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17 October 2022

Att: Rendani Rasivhetshele
SiVEST Environmental Division

Dear Ms Rasivhetshele

RE: PART 1 ENVIRONMENTAL AUTHORIZATION AMENDMENT APPLICATION FOR SPLIT ENVIRONMENTAL AUTHORISATION ISSUED ON 21 MAY 2021 FOR THE CONSTRUCTION OF 75MW PLATSJAMBOK EAST SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITY (SEF) AND 33/132KV IPP PORTION OF THE SHARED ON-SITE SUBSTATION (INCLUDING THE TRANSFORMER), AND ASSOCIATED INFRASTRUCTURE, NEAR PRIESKA, SIYATHEMBA LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE (DFFE Reference: 12/12/20/2320/4/1/AM1)

Project description

South Africa Mainstream Renewable Power Platsjambok East (Pty) Ltd (hereafter referred to as "Mainstream") was issued with an Environmental Authorisation (EA) for the proposed 75MW Mierdam Photovoltaic (PV) Solar Energy Facility (SEF), located near Prieska in the Siyathemba Local Municipality, Pixley ka Seme District Municipality in the Northern Cape Province of South Africa on September 2012 (DFFE Reference No.: 12/12/20/2320/2).

Subsequent to the issuing of the original EA in September 2012, the following amendments have been undertaken and granted for the authorised SEF:

- The EA was amended on 19 June 2015 to extend the validity of the EA as well as to amend the contact details of the holder of the EA (DFFE Reference No.: 12/12/20/2320/4AM1).
- The EA was amended on 22 September 2017 to extend the validity period of the EA (DFFE Reference No.: 12/12/20/2320/4/AM2).
- The EA was amended on 26 of August 2020 to extend the validity period of the EA (DFFE Reference No.: 12/12/20/2320/4/AM3).
- The EA was amended on 21 May 2021 to split the EA into two portions, the IPP portion (DFFE Reference No.: 12/12/20/2320/4/1).
- The EA was amended on 21 May 2021 to split the EA into two portions, the Eskom portion (DFFE Reference No.: 12/12/20/2320/4/2).

The Platsjambok East Photovoltaic (PV) Solar Energy Facility is to be constructed on the Remainder of Platsjambok Farm No 102

The following infrastructure have been authorised by the DFFE:

- A solar PV facility with a capacity to generate 75MW
- The panel arrays of approximately 15m x 4m in the area
- Office and maintenance buildings
- Internal access roads
- Cabling to connect PV arrays to DC to AC inverters
- On-site 33/132kV IPP sub-station
- 132kV overhead power lines to connect to an existing power line that traverses the site or Kronos sub station (i.e. three power lines authorised but only one will be constructed)

Proposed amendments

The proposed amendments are as follows:

- **Extension of the Commencement Period**

  The applicant applied for is the extension of the commencement period of the Environmental Authorisation issued on 07 September 2012. The application falls within the ambit of amendments to be applied for in terms of Part 1 of Chapter 5 of the Environmental Impact Assessment Regulations, 2014, as amended. The applicable legislation is Regulation 30 of the EIA Regulations, 2014 as amended.

Information required to be provided

The following information in terms of Regulation 30(1)(a) of the EIA Regulations, 2014 as amended is required to be provided to the Department of Forestry, Fisheries and the Environment for the application for amendment to be processed:

- A detailed motivation as to why the Department should extend the commencement period of the authorised development, including the advantages and disadvantages associated with the approval or refusal to the request for extension;
- The status (baseline) of the environment (social and biophysical) that was assessed during the initial assessment (by the relative specialist, if applicable);
- The current status of the assessed environment (social and biophysical) (by the relative specialist, if applicable);
- A review of all specialist studies undertaken, and a detailed assessment, including a site verification report providing an indication of the status of the receiving environment (by the relative specialist, if applicable);
- The terms of reference for the specialist reports and declaration of interest of each specialist must be provided;
- The report mentioned above, must indicate if the impact rating as provided in the initial assessment remains valid; if the mitigation measures provided in the initial assessment are still applicable; or if there are any new mitigation measures which need to be included into the EA, should the request to extend the commencement period be granted by the Department;
- An indication if there are any new assessments/guidelines which are now relevant to the authorised development which were not undertaken as part of the initial assessment, must be taken into consideration and addressed in the report;
- A description and an assessment of any changes to the environment (social and biophysical) that has occurred since the initial EA was issued;
- A description and an assessment of the surrounding environment, in relation to new developments or changes in land use which might impact on the authorised project, the assessment must consider the following:
    - similar developments within a 30km radius;
    - Identified cumulative impacts must be clearly defined, and where possible the size of the identified impact must be quantified and indicated, i.e., hectares of cumulatively transformed land.
    - Detailed process flow and proof must be provided, to indicate how the specialist's recommendations, mitigation measures and conclusions from the various similar developments in the area were taken into consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project.
    - The cumulative impacts significance rating must also inform the need and desirability of the proposed development.
    - A cumulative impact environmental statement on whether the proposed development must proceed.

The information requirements listed above serve as the Terms of Reference for this ecological review.

Assessment guidelines applicable since original assessment

The original ecological assessment was undertaken in 2012 (final report dated 18 January 2012) according to

the Environmental Impact Assessment Regulations, 2006. At that time specialist studies were required to comply with Appendix 6 of the EIA Regulations. These have now been superseded by Protocols that have been published in terms of sections 24(5)(a) and 24(5)(h) of NEMA. For Biodiversity-related themes, protocols have been published for the specialist assessment and minimum report content requirements for environmental impacts on the following:

1. terrestrial biodiversity
2. aquatic biodiversity
3. terrestrial animal species
4. terrestrial plant species

Regulation 16(1)(b)(v) of the EIA Regulations provides that an applicant for an EA is required to submit a report generated by the screening tool as part of its application (available at https://screening.environment.gov.za). The screening tool and the protocols have the force of regulations made in terms of NEMA and both instruments are therefore legally binding and must be applied. When the report generated by the screening tool identifies a theme, the relevant protocol for that theme, including the procedure that must be followed for site sensitivity verification and the information requirements for a relevant specialist report, must be applied.

Screening Tool report

A sensitivity screening report from the DFFE Online Screening Tool was requested in the application category: Utilities Infrastructure|Electricity|Generation|Renewable|Solar|PV. The DFFE Screening Tool report for the area, dated 16/10/2022, indicates the following sensitivities:

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Animal Theme		X		
Aquatic Biodiversity Theme	X			
Plant Theme			X	
Terrestrial Biodiversity Theme	X			

Sensitivity features for the Animal Theme are indicated as follows:

Sensitivity	Feature(s)
High	Aves-Neotis ludwigii

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Note that the only animal theme sensitivities is due to a bird species, which is being assessed by a separate specialist and is therefore not discussed further here.

Sensitivity features for the Aquatic Biodiversity Theme are indicated as follows:

Sensitivity	Feature(s)
Low	Low sensitivity
Very High	Wetlands and Estuaries
Very High	Freshwater ecosystem priority area quinary catchments

Sensitivity features for the Plant Theme are indicated as follows:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Tridentea virescens
Medium	Sensitive species 144

Sensitivity features for the Terrestrial Biodiversity Theme are indicated as follows:

Sensitivity	Feature(s)
Low	Low sensitivity
Very High	Ecological Support Area
Very High	FEPA Subcatchments

Status of the biophysical environment originally assessed

The original ecological assessment by Liesl Koch is dated 18 January 2012. The report states that fieldwork for the assessment was undertaken in December 2011.

The site is described as "*very uniform in nature with characteristic Nama Karoo shrubland. The majority of the study area is dominated by low bushes mostly of the Asteraceae or daisy family. Grasses are present in these areas but are scarce. Patches of Rhigozum trichotomum are present where the sandy soils suit the species. Some local depressions are present which have developed into pans. Although they hold water very seldom they are unique in relation to the surrounding areas. The study area currently operates as a functioning grazing farm and the associated impacts are present. The larger study area can however be considered to be intact due to the low sheep carrying capacity.*" Expected habitat conditions are as shown in Figure 1.

A list of plant species is provided that were recorded on site.

For animal species, lists are provided of species that could possibly occur in the general area, of which only a small number were found on site. The Black-footed Cat is confirmed to occur on the site.

Areas of higher sensitivity on site are low ridges, drainage lines, and areas of topographical change, although none of these were defined as "No-go" areas.

Google Earth provides historical aerial imagery that can be used to evaluate changes in a landscape over time. For the current site, detailed imagery is available as far back as 2006. Examples for the site from various dates going back in time are shown in Figure 2. At the time that the original ecological assessment was undertaken, imagery from Google Earth shows that the site was in a natural state, with no obvious impacts. The vegetation appears from the imagery to be sparse with underlying topography and drainage showing through strongly. This pattern extends in all directions and for some distance away from the site. The relative uniformity of the area is confirmed from these images.

Figure 1: Typical vegetation of the study area, as observed from a nearby property.

The conclusion by Koch (2012) was that the proposed development would not be detrimental to the environment.

Current status of the biophysical environment

Imagery from Google Earth shows that there have been no changes on site over time. The vegetation pattern as originally described (Koch 2012) appears to have remained stable. The general status and species composition of the site will be confirmed during an upcoming field assessment, but it is not expected that any fundamental changes will be observed. The preliminary conclusion is therefore that the baseline conditions on site have not changed.

Changes to the status of the biophysical environment

As described in the previous paragraph, available information indicates that the biophysical environment on site is unchanged between the original assessment and the current date.

Review of initial assessment and mitigation measures

The original assessment (Koch 2012) identified three impacts for the proposed project, as follows:

- Loss of habitat for Red List / general species (Low significance, low after mitigation)
- Edge effect (on biodiversity) (Low significance, low after mitigation)

Several mitigation measures were proposed in the original assessment (Koch 2012), as follows (with comments in italics and square brackets):

- An on-site ecologist should be present when site excavation takes place to ensure that any uncovered species are protected from destruction. [*Any measures related to plant species should be contained in the appropriate Management Plan, e.g., Plant Rescue Management Plan*].
- Demarcation of sensitive areas prior to construction activities starting.
- Use of appropriate construction methods in the sensitive area.
- Use of appropriate construction methods in the sensitive areas. [*Appropriate construction methods are not defined*].

Figure 2: Google Earth imagery of the site for different dates.

- A copy of the Environmental Impact Report and associated Environmental Management Programme as well as the specialist study must be present at the construction site for easy reference to specialist recommendations in sensitive areas.
- It is recommended that the construction crew be educated about the sensitivities involved in these areas as well as the potential species they could encounter. A poster of sensitive species (compiled by a qualified specialist) should be kept on the construction site for easy reference. [*A flora permit is required for any protected plant species expected to be lost to the development - the identity of such species and numbers affected must be compiled during a Pre-Construction Walkthrough Survey*].
- Rehabilitation to be undertaken as soon as possible after construction in sensitive area has been completed.
- Only vegetation within the study area must be removed. [*Assume specialist meant "within the footprint of the construction and infrastructure of the proposed project"*].
- Vegetation removal must be phased in order to reduce impact of construction. [*The phasing of vegetation removal within the project footprint area will make no difference to the final outcome*].
- Construction site office and laydown areas must be clearly demarcated, and no encroachment must occur beyond demarcated areas. [*In general, project activities should be within the approved footprint area only*].
- All natural areas impacted during construction must be rehabilitated with locally indigenous plant species. [*Assume this applies to temporary construction impacts. This should be covered in the Rehabilitation/Revegetation Management Plan*].
- Construction areas must be well demarcated, and these areas strictly adhered to.
- The use of pesticides and herbicides in the study area must be discouraged as these impacts on important pollinator species of indigenous vegetation.
- Soils must be kept free of petrochemical solutions that may be kept on site during construction. Spillage can result in a loss of soil functionality thus limiting the re-establishment of flora. [*It is assumed that there is a legal obligation to adhere to any measures related to dangerous / hazardous chemicals and that these measures are contained in the relevant Management Plan*].
- Six monthly checks of the area should take place for the emergence of invader species. [*Management of alien plant species should be detailed in an Alien Invasive Management Plan, which should also include monitoring requirements. Management of alien plant species is a legal requirement, as per NEMBA and CARA. The impact of alien plant species should have been assessed as a potential impact*.].
- Mitigation measures mentioned for the construction phase above must be implemented for any maintenance of the development that may be undertaken during the operation phase.
- Correct rehabilitation with locally indigenous species.
- Monitoring programme to ensure that rehabilitation efforts are successful to ensure that risks such as erosion and the edge effect are avoided. [*Edge effects are unavoidable where infrastructure is located in previously natural spaces*.]
- Constant maintenance of the area to ensure re-colonisation of floral species. [*This should be covered in the Rehabilitation/Revegetation Management Plan*].
- Regular removal of alien species which may jeopardise the proliferation of indigenous species. [*Management of alien plant species should be detailed in an Alien Invasive Management Plan*].

Following current legislation, an assessment of the site would have required compliance with gazetted Species Protocols. A Screening Tool report for the site shows that Terrestrial Biodiversity and Aquatic Biodiversity Themes have Very high sensitivity. This would need to be confirmed by an on-site field verification, followed by a Site Sensitivity Verification. Information from the original assessment (Koch 2012) indicates that the very high sensitivity for these two themes is confirmed on the basis that the site is in a natural state therefore biodiversity zones are as mapped.

For the Plant Theme (Medium sensitivity) and Animal Theme (High sensitivity), the sensitivity would need to be confirmed on-site and either a Compliance Statement provided by the specialist, or an Assessment. No plant species of concern were detected by Koch (2012, see checklist in Appendix 1), therefore a Compliance Statement would have sufficed. For the Animal Theme, the bird species flagged for the site was not seen, but the Black-footed Cat was confirmed for the site by Koch (2012). An Animal Species Assessment would therefore have been required. A full Avian Specialist Assessment is being undertaken for this project, which covers the Avifauna component, but the effect on Black-footed Cat is an impact of potential concern for this project that should be properly assessed.

New proposed mitigation measures

The following mitigation measures are proposed to replace those in the original assessment:

1. Ensure that impacts during construction and operation are restricted to the project footprint area and do not spread into surrounding natural areas.
2. Compile and implement the following management plans, each of which should include appropriate monitoring guidelines:
    a. Rehabilitation Management Plan.
    b. Alien Invasive Management Plan.
    c. Open Space Management Plan.
    d. Plant Rescue/Protection Management Plan.
    e. Black-footed Cat Management Plan (in consultation with EWT).
3. Obtain all required protected fauna, protected flora and protected tree permits from the relevant authorities. This will require a detailed pre-construction walk-through survey of the infrastructure footprint area. This is primarily a legal compliance measure and is not necessarily to mitigate any specific impacts.

Assessment of cumulative impacts on the biophysical environment

The original ecological assessment (Koch 2012) indicates that possible issues of concern for cumulative impacts are dust generation, impacts on ecological movement of species, and emergence of alien species, and "*Decommissioning of the plant will result in the elimination of the cumulative impacts mentioned above*". The last statement is incorrect; loss of natural habitat is irreversible. This is because secondary vegetation that develops in areas where the soil profile is disturbed do not recover the original species composition. The reasons are ecologically complex and, with rare exceptions, means that any loss of natural habitat is permanent.

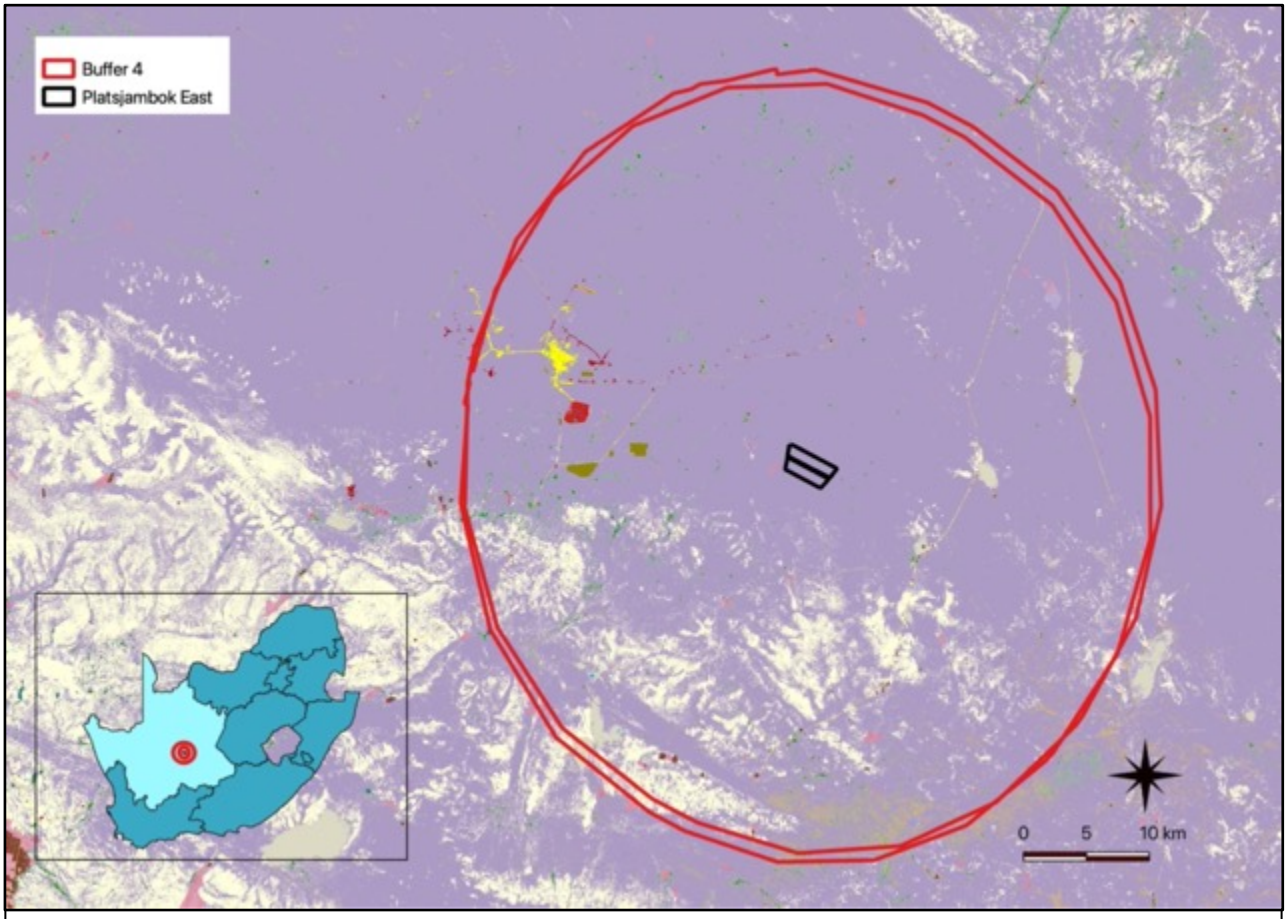

Figure 3: National Land Cover 2018 classes for the areas within 30 km of the current site.

The spatial extent of cumulative impacts can be calculated by determining the loss of habitat within the footprint area of the project relative to the extent of similar habitat within an assessed area. The 2018 National Land Cover dataset has land cover data in 73 natural, degraded and transformed categories. Statistics can be extracted using a GIS algorithm that provides proportions of different land cover classes within 30 km of the current site (Figure 3). Only those classes that occur within the footprint area are of interest to the analysis since it is these classes that are affected by the proposed project. Within the entire project site are the following land cover classes:

Land cover	Amount on site	Amount within 30 km of site
Low shrubland	709 ha (100.0% of site)	229 531 ha (81.2%)
Other bare areas	0 ha (0.0% of site)	43 062 ha (15.2%)
Transformed	0 ha (0.0 of site%	3 223 ha (1.14%)

The total number of hectares within 30 km of a point is 282743 ha.

Other renewable energy projects within 30 km of the current site are as follows:

EIA Reference No	Technology	Status of application
12/12/20/2320/4	Solar PV	Approved
12/12/20/2502	Solar PV	Approved
12/12/20/2320/2	Solar PV	Approved
12/12/20/2501	Solar PV	Approved
14/12/16/3/3/1/454	Solar PV	Approved
12/12/20/2503	Solar PV	Approved
12/12/20/1722	Solar PV	Approved
14/12/16/3/3/2/766	Solar PV	Approved
14/12/16/3/3/2/579/1	Solar PV	Approved
12/12/20/2320	Solar PV	Approved
12/12/20/2320/5	Solar PV	Approved
14/12/16/3/3/2/767	Solar PV	Approved
14/12/16/3/3/2/765	Solar PV	Approved
14/12/16/3/3/2/579	Solar PV	Approved

The exact areas for each of these projects is now known, but an estimate of 2500 ha is made for the total footprint of the combined projects. It is also assumed that similar land cover classes are affected as for the current project. The outcomes of the analysis of possible impacts on spatial extent are as follows:

1. Within 30 km of the current project, 96.4% of the landscape (272593 ha) is still in a natural state.
2. The loss of habitat predicted to occur due to the current project is 0.07% of the remaining natural habitat within 30 km of the current site. This is negligible.
3. A maximum of 0.92% of the remaining natural habitat within 30 km of the current site is potentially affected by all combined projects on the renewable energy database. This total cumulative spatial effect is small.

Conclusions

In conclusion, the proposed amendment of the Environmental Authorisation to extend the commencement period will have no implications for the original assessment. They will not change the potential impacts. The baseline conditions have also not changed; therefore, the original assessment is valid. It is recommended that the amendment to the extension of the commencement period be approved. Revised mitigation measures are proposed to align with current best practice.

The cumulative impact due to the proposed current project is negligible.

Yours faithfully,

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Dr David Hoare
Director