AVIFAUNAL SPECIALIST STATEMENT

PART 1 EA AMENDMENT APPLICATION - SPECIALIST STATEMENT: AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION FOR THE PROPOSED 75MW MIERDAM PHOTOVOLTAIC (PV) SOLAR ENERGY FACILITY (SEF), LOCATED NEAR PRIESKA IN THE NORTHERN CAPE PROVINCE (DFFE REFERENCE NO.: 12/12/20/2320/2/1).

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Expertise of Specialist

Curriculum vitae: Chris van Rooyen

Profession/Specialisation	:	Avifaunal Specialist
Highest Qualification	:	BA LLB
Nationality	:	South African
Years of experience	:	26 years

Key Experience

Chris van Rooyen has decades of experience in the assessment of avifaunal interactions with industrial infrastructure. He was employed by the Endangered Wildlife Trust as head of the Eskom-EWT Strategic Partnership from 1996 to 2007, which has received international acclaim as a model of co-operative management between industry and natural resource conservation. He is an acknowledged global expert in this field and has consulted in South Africa, Namibia, Botswana, Lesotho, New Zealand, Texas, New Mexico and Florida. He also has extensive project management experience and he has received several management awards from Eskom for his work in the Eskom-EWT Strategic Partnership. He is the author and/or co-author of 17 conference papers, co-author of two book chapters, several research reports and the current best practice guidelines for avifaunal monitoring at wind farm sites. He has completed around 130 power line assessments; and has to date been employed as specialist avifaunal consultant on more than 50 renewable energy generation projects. He has also conducted numerous risk assessments on existing power lines infrastructure. He also works outside the electricity industry and he has done a wide range of bird impact assessment studies associated with various residential and industrial developments. He serves on the Birds and Wind Energy Specialist Group which was formed in 2011 to serve as a liaison body between the ornithological community and the wind industry.

Expertise of Specialist

Curriculum vitae: Albert Froneman

Profession/Specialisation	:	Avifaunal Specialist
Highest Qualification	:	MSc (Conservation Biology)
Nationality	:	South African
Years of experience	:	24 years

Key Qualifications

Albert Froneman **(**Pr.Sci.Nat) has more than 18 years' experience in the management of avifaunal interactions with industrial infrastructure. He holds a M.Sc. degree in Conservation Biology from the University of Cape Town. He managed the Airports Company South Africa (ACSA) – Endangered Wildlife Trust Strategic Partnership from 1999 to 2008 which has been internationally recognized for its achievements in addressing airport wildlife hazards in an environmentally sensitive manner at ACSA's airports across South Africa. Albert is recognized worldwide as an expert in the field of bird hazard management on airports and has worked in South Africa, Swaziland, Botswana, Namibia, Kenya, Israel, and the USA. He has served as the vice chairman of the International Bird Strike Committee and has presented various papers at international conferences and workshops. At present he is consulting to ACSA with wildlife hazard management on all their airports. He also an accomplished specialist ornithological consultant outside the

aviation industry and has completed a wide range of bird impact assessment studies. He has co-authored many avifaunal specialist studies and pre-construction monitoring reports for proposed renewable energy developments across South Africa. He also has vast experience in using Geographic Information Systems to analyse and interpret avifaunal data spatially and derive meaningful conclusions. Since 2009 Albert has been a registered Professional Natural Scientist (reg. nr 400177/09) with The South African Council for Natural Scientific Professions, specialising in Zoological Science.

1 BACKGROUND

South Africa Mainstream Renewable Power Mierdam (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.: 12/12/20/2320/2/1).

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

The Mierdam Photovoltaic (PV) Solar Energy Facility is to be constructed within the project site which comprises the following farm portion:

- Portion 1 of Kaffirs Kolk No. 118

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
- Cables/strings to connect PV arrays to DC to AC inverters
- On site substation (IPP Portion of the shared on-site substation)

See Figure 1 and 2 for the location and lay-out of the proposed PV development.

Mainstream is now proposing to undertake a Part 1 EA Amendment process to extend the validity of the Environmental Authorisation by an additional 3 years.

The key motivating factor for the request to amend the EA validity period, is to ensure that the applicant has a project that is compliant with the requirements of the Department of Mineral Resources and Energy (“DMRE”) (previously the Department of Energy) Renewable Energy Independent Power Producer Procurement (“REIPPP”) Programme, specifically with regards to the requirement for a valid EA. Due to various reasons, outside of the Applicant’s control, the planned announcements and roll-out of bidding rounds have not occurred as previously planned for. As a result, the REIPPP Programme has been delayed, resulting

in the project not yet being selected as a preferred bidder, further necessitating the need for the EA validity period to be extended.

Extension of the validity of the EA will ensure that the EA remains valid for the undertaking of the authorised activities such that the project can be bid into future bidding rounds of the REIPPP Programme or similar programmes.

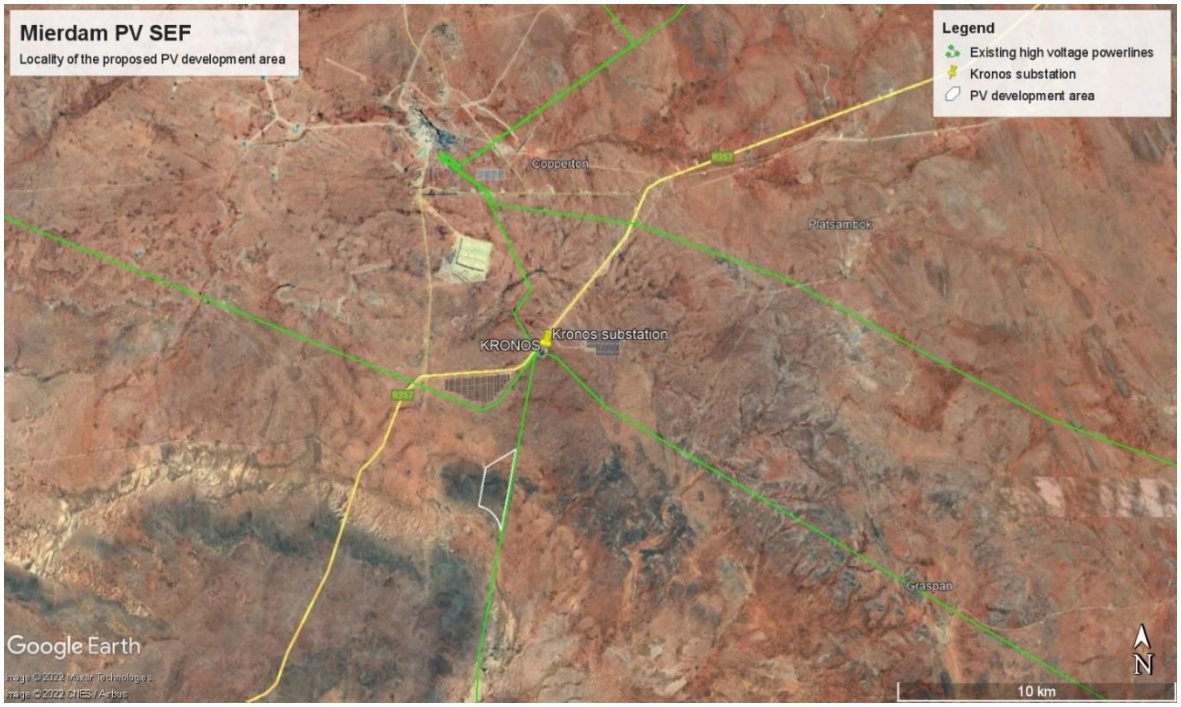

Figure 1: The locality of the proposed development area, showing the location of the Kronos Substation and existing high voltage powerlines.

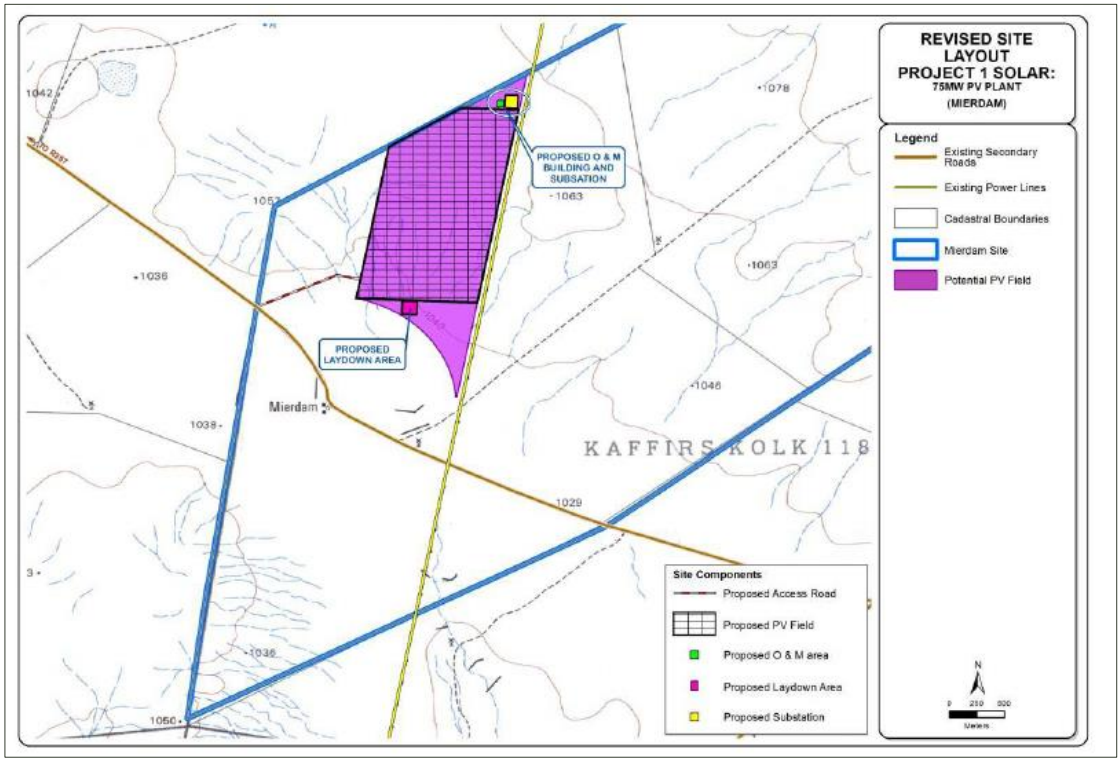

Figure 2: The layout of the proposed Mierdam PV development.

2 TERMS OF REFERENCE

The following terms of reference are applicable to this specialist comment:

- Undertake a site visit to the authorised Mierdam PV project site and compile a specialist comment/ statement addressing the following:

    - The implications of the proposed amendment, if any, in terms of the potential impacts within your area of expertise;
    - An investigation to determine if the baseline environment has changed significantly since the original assessment, which was conducted approximately 10 years ago. This will be required for the proposed amendment to extend the validity period of the EA.
    - A statement as to whether or not the proposed amendments will result in an increased level or change in the nature of the impact, which was initially assessed and considered when application was made for the environmental authorisation.
    - 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.

3 FINDINGS OF PREVIOUS ASSESSMENTS

The key findings in the original avifaunal impact assessment report by Paul da Cruz (SiVEST 2013) are summarised below:

- The climate of the study area has important limiting influence on the biota on the site. The very low rainfall, coupled with significant extremes in average temperatures entails that the area is a hostile environment that is not suitable for a high density of biota, including bird life. Naturally- occurring surface water is completely absent from the site, and there is not an abundance of plant or faunal life to support large or diverse bird populations.
- Rocky Karoo scrubland plains is the predominant natural habitat type that occurs across most of the site. Very low Karoo-type scrubveld vegetation characterised by a very low density of vegetation occurs on very flat to gently undulating plains. These plains are often very rocky, with a sparse density of open ground, with very little grass cover. These plains appear to be very important for the game bird species on the site as both Korhaan species and the Ludwig's Bustards recorded on the site were mostly encountered in this habitat type. They are also inhabited by a number of smaller bird species typically encountered in such vegetation all over the Karoo.
- Sandy Bushmanland grassy Shrubland habitat type appears to be exclusively associated with areas of sandy soils. These sandy soils appear to be of alluvial origin, and provide suitable rooting areas for a few grass species that occur, including a few Stipagrostis species and some Eragrostis species. Karoo-type scrubs also occur in this habitat type, but are typically larger in size than the scrubs found on the above habitat type. There is typically a much greater vegetation cover in this habitat type. These sandy grassy plains also appear to be well-utilised by both Korhaan species encountered on the site, as well as a similar range of smaller bird species typical of the Karoo.
- A number of ephemeral drainage lines are present across the site. In places these drainage lines are no more than a poorly defined valley bottom with no discernible vegetation change, but some drainage lines are characterised by taller shrubs that the surrounding Karoo plains, and are thus important. Due to this factor, the drainage lines are likely to support a slightly higher density of bird species.

- Although not a habitat as such, other human-related infrastructure that occurs site is very important for a number of bird species, particularly as roosting, perching and even nesting areas. The Cuprum - Karoo 1 66kV overhead line (OHL) traverses the site, and it is well-utilised by a number of species for perching and roosting, including Pied Crows, and some raptor species. There appears to be evidence from information provided by local farmers and from birds sightings on the site that certain raptors utilise the existing power lines as 'corridors' along which to move, and also as roosting perches when visiting the area.
- Most of the Mierdam site consists of rocky Karoo scrubveld and is thus not highly sensitive. Apart from the suite of birds typically associated with the rocky low scrubveld, there are two areas on the Mierdam site which were identified to be associated with higher avifaunal diversity and density, due primarily to availability of water, cover and foraging opportunities. These areas are the Mierdam farmstead, and a feedlot and windmill in the centre of the site where concentration of bushier shrub vegetation and a number of watering points exist. **Both of these areas are avoided by the proposed infrastructure, with the PV development area being located in the western part of the site. Thus, none of the PV infrastructure is located in areas of particular sensitivity and thus relocating the infrastructure would appear to be unnecessary.**
- No detailed bird monitoring has been undertaken on the site to establish trends of species occurrence in terms of species-specific spatial distribution and seasonality. There is thus insufficient data on which to confidently assess the likely impacts of the proposed development on the priority species that occur in the study area.
- A number of Red Data species could occur at the site. These are listed in Table 1:

Table 1: Red Data species potentially occurring at the proposed Mierdam PV site (SiVEST 2013)

Species	***Scientific Name***	**Conservation Status (Taylor *et al.* 2015)**	**Recorded on the site?**
Common name	**Scientific name**	**Category**	
White-backed Vulture	*Gyps africanus*	Critically Endangered	
Secretarybird	*Sagittarius serpentarius*	Vulnerable	Y
Tawny Eagle	*Aquila rapax*	Endangered	
Martial Eagle	*Polemaetus bellicosus*	Endangered	
Lanner Falcon	*Falco biarmicus*	Vulnerable	
Blue Crane	*Anthropoides paradiseus*	Near threatened	
Kori Bustard	*Ardeotis kori*	Near threatened	
Ludwig's Bustard	*Neotis ludwigii*	Endangered	Y
Sclater's Lark	*Spizocorys sclateri*	Near Threatened	Y
Red Lark	*Certhilauda burra*	Vulnerable	

- A number of overall impact tables have been prepared in terms of three primary impacts that the solar components could exert on the avifauna on the site. These are presented below.

Loss of Physical Habitat

IMPACT TABLE		
Environmental Parameter	Loss of / transformation of habitat associated with the proposed solar plant	
Issue/Impact/Environmental Effect/Nature	The construction of the PV arrays could result in loss of physical habitat for birds in the study area, thus potentially having an impact on the occurrence of birds on the site.	
Extent	Site (1)	
Probability	Definite (4)	
Reversibility	Partly reversible (2)	
Irreplaceable loss of resources	Marginal loss of resources (2)	
Duration	Long term (3)	
Cumulative effect	Low cumulative impact (2)	
Intensity/magnitude	Medium (2)	
Significance Rating	**Medium Negative Impact**	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	1	1
Probability	4	4
Reversibility	2	2
Irreplaceable loss	2	2
Duration	3	3
Cumulative effect	2	2
Intensity/magnitude	2	2
Significance rating	-28 (low negative)	- 28 (low negative)
Mitigation measures	Due to the limitations of this study described in various earlier parts of this report, it is critical that a full seasonal bird monitoring programme be reinstated on the site (the pre-construction bird monitoring was terminated prematurely at the request of the proponent due to uncertainties relating to the proposed SKA project). This monitoring would be critical to acquire a better understanding of the trends relating to the occurrence on the site of the priority species. The pre-construction monitoring should comply with the best practice guidelines for avian monitoring.	

Disturbance Factor / Creation of Barrier effect

IMPACT TABLE		
Environmental Parameter	Disturbance Factor / Creation of Barrier effect	
Issue/Impact/Environmental Effect/Nature	The construction of the PV arrays could result in disturbance of birds and create a barrier effect that could affect the continued presence of sensitive species in the area, and which could affect the movement of birds onto the, and within the site.	
Extent	Local / District (2)	
Probability	Possible (2)	
Reversibility	Partly reversible (2)	
Irreplaceable loss of resources	Marginal loss of resources (2)	
Duration	Long term (3)	
Cumulative effect	Low cumulative impact (2)	
Intensity/magnitude	Medium (2)	
Significance Rating	**Medium Negative Impact**	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	2	2
Probability	2	2
Reversibility	2	2
Irreplaceable loss	2	2
Duration	3	3
Cumulative effect	2	2
Intensity/magnitude	2	2
Significance rating	-26 (low negative)	- 26 (low negative)
Mitigation measures	Due to the limitations of this study described in various earlier parts of this report, it is critical that a full seasonal bird monitoring programme be reinstated on the site (the pre-construction bird monitoring was terminated prematurely at the request of the proponent due to uncertainties relating to the proposed SKA project). This monitoring would be critical to acquire a better understanding of the trends relating to the occurrence on the site of the priority species. The pre-construction monitoring should comply with the best practice guidelines for avian monitoring.	

4 SUBSEQUENT ASSESSMENTS

The site was inspected on 05 October 2022 to assess whether the conditions at the site have changed materially from when the original assessment was done in March 2012. The development area was inspected with a 4 x 4 vehicle and on foot for one day. Photographs of the development area were taken to record the habitat and a bird list was compiled.

5 RECEIVING ENVIRONMENT

5.1 DFFE National Screening Tool

The project development area is classified as **High** sensitivity for avifauna, according to the DFFE online screening tool. The development sites contain confirmed habitat for species of conservation concern (SCC), as defined in the Protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial animal species (Government Gazette No 43855, 30 October 2020)[1], namely listed on the IUCN Red List of Threatened Species or South Africa's National Red List website as Critically Endangered, Endangered, Vulnerable, Near threatened or Data Deficient. The classification of High sensitivity is linked to the potential occurrence of Lanner Falcon (Regionally Vulnerable) (Figure 3).

The occurrence of SCC was confirmed during the original surveys in March 2012. Ludwig's Bustard, Secretarybird (Globally Endangered, Regionally Vulnerable) and Sclater's Lark (Globally and Regionally Near threatened) were recorded at the site. The subsequent site visit in October 2022 confirmed that the habitat has not changed and that habitat for the above listed SCC, as well as the other SCC listed in Table 1, and Lappet-faced Vulture *Torgos tracheliotis* (Globally and Regionally Endangered) exists at the development area. This classification is assessed to be accurate as far as the potential presence of SCC is concerned, based on actual conditions recorded on the ground during the site visits in March 2012, and the subsequent site visit conducted in October 2022.

See Appendix 1 for the Site Sensitivity Report

[1] The wind theme is only applicable to developments that are located in Renewable Energy Development Zones.

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY

Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Falco biarmicus
Medium	Aves-Neotis ludwigii

Figure 3: The classification of the Project Site according to the animal species theme in the DFFE National Screening Tool. The High sensitivity is linked to the possible occurrence of Lanner Falcon *Falco biarmicus* (Regionally Vulnerable).

5.2 Avifauna

Bird distribution data of the South African Bird Atlas 2 (SABAP 2) was obtained from the University of Cape Town (2022), as a means to ascertain which species occur within the broader area i.e., within a block consisting of 8 pentads where the proposed project development area will be located (Figure 4). A pentad grid cell covers 5 minutes of latitude by 5 minutes of longitude (5'× 5'). Each pentad is approximately 8 × 7.6

km. From 2007 to date, a total of 68 full protocol lists (i.e., surveys lasting a minimum of two hours each) have been completed for this area. In addition, 36 ad hoc protocol lists (i.e., surveys lasting less than two hours but still yielding valuable data) have been completed. The broader area was selected on the basis of the number of checklists that had been completed, in order to get a more representative view of the avifauna that could occur at the project site.

According to the SABAP2 projects, a total of 152 species occurs in the broader area (Table 1). The species that were recorded on and around the project development area during the site visit on 5 October 2022 are listed in Table 1.

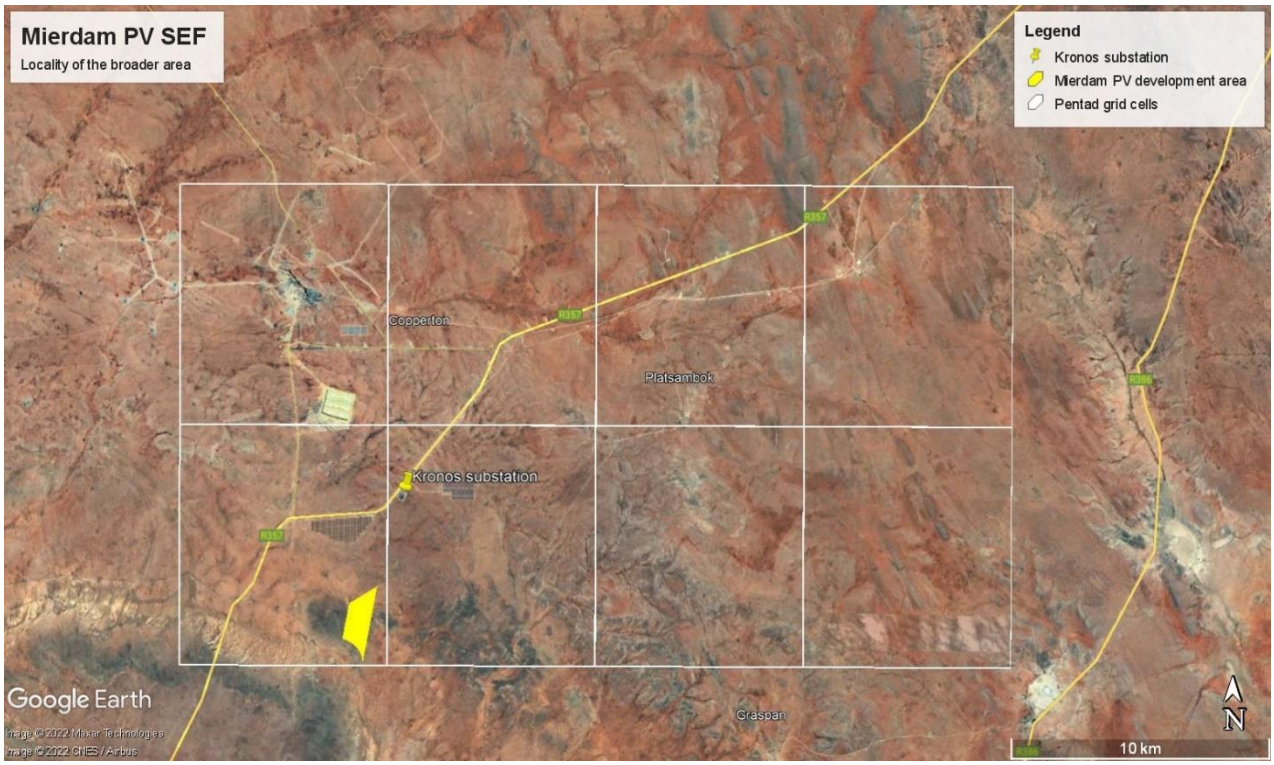

Figure 4: The broader area where the project development area is located.

Table 2: Avifauna recorded by SABAP 2 and during surveys in the broader area in March 2012 and at the Mierdam development area in October 2022. Species of conservation concern (SCC) are shaded in green

Species name	Scientific name	Full protocol reporting rate	Ad hoc protocol reporting rate	Global status	Regional status	Recorded during monitoring in the broader area 2012	Recorded at Mierdam 2022
Acacia Pied Barbet	*Tricholaema leucomelas*	54.41	11.11	-	-	x	
African Black Swift	*Apus barbatus*	0.00	2.78	-	-	x	
African Hoopoe	*Upupa africana*	17.65	0.00	-	-		
African Palm Swift	*Cypsiurus parvus*	1.47	0.00	-	-		
African Pipit	*Anthus cinnamomeus*	10.29	5.56	-	-	x	
African Red-eyed Bulbul	*Pycnonotus nigricans*	25.00	2.78	-	-	x	
African Sacred Ibis	*Threskiornis aethiopicus*	1.47	0.00	-	-		
Alpine Swift	*Tachymarptis melba*	5.88	0.00	-	-		
Ant-eating Chat	*Myrmecocichla formicivora*	66.18	25.00	-	-	x	
Ashy Tit	*Melaniparus cinerascens*	19.12	0.00	-	-		
Barn Swallow	*Hirundo rustica*	38.24	5.56	-	-	x	

Species name	Scientific name	Full protocol reporting rate	Ad hoc protocol reporting rate	Global status	Regional status	Recorded during monitoring in the broader area 2012	Recorded at Mierdam 2022
Black-chested Prinia	*Prinia flavicans*	72.06	11.11	-	-	x	x
Black-chested Snake Eagle	*Circaetus pectoralis*	10.29	2.78	-	-	x	
Black-eared Sparrow-Lark	*Eremopterix australis*	33.82	5.56	-	-		
Black-faced Waxbill	*Brunhilda erythronotos*	2.94	0.00	-	-		
Black-headed Canary	*Serinus alario*	2.94	5.56	-	-		
Blacksmith Lapwing	*Vanellus armatus*	10.29	2.78	-	-	x	
Black-throated Canary	*Crithagra atrogularis*	25.00	2.78	-	-	x	
Black-winged Kite	*Elanus caeruleus*	0.00	2.78	-	-		
Black-winged Stilt	*Himantopus himantopus*	2.94	8.33	-	-		
Bokmakierie	*Telophorus zeylonus*	60.29	0.00	-	-	x	x
Booted Eagle	*Hieraaetus pennatus*	7.35	0.00	-	-		
Bradfield's Swift	*Apus bradfieldi*	2.94	0.00	-	-		
Buffy Pipit	*Anthus vaalensis*	0.00	5.56	-	-		
Burchell's Courser	*Cursorius rufus*	1.47	0.00	-	VU		
Cape Bunting	*Emberiza capensis*	16.18	0.00	-	-		
Cape Crow	*Corvus capensis*	8.82	0.00	-	-		
Cape Penduline Tit	*Anthoscopus minutus*	11.76	8.33	-	-		x
Cape Robin-Chat	*Cossypha caffra*	7.35	0.00	-	-		
Cape Shoveler	*Spatula smithii*	1.47	0.00	-	-		
Cape Sparrow	*Passer melanurus*	77.94	16.67	-	-	x	x
Cape Teal	*Anas capensis*	2.94	0.00	-	-		
Cape Turtle Dove	*Streptopelia capicola*	61.76	0.00	-	-	x	
Cape Vulture	*Gyps coprotheres*	0.00	2.78	VU	EN		
Cape Wagtail	*Motacilla capensis*	36.76	5.56	-	-	x	
Cape Weaver	*Ploceus capensis*	1.47	0.00	-	-		
Cape White-eye	*Zosterops virens*	1.47	0.00	-	-		
Capped Wheatear	*Oenanthe pileata*	33.82	22.22	-	-	x	
Chat Flycatcher	*Melaenornis infuscatus*	70.59	16.67	-	-	x	x
Chestnut-vented Warbler	*Curruca subcoerulea*	36.76	0.00	-	-	x	
Cloud Cisticola	Cisticola textrix	0.00	0.00	-	-		x
Common Buzzard	*Buteo buteo*	2.94	0.00	-	-		
Common Greenshank	*Tringa nebularia*	1.47	0.00	-	-		
Common Ostrich	*Struthio camelus*	1.47	2.78	-	-	x	
Common Quail	*Coturnix coturnix*	1.47	0.00	-	-		
Common Sandpiper	*Actitis hypoleucos*	1.47	0.00	-	-		
Common Swift	*Apus apus*	13.24	0.00	-	-	x	
Crested Barbet	*Trachyphonus vaillantii*	1.47	0.00	-	-		
Crowned Lapwing	*Vanellus coronatus*	10.29	2.78	-	-		
Desert Cisticola	*Cisticola aridulus*	42.65	2.78	-	-	x	x
Diederik Cuckoo	*Chrysococcyx caprius*	7.35	2.78	-	-		
Double-banded Courser	*Rhinoptilus africanus*	32.35	2.78	-	-	x	
Dusky Sunbird	*Cinnyris fuscus*	26.47	5.56	-	-	x	
Eastern Clapper Lark	*Mirafra fasciolata*	63.24	11.11	-	-	x	
Egyptian Goose	*Alopochen aegyptiaca*	23.53	2.78	-	-	x	
European Bee-eater	*Merops apiaster*	0.00	0.00				
Fairy Flycatcher	*Stenostira scita*	5.88	0.00	-	-		
Familiar Chat	*Oenanthe familiaris*	48.53	16.67	-	-	x	x
Fawn-colored Lark	*Calendulauda africanoides*	41.18	5.56	-	-	x	
Fiscal Flycatcher	*Melaenornis silens*	17.65	2.78	-	-	x	
Greater Kestrel	*Falco rupicoloides*	29.41	11.11	-	-	x	

Species name	Scientific name	Full protocol reporting rate	Ad hoc protocol reporting rate	Global status	Regional status	Recorded during monitoring in the broader area 2012	Recorded at Mierdam 2022
Greater Striped Swallow	*Cecropis cucullata*	38.24	5.56	-	-	x	
Grey Tit	*Melaniparus afer*	4.41	0.00	-	-		
Grey-backed Cisticola	*Cisticola subruficapilla*	23.53	0.00	-	-	x	
Grey-backed Sparrow-Lark	*Eremopterix verticalis*	54.41	5.56	-	-	x	
Hadada Ibis	*Bostrychia hagedash*	23.53	2.78	-	-	x	
Helmeted Guineafowl	*Numida meleagris*	25.00	0.00	-	-	x	
House Sparrow	*Passer domesticus*	41.18	11.11	-	-	x	
Jackal Buzzard	*Buteo rufofuscus*	2.94	0.00	-	-		
Kalahari Scrub Robin	*Cercotrichas paena*	50.00	0.00	-	-	x	
Karoo Chat	*Emarginata schlegelii*	5.88	0.00	-	-		
Karoo Eremomela	*Eremomela gregalis*	2.94	0.00	-	-		
Karoo Korhaan	*Eupodotis vigorsii*	73.53	36.11	-	NT	x	
Karoo Long-billed Lark	*Certhilauda subcoronata*	36.76	0.00	-	-	x	
Karoo Prinia	*Prinia maculosa*	1.47	0.00	-	-		
Karoo Scrub Robin	*Cercotrichas coryphoeus*	51.47	11.11	-	-	x	x
Karoo Thrush	*Turdus smithi*	14.71	0.00	-	-		
Kittlitz's Plover	*Charadrius pecuarius*	1.47	0.00	-	-		
Kori Bustard	*Ardeotis kori*	16.18	2.78	NT	NT		
Lanner Falcon	*Falco biarmicus*	5.88	0.00	-	VU		
Lappet-faced Vulture	*Torgos tracheliotos*	1.47	0.00	EN	EN		
Large-billed Lark	*Galerida magnirostris*	16.18	11.11	-	-	x	
Lark-like Bunting	*Emberiza impetuani*	69.12	25.00	-	-	x	x
Laughing Dove	*Spilopelia senegalensis*	41.18	5.56	-	-	x	
Layard's Warbler	*Curruca layardi*	5.88	0.00	-	-		
Lesser Grey Shrike	*Lanius minor*	5.88	2.78	-	-		
Lesser Kestrel	*Falco naumanni*	0.00	5.56	-	-		
Little Grebe	*Tachybaptus ruficollis*	2.94	0.00	-	-		
Little Swift	*Apus affinis*	30.88	0.00	-	-	x	
Long-billed Crombec	*Sylvietta rufescens*	25.00	0.00	-	-	x	
Ludwig's Bustard	*Neotis ludwigii*	41.18	16.67	EN	EN	x	
Martial Eagle	*Polemaetus bellicosus*	2.94	5.56	EN	EN		
Mountain Wheatear	*Myrmecocichla monticola*	13.24	8.33	-	-	x	
Namaqua Dove	*Oena capensis*	36.76	8.33	-	-	x	
Namaqua Sandgrouse	*Pterocles namaqua*	50.00	5.56	-	-	x	
Nicholson's Pipit	*Anthus nicholsoni*	17.65	5.56	-	-		
Northern Black Korhaan	*Afrotis afraoides*	80.88	25.00	-	-	x	
Orange River White-eye	*Zosterops pallidus*	0.00	2.78	-	-		
Pale Chanting Goshawk	*Melierax canorus*	82.35	22.22	-	-	x	x
Pale-winged Starling	*Onychognathus nabouroup*	4.41	0.00	-	-		
Pied Crow	*Corvus albus*	83.82	33.33	-	-	x	x
Pied Starling	*Lamprotornis bicolor*	1.47	0.00	-	-		
Plain-backed Pipit	*Anthus leucophrys*	2.94	0.00	-	-		
Pririt Batis	*Batis pririt*	25.00	2.78	-	-	x	
Pygmy Falcon	*Polihierax semitorquatus*	10.29	2.78	-	-	x	
Quailfinch	*Ortygospiza atricollis*	1.47	0.00	-	-	x	
Red-backed Shrike	*Lanius collurio*	1.47	0.00	-	-		
Red-billed Quelea	*Quelea quelea*	5.88	0.00	-	-	x	
Red-billed Teal	*Anas erythrorhyncha*	1.47	0.00	-	-		
Red-capped Lark	*Calandrella cinerea*	11.76	2.78	-	-	x	
Red-eyed Dove	*Streptopelia semitorquata*	2.94	0.00	-	-		

Species name	Scientific name	Full protocol reporting rate	Ad hoc protocol reporting rate	Global status	Regional status	Recorded during monitoring in the broader area 2012	Recorded at Mierdam 2022
Red-faced Mousebird	*Urocolius indicus*	7.35	0.00	-	-	x	
Red-headed Finch	*Amadina erythrocephala*	35.29	5.56	-	-	x	
Rock Dove	*Columba livia*	4.41	0.00	-	-		
Rock Kestrel	*Falco rupicolus*	11.76	11.11	-	-		
Rock Martin	*Ptyonoprogne fuligula*	52.94	11.11	-	-	x	
Rufous-cheeked Nightjar	*Caprimulgus rufigena*	4.41	0.00	-	-		
Rufous-eared Warbler	*Malcorus pectoralis*	86.76	13.89	-	-	x	
Sabota Lark	*Calendulauda sabota*	79.41	30.56	-	-	x	x
Scaly-feathered Weaver	*Sporopipes squamifrons*	38.24	5.56	-	-	x	x
Sclater's Lark	*Spizocorys sclateri*	10.29	0.00	NT	NT	x	
Secretarybird	*Sagittarius serpentarius*	7.35	5.56	EN	VU	x	
Short-toed Rock Thrush	*Monticola brevipes*	2.94	2.78	-	-		
Sickle-winged Chat	*Emarginata sinuata*	16.18	2.78	-	-		
Sociable Weaver	*Philetairus socius*	67.65	27.78	-	-	x	
South African Shelduck	*Tadorna cana*	11.76	2.78	-	-		
Southern Fiscal	*Lanius collaris*	57.35	16.67	-	-	x	
Southern Grey-headed Sparrow	*Passer diffusus*	4.41	0.00	-	-	x	
Southern Masked Weaver	*Ploceus velatus*	60.29	8.33	-	-	x	
Southern Red Bishop	*Euplectes orix*	1.47	0.00	-	-	x	x
Speckled Pigeon	*Columba guinea*	54.41	2.78	-	-	x	
Spike-heeled Lark	*Chersomanes albofasciata*	79.41	19.44	-	-	x	
Spotted Eagle-Owl	*Bubo africanus*	20.59	2.78	-	-	x	
Spotted Flycatcher	*Muscicapa striata*	1.47	0.00	-	-		
Spotted Thick-knee	*Burhinus capensis*	20.59	0.00	-	-	x	
Spur-winged Goose	*Plectropterus gambensis*	5.88	0.00	-	-		
Stark's Lark	*Spizocorys starki*	32.35	5.56	-	-		
Three-banded Plover	*Charadrius tricollaris*	4.41	0.00	-	-		
Tractrac Chat	*Emarginata tractrac*	20.59	0.00	-	-	x	x
Verreaux's Eagle	*Aquila verreauxii*	2.94	2.78	-	VU		
Wattled Starling	*Creatophora cinerea*	2.94	2.78	-	-		
Western Barn Owl	*Tyto alba*	2.94	0.00	-	-		
White-backed Mousebird	*Colius colius*	29.41	0.00	-	-	x	
White-bellied Sunbird	*Cinnyris talatala*	1.47	0.00	-	-		
White-browed Sparrow-Weaver	*Plocepasser mahali*	51.47	8.33	-	-	x	
White-necked Raven	*Corvus albicollis*	1.47	0.00	-	-		
White-rumped Swift	*Apus caffer*	23.53	2.78	-	-	x	
White-throated Canary	*Crithagra albogularis*	50.00	2.78	-	-	x	x
White-throated Swallow	*Hirundo albigularis*	1.47	0.00	-	-		
Yellow Canary	*Crithagra flaviventris*	39.71	16.67	-	-	x	
Yellow-bellied Eremomela	*Eremomela icteropygialis*	44.12	22.22	-	-		x
Temminck's Courser	*Cursorius temminckii*	0.00	0.00	-	-		

6 CUMULATIVE IMPACTS

Cumulative effects are commonly understood to be impacts from different projects that combine to result in significant change in an area, which could be larger than the sum of all the individual impacts. The assessment of cumulative effects therefore needs to consider all renewable energy projects within a 30 km

radius that have received an EA or are in process at the time of starting the environmental impact process, as well as the proposed Mierdam SEF. There are currently forty-one (41) renewable energy projects authorised, operational or in process within a 30 km radius around the proposed Mierdam SEF (excluding those who have been withdrawn, lapsed or refused) (Table 3 and Figure 5). The projects were identified using the latest (2022) Renewable Energy EIA Application Database for SA from the Department of Fisheries, Forestry and Environment (DFFE).

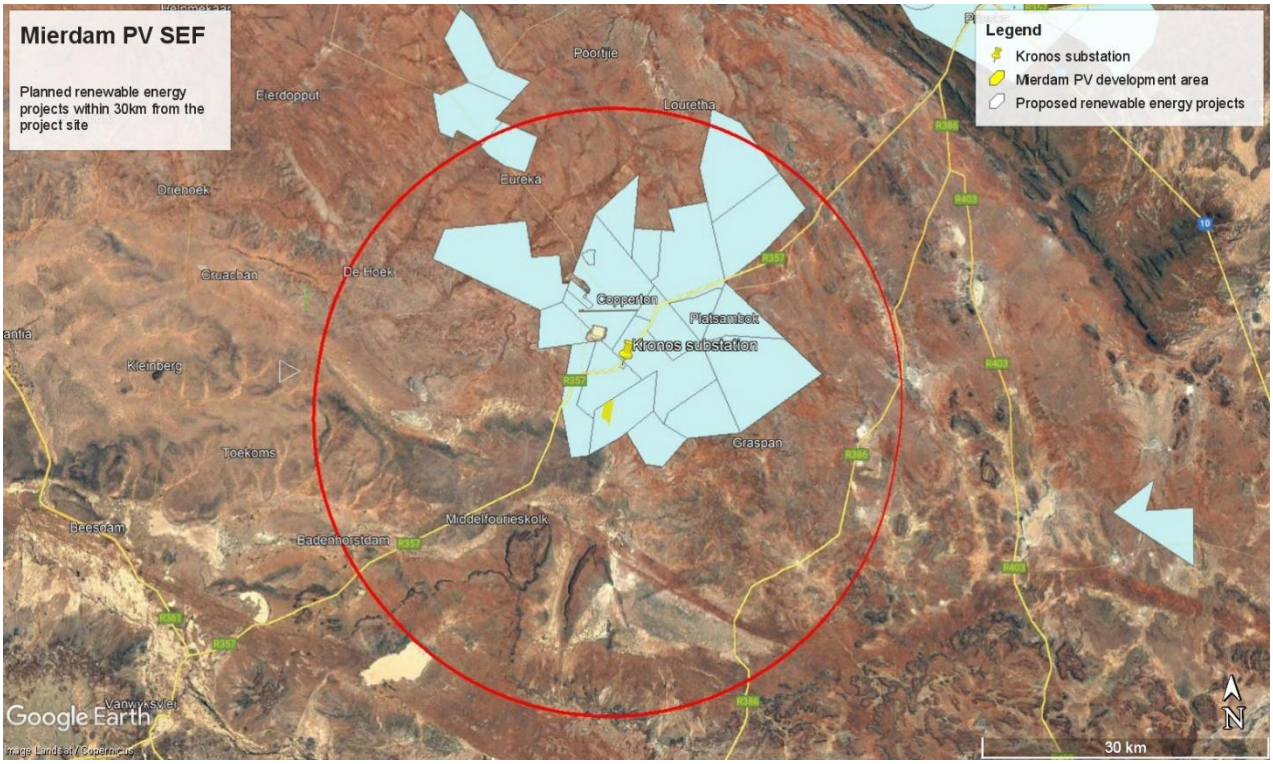

Figure 5: The planned renewable energy project land parcels within a 30km radius around the proposed Mierdam PV project.

Table 3: Red Data species potentially occurring at the proposed Mierdam PV site (SiVEST 2013)

Name	DFFE registration	Status
8 Infinite energy (PTY) LTR 140mw wind energy facility near Copperton, Northern Cape Province	12/12/20/2099	Approved
Construction of a 40MW Solar Photovoltaic Facility on Mierdam Farm near Prieska, within the Siyathemba Local Municipality in the Northern Cape Province	12/12/20/2320/2	Approved
Proposed Helena Solar 3: 75mW Solar pV Energy Facility near Copperton within Siyathemba Local Municipality in Northern Cape Province	14/12/16/3/3/2/767	Approved
Proposed Helena Solar 2: 75 mW Solar pV Energy Facility near Copperton, Northern Cape Province	14/12/16/3/3/2/766	Approved
Proposed Helena Solar 3: 75mW Solar pV Energy Facility near Copperton within Siyathemba Local Municipality in Northern Cape Province	14/12/16/3/3/2/765	Approved
Proposed PV2 Photovoltaic (Solar) energy facility on farm Klipgats Pan near Cooperton, Northern Cape Province	14/12/16/3/3/2/491	Approved

Name	DFFE registration	Status
Proposed PV6 energy plants o Farm Klipgats Pan near Copperton, Northern Cape Province	14/12/16/3/3/2/490	In process
Proposed PV5 energy plants o Farm Klipgats Pan near Copperton, Northern Cape Province	14/12/16/3/3/2/489	In process
Proposed PV4 energy plants o Farm Klipgats Pan near Copperton, Northern Cape Province	14/12/16/3/3/2/488	In process
Proposed PV3 energy plants o Farm Klipgats Pan near Copperton, Northern Cape Province	14/12/16/3/3/2/487	In process
Proposed PV2 energy plants o Farm Klipgats Pan near Copperton, Northern Cape Province	14/12/16/3/3/2/486	In process
100MW Photovoltaic (PV) Facility on portion 4 of the farm No 117, farm Klipgats Pan, Copperton, Northern Cape Province	12/12/20/2501	Approved
Proposed establishment of a PV Solar facility (Plamtsjambok) in Prieska, Siyathemba Local Municipality, Northern Cape Province	12/12/20/2320/3	In process
Construction of a Solar Photovoltaic Facility near Prieska, within the Siyathemba Local Municipality in the Northern Cape Province	12/12/20/2320	Approved
Construction of a 75MW Solar Photovoltaic Facility on the western portion of the Platsjambok Farm (Platsjambok West) near Prieska, within the Siyathemba Local Municipality in the Northern Cape Province	12/12/20/2320/5	Approved
Proposed RE Capital 14 (Pty) Ltd development within! Kai Garib LM	14/12/16/3/3/2/708	In process
Proposed PV11 PV solar energy plant on farm Hoekplaas, near Copperton, Northern Cape Province	14/12/16/3/3/2/502	In process
Proposed PV10 energy plants o Farm Hoekplaas near Copperton, Northern Cape Province	14/12/16/3/3/2/501	In process
Proposed PV9 energy plants o Farm Hoekplaas near Copperton, Northern Cape Province	14/12/16/3/3/2/500	In process
Proposed PV8 energy plants on Farm Hoekplaas near Copperton, Northern Cape Province	14/12/16/3/3/2/499	In process
Proposed PV7 energy plants o Farm Hoekplaas near Copperton, Northern Cape Province	14/12/16/3/3/2/498	In process
Proposed PV6 energy plants o Farm Hoekplaas near Copperton, Northern Cape Province	14/12/16/3/3/2/497	In process
Proposed PV5 energy plants o Farm Hoekplaas near Copperton, Northern Cape Province	14/12/16/3/3/2/496	In process
Proposed PV4 energy plants o Farm Hoekplaas near Copperton, Northern Cape Province	14/12/16/3/3/2/495	In process
Proposed PV3 energy plants o Farm Hoekplaas near Copperton, Northern Cape Province	14/12/16/3/3/2/494	In process
Proposed PV2 energy plants on farm Hoekplaas near Copperton, Northern Cape Province	14/12/16/3/3/2/493	In process
Mulilo Sonnedix Prieska PV	12/12/20/2503	Approved

Name	DFFE registration	Status
75MW Hermanus PV3 solar energy facility and its associated infrastructureon the farm Hermansrus No 147 in the Northern Cape Province	14/12/16/3/3/2/888	In process
75MW Hermanus PV4 solar energy facility and its associated infrastructureon the farm Hermansrus No 147 in the Northern Cape Province	14/12/16/3/3/2/887	In process
Humansrus Solar PV Energy Facility (Pty) Ltd	14/12/16/3/3/2/707	In process
Proposed Garob Wind Energy fascility project near Copperton in the Northern Cape Province	14/12/16/3/3/2/279	Approved
The Proposed Garob Wind Farm To Kronos Substation, 132kv Power Line, Near Copperton, Within The Siyathemba Local Municipality, Of The Pixley Ka Seme District Municipality In The Northern Cape Province	14/12/16/3/3/1/769	Approved
Proposed Bosjesmansberg solar energy facility site near Copperton, Siyathemba Local Municipality, Northern Cape Province	14/12/16/3/3/2/579/3	Approved
Proposed Moiblox soar project within Pixley Ka Seme District Municipality, Northern Cape Province	14/12/16/3/3/2/547	In process
Proposed wind energy facility near Copperton, Northern Cape Province	12/12/20/2099	Approved
Proposed PV energy plant on farm Struisbult near Copperton, Northern Cape Province	12/12/20/2502	Approved
Proposed construction of a photovoltaic power generation facility, Prieska, Nothern Cape Province	12/12/20/1722	Approved
Proposed Badudex solar project withing Pixley Ka Seme District municipality, Northern Cape Province	14/12/16/3/3/2/546	In process
The proposed Mulilo photovoltaic solar energy plant Copperton Mine in the Northren Cape Province	14/12/16/3/3/1/454	Approved
Proposed renewable energy farm on portion 5 of farm Doonies Pan No. 106, Prieska within Siyathemba Local Municipality, Northern Cape Province	14/12/16/3/3/2/609	In process

The total affected land parcel area taken up by authorised and planned renewable energy projects within the 30 km radius, including the Mierdam PV Project is approximately 695 km². The total affected land parcel area affected by the Mierdam PV Project equates to approximately 28 km². The proposed Mierdam PV Project land parcel area thus constitute 4% of the total areas taken up by the authorised and planned renewable energy projects. The cumulative impact of the proposed Mierdam PV Project is thus anticipated to be **low**.

The total area within the 30km radius around the proposed Mierdam PV Project equates to about 3036km² of similar habitat (excluding developed areas). The total combined size of the land parcels potentially affected by renewable energy projects will equate to approximately 23% of the available untransformed habitat in the 30km radius. Assuming that all the projects are actually constructed, the cumulative impact of all the proposed renewable energy projects is estimated to be **high**. However, the actual physical footprint of the renewable energy facilities will be much smaller than the land parcel areas themselves. Furthermore,

several of these projects must still be subjected to a competitive bidding process where only the most competitive projects will win a power purchase agreement required for the project to proceed to construction. If all mitigation measures listed in the specialist reports are strictly implemented the cumulative impact could be reduced to **medium**.

7 FINDINGS AND CONCLUSIONS

- No new avifaunal sensitivities were recorded during the site inspection in October 2022 that had not already been identified previously in the Avian Impact Assessment Report (SiVEST 2013).
- No nests of Red Data priority species were recorded during the site inspection in October 2022.
- The site inspection in October 2022 confirmed that the findings of the Avian Impact Assessment Report (SiVEST 2022) are still valid and applicable, as the receiving environment had not changed in any material way.
- No additional mitigation measures were identified as a result of the site inspection in March 2022.

8 RECOMMENDATION

The proposed amendments are acceptable from an avifaunal perspective and will not change the nature or level of impact assessed. No additional mitigation measures will be required other than what was recommended in the original Avian Impact Assessment Report (SiVEST 2013). It is therefore recommended that the validity of the Environmental Authorisation be extended by an additional 3 years.

9 REFERENCES

- Da Cruz, P. 2013. Construction of three photovoltaic energy facilities near De Aar, Northern Cape, Avifaunal Impact Assessment. Proposed Construction of a 75MW Solar Photovoltaic (PV) Plant on Mierdam Farm near Prieska, Northern Cape Province of South Africa: Avifaunal Impact Assessment Report, Amendment Application.
- University Of Cape Town. 2022. The southern African Bird Atlas Project 2. University of Cape Town. http://sabap2.adu.org.za.
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- IUCN. 2022 IUCN Red List of Threatened Species 2022.1 (http://www.iucnredlist.org/).

APPENDIX 1: SITE SENSITIVITY VERIFICATION REPORT

SITE SENSITIVITY VERIFICATION REPORT (IN TERMS OF THE PROCEDURES FOR THE ASSESSMENT AND MINIMUM CRITERIA FOR REPORTING ON IDENTIFIED ENVIRONMENTAL THEMES PUBLISHED IN GN 1150 ON 30 OCTOBER 2020)

1 Introduction

In accordance with the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations of 2014, a site verification visit has been undertaken in order to confirm the current land use and environmental sensitivity of the proposed project area as identified by the National Web-Based Environmental Screening Tool (Screening Tool).

2 Site Sensitivity Verification

The following methods and sources were used to compile this report:

- Bird distribution data of the South African Bird Atlas 2 (SABAP 2) was obtained from the University of Cape Town (2022), as a means to ascertain which species occur within the broader area i.e., within a block consisting of 6 pentads. A pentad grid cell covers 5 minutes of latitude by 5 minutes of longitude (5'× 5'). Each pentad is approximately 8 × 7.6 km. From 2007 to date, a total of 68 full protocol lists (i.e. surveys lasting a minimum of two hours each) have been completed for this area. In addition, 36 ad hoc protocol lists (i.e., surveys lasting less than two hours but still yielding valuable data) have been completed.
- The national threatened status of all priority species was determined with the use of the most recent edition of the Red Data Book of Birds of South Africa (Taylor *et al.* 2015).
- The global threatened status of all priority species was determined by consulting the (2022) IUCN Red List of Threatened Species (http://www.iucnredlist.org/).
- A classification of the vegetation in the SEF application site was obtained from the Atlas of Southern African Birds 1 (SABAP 1) (Harrison *et al.* 1997) and the National Vegetation Map (2018) from the South African National Biodiversity Institute website (Mucina & Rutherford 2006 & http://bgisviewer.sanbi.org).
- Satellite imagery (Google Earth ©2022) was used in order to view the broader area on a landscape level and to help identify sensitive bird habitat.
- The DFFE National Screening Tool was used to determine the assigned avian sensitivity of the SEF application site.
- A one-day site survey was conducted in October 2022 to assess the habitat and record the avifauna at the development area. See Appendix 1 for the avifauna recorded during the site survey.

3 Outcome of Site Sensitivity Verification

The proposed site is situated approximately 13km south of the town of Copperton, in the Northern Cape Province. The habitat in the broader development area is highly homogenous and consists of extensive sandy and gravel plains with low shrub. The vegetation on the site itself consists mostly of shrubs scattered between bare patches

of sand and gravel. The dominant vegetation type is Bushmanland Basin Shrubland. This vegetation type consists of dwarf shrubland dominated by a mixture of low, sturdy and spiny (and sometimes also succulent) shrubs (*Rhigozum sp., Salsola sp., Pentzia sp.,* and *Eriocephalus sp.*), 'white' grasses (*Stipagrostis sp.*) and in years of high rainfall also abundant annual flowering plants such as species of *Gazania sp.* and *Leysera sp*. (Mucina & Rutherford 2006). The closest Important Bird Area (IBA), the Platberg Karoo Conservancy, is located approximately 160km to the east (Birdlife 2014) and falls outside the zone of influence of this development.

SABAP1 recognises six primary vegetation divisions within South Africa, namely (1) Fynbos (2) Succulent Karoo (3) Nama Karoo (4) Grassland (5) Savanna and (6) Forest (Harrison *et al.* 1997). The criteria used by the authors to amalgamate botanically defined vegetation units, or to keep them separate were (1) the existence of clear differences in vegetation structure, likely to be relevant to birds, and (2) the results of published community studies on bird/vegetation associations. It is important to note that no new vegetation unit boundaries were created, with use being made only of previously published data. Using this classification system, the natural vegetation in the study area is classified as Nama Karoo.

Nama Karoo as dominated by low shrubs and grasses; peak rainfall occurs in summer from December to May. Average daily temperatures range between 35°C in January and 18°C in July (http://www.worldweatheronline.com/Copperton-weather-averages/Northern-Cape/ZA.aspx). Trees, e.g. *Vachellia karroo* are mainly restricted to ephemeral watercourses, but in the proposed development area, due to the extreme aridity (average annual precipitation of only 147mm in 12 years from 2000 – 2012 - http://www.worldweatheronline.com) the ephemeral watercourses are devoid of trees. In comparison with the Succulent Karoo, the Nama Karoo has higher proportions of grass and tree cover. The two Karoo vegetation types support a particularly high diversity of bird species endemic to Southern Africa, particularly in the family *Alaudidae* (Larks). Its avifauna typically comprises ground-dwelling species of open habitats. Because rainfall in the Nama Karoo falls mainly in summer, while peak rainfall in the Succulent Karoo occurs mainly in winter, it provides opportunities for birds to migrate between the Succulent and Nama Karoo, to exploit the enhanced conditions associated with rainfall. Many typical karroid species are nomads, able to use resources that are patchy in time and space (Barnes 1998).

Figure 1 below is a sample of the typical habitat at the Mierdam PV development area

Figure 1: Bushmanland Basin Shrubland, the dominant habitat at the proposed Mierdam PV 1 development area.

The existing Cuprum - Karoo 1 66kV overhead line runs in a north-south direction directly east of the development area, which acts as an important perching substrate for raptors and vultures (Figure 2).

Figure 2: The existing Cuprum - Karoo 1 66kV overhead line which runs just east of the proposed development area.

4 National Environmental Screening Tool

The project development area is classified as **High** sensitivity for avifauna, according to the DFFE online screening tool. The development sites contain confirmed habitat for species of conservation concern (SCC), as defined in the Protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial animal species (Government Gazette No 43855, 30 October 2020)[2], namely listed on the IUCN Red List of Threatened Species or South Africa's National Red List website as Critically Endangered, Endangered, Vulnerable, Near threatened or Data Deficient. The classification of High sensitivity is linked to the potential occurrence of Lanner Falcon (Regionally Vulnerable) (Figure 3).

The occurrence of SCC was confirmed during the original surveys in March 2012. Ludwig's Bustard, Secretarybird (Globally Endangered, Regionally Vulnerable) and Sclater's Lark (Globally and Regionally Near threatened) were recorded at the site. The subsequent site visit in October 2022 confirmed that the habitat has not changed and that habitat for the above listed SCC, as well as the other SCC listed in Table 1, and Lappet-faced Vulture *Torgos tracheliotis* (Globally and Regionally Endangered) exists at the development area. This classification is assessed to be accurate as far as the potential presence of SCC is concerned, based on actual conditions recorded on the ground during the site visits in March 2012, and the subsequent site visit conducted in October 2022.

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY

Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Falco biarmicus
Medium	Aves-Neotis ludwigii

Figure 3: The classification of the Project Site according to the animal species theme in the DFFE National Screening Tool. The High sensitivity is linked to the possible occurrence of Lanner Falcon *Falco biarmicus* (Regionally Vulnerable).

5 Conclusion

The proposed classification of **High Sensitivity** in the screening tool was confirmed during the site sensitivity verification survey which was conducted on 5 October 2021.

6 References

- University Of Cape Town. 2022. The southern African Bird Atlas Project 2. University of Cape Town. http://sabap2.adu.org.za.
- Taylor, M.R., Peacock F, & Wanless R.W (eds.) 2015. The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland. BirdLife South Africa, Johannesburg, South Africa.
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APPENDIX A: AVIFAUNA RECORDED DURING THE SITE SENSITIVITY SURVEY

Species name	Scientific name	SABAP2 Full protocol reporting rate	SABAP2 Ad hoc protocol reporting rate	Global status	Regional status	Recorded at Mierdam 2022
Black-chested Prinia	*Prinia flavicans*	72.06	11.11	-	-	x
Bokmakierie	*Telophorus zeylonus*	60.29	0.00	-	-	x
Cape Penduline Tit	*Anthoscopus minutus*	11.76	8.33	-	-	x
Cape Sparrow	*Passer melanurus*	77.94	16.67	-	-	x
Chat Flycatcher	*Melaenornis infuscatus*	70.59	16.67	-	-	x
Cloud Cisticola	Cisticola textrix	0.00	0.00	-	-	x
Desert Cisticola	*Cisticola aridulus*	42.65	2.78	-	-	x
Familiar Chat	*Oenanthe familiaris*	48.53	16.67	-	-	x
Karoo Scrub Robin	*Cercotrichas coryphoeus*	51.47	11.11	-	-	x
Lark-like Bunting	*Emberiza impetuani*	69.12	25.00	-	-	x
Pale Chanting Goshawk	*Melierax canorus*	82.35	22.22	-	-	x
Pied Crow	*Corvus albus*	83.82	33.33	-	-	x
Sabota Lark	*Calendulauda sabota*	79.41	30.56	-	-	x
Scaly-feathered Weaver	*Sporopipes squamifrons*	38.24	5.56	-	-	x
Southern Red Bishop	*Euplectes orix*	1.47	0.00	-	-	x
Tractrac Chat	*Emarginata tractrac*	20.59	0.00	-	-	x
White-throated Canary	*Crithagra albogularis*	50.00	2.78	-	-	x
Yellow-bellied Eremomela	*Eremomela icteropygialis*	44.12	22.22	-	-	x