RE695.
- A Battery Energy Storage system (BESS) of approximately 280 m².
- Maintenance clearances for ad-hoc vehicular access, perimeter fencing and access gate.

The development will not require any services (electricity, water, solid waste and sewerage) from the municipality or other organs of state. The facility will be remotely operated and will only be accessed in case of security breaches, maintenance works and cleaning of the panels that is necessitated about 3 times a year. The periodic cleaning of the panels is the only action that will require water in the post construction phase. For this purpose, water will be obtained from the Lactalis factory and transported to the PV area. Approximately 2 litres of water is required per module per clean, which translates to an approximate annual water use of 100kl.

While the proposed development footprint avoids all natural watercourses and associated 20 m buffers (as recommended by the freshwater specialist), the infrastructure will be located within 32 m of watercourses (non-perennial drainage lines) that extends into the site.

Some artificial drainage lines associated with the historical agricultural land use on site will be infilled and diverted around the SEF footprint. Selected berms will be created beyond the

buffer areas to further protect the watercourses and prevent the formation of concentrated flow paths.

This document constitutes the Final Basic Assessment Report (FBAR) for submission to the DEA&DP for consideration. It incorporates the comments received on the October 2024 Draft Basic Assessment Report (DBAR). Changes are shown in orange text for ease of reference.

SITE SENSITIVITY STATEMENT:

Past agricultural practices have transformed the site. No functional indigenous vegetation (Breede Shale Renosterveld) remains on site. The PV array and transmission line area comprises old cultivated fields, farm roads, and other highly degraded natural areas. The degraded habitat means that terrestrial biodiversity has been significantly compromised to be point where there is little to no ecological functionality and no functional faunal communities when compared with the relatively undisturbed habitat of the surrounding hills that still supports Breede Shale Renosterveld.

There are several remnants of natural drainage lines that crosses the PV area and runs, under the R317 to a series of farm dams (with wetland habitat) and ultimately to the Breede River. These natural systems and associated buffers (as determined by a freshwater ecologist) were excluded from the development footprint. The artificial drainage channels that served to drain the cultivation areas on site will be infilled to accommodate the development footprint.

An informal burial area used by the small community immediately north of the site (predominantly Lactalis employees) are excluded from the development footprint. Furthermore, there are no other cultural heritage, archaeological or palaeontological resources of significance that could be impacted by the development.

Existing buildings and topography will limit the visibility of the solar PV infrastructure. The dominant man-made landscape patterns in the greater area are rectilinear (expressed as uniform blocks of agricultural land use in the form of vineyards, orchards and fields that generally adhere to the topographical undulations of the landscape) and the proposal – although introducing a markedly different land use – imitates this landscape pattern. Therefore, the mixed character of this agri-industrial area within the greater rural agricultural landscape of the Breede River Valley has some resilience to a visual change associated with the nature of the development.

The land has some agricultural value, translating to a low to medium sensitivity from an agricultural perspective. Given that the facility will support the Lactalis factory (agricultural processing plant), it is seen as an appropriate use of agricultural land that is too marginal for viable rainfed crop production (so viable agricultural use is limited to grazing).

Overall, there are no site sensitivities on site that precludes the proposed development.

ALTERNATIVES:

The development proposal (the only and preferred alternative) was guided by environmental sensitivities. The EAP and specialists considered the Applicant's initial investigation area and identified freshwater, heritage and visual constraints that informed the reduced development footprint. The Applicant worked with the EAP and specialists to prevent and/or limit impact on the biophysical and social environment. No other alternatives are warranted in this instance.

The preferred alternative proposes a 7.74 MW SEF and associated infrastructure with a total development footprint of approximately 13 ha on Farms RE695 and RE/26/174 in Bonnievale. In addition to the solar field, the project will include a Battery Energy Storage System (BESS),

three internal mini substations ("minisubs") and a 11.5 kV underground transmission line to connect the SEF to the factory's incoming electrical infrastructure. Existing gravel access roads off Malherbe Street will be used to access the solar field and transmission line.

In summary, the proposed SEF will entail:

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- A Battery Energy Storage system (BESS) of approximately 280 m2.
- Maintenance clearances for ad-hoc vehicular access, perimeter fencing and access gate.

The No-Go alternative was also considered. While certain agricultural activities may be undertaken on the site in terms of its current rights, this is unlikely given that the land is owned by Lactalis with the intention to support the functions of the factory. The findings of the agricultural study also highlighted that climate and soil limitations restricts the dryland cropping potential of the site. The commercial agricultural use of the site is therefore constrained, especially in a water scarce area.

In this instance, the no-go option would therefore likely entail a continuation of the status quo (i.e. fallow agricultural land). This is not a sustainable use of already degraded / transformed land. For this reason, the no-go alternative is not supported, especially given that the impacts associated with the development proposal are avoided, or where this is not possible, are reduced to an acceptable level.

IMPACT SUMMARY:

The summary of impacts is tabled below.

DESIGN / CONSTRUCTION PHASE IMPACTS	Alternative 1 – Development Alternative (PREFERRED)		No-Go Alternative	
	No Mitigation	With Mitigation	No Mitigation	With Mitigation
Agricultural impacts	Low Negative	Low Negative	N/a	N/a
Aquatic biodiversity impacts	Negligible	Negligible	Low Negative	Low Negative
Terrestrial biodiversity impacts	Low Negative	Very Low Negative	Low Negative	Low Negative
Visual impacts: Permanent land use change	Medium Negative	Low Negative	Low Positive	Low Positive
Visual impacts: Site clearance	Medium Negative	Low Negative	Low Positive	Low Positive

Visual impacts: Vegetation clearance	Low Negative	Very Low Negative	Low Positive	Low Positive
Visual impacts: Construction related impacts	Very Low Negative	Very Low Negative	Low Positive	Low Positive
Archaeological impact	Low Negative	Low Negative	N/a	N/a
Nuisance / disturbance impacts (noise, dust)	Low Negative	Negligible	N/a	N/a
Socio-economic impact	Medium positive	Medium positive	N/a	N/a
OPERATIONAL PHASE IMPACTS	Alternative 1 – Development Alternative (PREFERRED)		No-Go Alternative	
	No Mitigation	With Mitigation	No Mitigation	With Mitigation
Aquatic biodiversity	Negligible	Negligible	Low Negative	Low Negative
Terrestrial biodiversity impacts	Very Low Negative	Very Low Negative	Low Negative	Low Negative
Visual Impact: Light	Very Low Negative	Insignificant / Negligible	Low positive	Low positive
Visual Impact: Glint and Glare	Very Low Negative	Very Low Negative / insignificant	Low positive	Low positive
Impact on climate change	Medium positive	Medium positive	Medium negative	Medium negative
Socio-economic impact	Medium Positive	Medium Positive	N/a	N/a

FINDINGS AND RECOMMENDATIONS:

This basic assessment process was based on a sensitivity analysis that were informed by specialists, as needed. It revealed that the project presents the sustainable use of fallow agricultural land, with minimal biophysical and social impacts. The private solar PV facility will contribute globally to reducing carbon emissions from fossil fuel derived energy and will support and benefit the existing functions of the Lactalis dairy factory.

It was shown that the project is associated with limited negative impacts at tolerable levels. No fatal flaws were identified. The no-go alternative is not reasonable or feasible when compared to the limited, justifiable negative impacts and benefits associated with the development proposal.

All the specialists that were involved in the study supports the development, with implementation of the recommended control measures. **None of the limited comments received on the DBAR suggests that the development is inappropriate or is not supported.**

In the opinion of the EAP, the development constitutes responsible development and the 'Best Practicable Environmental Option' on site. Therefore, the EAP recommends approval of the proposal, subject to the following conditions:

- Full implementation of specialist impact management / control measures, as incorporated into the EMPr;
- The duty of care principle should be observed at all times.