

EXECUTIVE SUMMARY

Introduction

Mulilo Renewable Energy (Pty) Ltd, the applicant, intends to develop a 20 mega watt solar farm in Prieska. The context within which this development is proposed is the global concern around climate change and fossil fuel based energy supply. As a result and in response to this concern, the renewable energy industry is experiencing an explosive growth worldwide due to the accelerating global warming phenomena. Renewable energy resources are anticipated to replace coal fired power stations, thus reducing the carbon emissions that contribute to an increase in global warming.

During the past year, Mulilo Renewable Energy (Pty) Ltd identified solar power generation potential near the town of Prieska in the Northern Cape. The site has been evaluated, and can accommodate at least 20MW installed solar power generation capacity.

The site has been secured, with Mulilo Renewable Energy (Pty) Ltd entering into long term agreements with the land owners. Grid connectivity has been discussed with ESKOM, who are supportive of this project. Eskom is in a position to enter into a power purchase agreement as soon as the mechanism is made available.

Solar farms are considered to be of national importance in anticipation of its contribution to electricity supply and reduced reliance on non-renewable energy sources. This application has therefore been made directly to the National Department of Environmental Affairs (DEA).

Location of the project

The proposed project site lies in the arid Nama Karoo eco-region and mountain ranges of the Northern Cape Province. It lies within the Pixley Ka Seme District Municipality; west of the town of Prieska and adjacent to the abandoned mining town of Copperton. Prieska is located on the southern bank of the Gariep / Orange River, about 130km west (downstream) of the confluence of the Gariep and Vaal rivers.

The proposed site lies adjacent to the Cuprum Substation which also lies near the Kronos Substation where power will be connected onto the national grid with an estimated ecological footprint of about 34ha in extent.

Project description:

The proposed photovoltaic facility is located in the central part of South Africa where there is very good solar radiation due to the low incidence of cloud cover, and moderate altitude of over 1000m above sea level. The site consists of a single property, farm no. 104/1 near the town of Prieska. Development on the site is expected to be done in 10MW phases and the completed development will consist of an 800m x 400m array located in the South Eastern part of Prieska.

The proposed development will require the construction of a gravel access road 800m long and with a minimum width of 4m, a control building and also a 2m high perimeter fencing to be erected at a distance of 6m from the installation. However, the PV facility will operate automatically only requiring inspections at fixed intervals by a single technical engineer. Remote monitoring will therefore be used to monitor the PV facility.

Prieska is well served by road and rail transport from the Northern Province, Gauteng, Port Elizabeth, Cape Town, and Saldanha Bay. Materials to be imported will be shipped to the Cape Town Harbour and then transported by road over a distance of 749 km to the site.

Generation capacity alternatives

Alternative 1: Establish a PV facility on farm 104/1 with a total generation capacity of 20MW. (Please refer to Figure 1.4 below)

Alternative 2: Establish a PV facility on farm 104/1 with a total generation capacity of 25MW. (Please refer to Figure 3.2 below)

Alternative 3: No go alternative

Following this alternative means that the proposed development will not proceed. Pursuing this alternative will result in the subject property continuing to exist in its current state as underutilised agricultural land. Furthermore, not implementing the proposed project will result in lost opportunities from the potential of the PV facility to complement the reliability and stability of the national grid.

Specialist Findings

Botanical

Either of the alternatives is not located on vegetation types which are “regarded as threatened on a national basis, and is very widespread within the Nama Karoo”. Overall botanical sensitivity is rated as Medium. Since the Scoping phase the layout has been amended to avoid sensitive species including three protected plant species.

Avifauna

The avifaunal impact assessment found that both development alternatives are not likely to have significant, long term avifaunal impacts. However, it is recommended that long term monitoring is put in place as a development such as the one being proposed is unprecedented and impacts will need to be monitored.

Archaeology

The key findings of the Archaeological Impact Assessment were that relatively large numbers of Later Stone Age tools were recorded over the proposed development site. However, the vast majority of tools were found outside the proposed 34ha (20MW) development site, which is already quite severely degraded, consisting of demolished mine works, tailings and old farm infrastructure.

Paleontology

The paleontological impact assessment study outlines the fossil heritage recorded within each of the three rock units occurring within the study area in order of decreasing geological age as follows:

- Fossils in the Jacobsmyn Pan Group
- Fossils in the Dwyka Group
- Fossils in the Kalahari Group

Heritage

Part of the brief of the heritage study was to identify heritage resources and buildings older than 60 years affected by the proposal or within the immediate environs and affected visually by the proposal. The study revealed that there were old and dilapidated buildings which form part of the disused mining area, but these buildings were not older than 60 years. No buildings older than 60 years were found either on the site or in the general vicinity of the site. The heritage study also found that there are no channeled views due to the opens of the landscape and little vertical relief. Vertical elements on this site are local comprising the mine shaft which is visible from many points some disused pylons to the north of the site and to a lesser extent low tree canopy in the town

In terms of the cultural landscape, which is defined by the World Heritage Committee as “the combined work of nature and man”, the proposed site was found that the affected landscape is not part of a designed landscape or one which exhibits characteristic of organic human settlement and growth nor is it an associative landscape or one associated with valued religious and cultural associations. The morphology of the landscape may be described as typical central Karoo landscape that comprises flat open extensive vistas of sky. It is generally flat sandy land of grassland and scrub.

Visual

The key findings of the visual impact assessment study were that the overall visual impression of the locality is one of an open flat rural landscape, offering long expansive views. The visual characteristic of the area is that of a completely uncluttered landscape; even the clutter of the mine and of the town is set in a landscape of such a scale that they do not form a visual focus.

Generally photovoltaic installations make a strong visual statement. They are not high, below 2.5m and it is the scale of their footprint that is so large. Although they are generally expected to be visible for most receptors living and working locally up to 2 km, and to a lesser degree, up to a 5km distance, the proposed Prieska site is remote and has few receptors living and working locally. In addition, some adjacent areas are already despoiled through mining. The visual envelope indicates that receptors are largely confined to those to the north.

The difference between the 20 MW, (Preferred) and the 25 MW development is one of degree, more panels, but similar other infrastructure. The locality is ideally suited to this form of development. It was also found that the viewshed for the development site is defined by:

- Copperton town, Airfield, and the ground to the north and north east.
- Munitions testing site
- Mine
- R357 and other local roads

The viewshed envelope is therefore established by local development and transport corridors

The cumulative impacts will fall mainly in the spheres of land use change and visual impact.

Impact statement

The **Botanical study** finds that the development would have **no significant** impacts as impacts identified during the Scoping phase have been avoided and the vegetation on site is not threatened on a national basis.

The **avifaunal assessment** reports that the development would have **no significant** or long term impacts and both alternatives would have similar impacts. Long term impacts monitoring, however, has been recommended.

Indications from the **Archaeological Impact Assessment** are that in terms of archaeological heritage, the proposed Prieska PV project is viable, and impacts are expected to be **limited** as no fatal flaws have been identified.

The **paleontological** study indicated paleontological sensitivity to be **low – zero** for the proposed site. There are therefore no significant impacts to be expected as a result of the proposed development.

Both development alternatives will not have an impact on known above ground **heritage** resources as none are known to exist. No heritage related constraints therefore exist on the site and the area comprises no cultural landscapes of significance.

The **Visual** impact of the proposed development has been assessed as **moderate** and with time may reduce to **moderate-low** as mitigation matures.

Based on the findings of all the credible specialists who undertook their respective specialist studies (based on the approved terms of references), it is concluded that the overall impact of this development is low. This development has been reviewed by using the triple bottom line approach, which clearly shows that this is a sustainable development with a balance between the biodiversity, social and economic elements. Global dependence on fossil fuels and the impacts of climate change is of concern globally. South Africa whose energy is largely fossil fuel based must aim to meet targets which have been set to incorporate more renewable energy into the energy mix and reduce carbon dioxide emission. The proposed solar farm is a step in this direction as this form of energy is considered to be a clean fuel which has not only local but also global benefits. The benefits that this proposed development contain in these crucial three spheres outweigh the negative impacts.

All measures and recommendations proposed by the various specialists are considered achievable and should be included as conditions of approval.

National Environmental Management Act (NEMA)

The approach to the Environmental Impact Assessment has been guided by applicable legislation and by the principles of Integrated Environmental Management (IEM). The underlying principle of IEM is that environmental factors should be integrated into development proposals to ensure that critical environmental concerns are addressed upfront. The principles laid out in NEMA (Act No. 107 of 1998) are similar in intention to those of IEM.

The study has also been guided by the requirements of the Environmental Impact Assessment Regulations set out in terms of the National Environmental Management Act, 107 of 1998. The EIA Regulations, which are more specific in their focus, define the EIA process in detail. As indicated, the EIA process consists of two phases, i.e. Scoping and EIA. This application is currently at the EIA Phase.

This application was done in accordance to the EIA Regulations of 2006 but is also compliant to the current EIA Regulations of 2010, Listing Notice 544, 545 and 546 of the National Environmental Management Amendment Act.

Way Forward

This report is being made to the Department for a decision. Once an Environmental Authorization (previously called a Record of Decision) is issued all registered Interested and Affected Parties will be notified of the decision and details of the appeal procedure will be provided. The decision made by the DEA will be made known within 10 days after receipt to all registered I&APs. A person affected by the decision who wishes to appeal against the decision, must lodge a written notice of intention to appeal with the MEC within 10 days of being notified of the decision taken by the Department. Following the lodging of the Notice of Intent to Appeal, the appeal submission must be submitted to the Department within the 30 days after the Notice of Intention to Appeal was lodged with the Office of the MEC.

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