BAT SPECIALIST ASSESSMENT REPORT FOR THE SUN GARDEN SOLAR PHOTOVOLTAIC FACILITY, EASTERN CAPE PROVINCE

On behalf of

Sun Garden (Pty) Ltd

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Prepared By:

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EXECUTIVE SUMMARY

Arcus Consultancy Services South Africa (Pty) Ltd (Arcus) was appointed to conduct a bat specialist impact assessment for the proposed Sun Garden Solar Photovoltaic (PV) Facility, the results of which fed into the Specialist Assessment Report for the proposed development (this report).

Site visits were conducted in conjunction with the 12-month Pre-Construction Bat Monitoring for the Aeoulus Wind Farm, Fronteer Wind Farm, Hamlett Wind Farm, Redding Wind Farm, Rippon Wind Farm and Wind Garden Wind Farm. These field surveys were used along with desktop assessments, GIS modelling and available literature to determine the risk the proposed solar PV facility poses to bats. The results were compiled into a baseline report and used to assess potential impacts of the development on bats.

Sun Garden PV is comprised of Albany Broken Veld, Albany Valley Thicket and Saltaire Karroid Thicket vegetation types with the predominant habitat being grassland and land use being agricultural land for stock grazing. Twenty-one species of bat can potentially occur on site and there is some roosting potential, with two roosts confirmed approximately 12 km east and 30 km north of the site boundary. Important bat features were noted and potential roosting sites (such as rocky outcrops, buildings and large mature trees) were searched for resident populations. No new roosts were discovered within the project boundary.

It is unlikely that solar facilities pose significant risks to bats, however, alteration to possible roosting and foraging environments should always be considered. Roosting potential at Sun Garden PV appears to be low while some important features for foraging (such as alluvial vegetation and agricultural fields) are present mainly in the northern sections of the project boundary. Ultimately, impacts with regards to bats will be limited to roost disturbance/destruction and habitat destruction and are predicted to be low should all recommendations laid out in this report be adhered to. Considering the above, it is the opinion of the bat specialist that the proposed development can be authorised, subject to the implementation of mitigation measures outlined in this report.

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1 INTRODUCTION

Sun Garden (Pty) Ltd (the 'Developer') proposes to develop a 400 MW Solar PV Plant (Sun Garden PV) approximately 36 km south-east of Somerset East, within the Blue Crane Route Local Municipality and Sarah Baartman District Municipality of the Eastern Cape Province. The entire extent of the site falls within the Cookhouse Renewable Energy Development Zone (REDZ) and within the Eastern Corridor of the Strategic Transmission Corridors and the preferred project site is ~4,037 ha in extent. In addition to the proposed solar array comprising PV modules and mounting structures, the project will also include inverters and transformers, primarily underground cabling, 132/33kV on-site collector substation, a proposed 400 kV Main Transmission Substation (MTS), a new 132 kV overhead power line, temporary laydown areas, operation and maintenance ('O&M') buildings, internal access roads, water supply pipelines from onsite boreholes and temporary staff housing. The development envelope is ~500 ha in extent and the much smaller development footprint of ~350 ha will be placed and sited within the development envelope.

Considering the above development, several listed activities have been triggered in terms of NEMA, 1998 and has subsequently required a Basic Assessment Process to be undertaken in support of application for environmental authorisation. Based on the department's screening tool report for the proposed development, the Bats theme has been identified as having a low sensitivity, based on the proposed development type. Arcus is familiar with the receiving environment after conducting pre-construction monitoring for the proposed surrounding Wind Energy Facilities and numerous site visits have been conducted in and around the development area. The results of the specialist's findings and knowledge of the area are presented in this report, together with any potential impacts (associated with the construction and operation of the facility) and subsequent mitigation measures, wherever relevant.

2 TERMS OF REFERENCE

The terms of reference for the bat assessment were to:

- Conduct a desktop study of available bat data and literature
- Verify site sensitivity and roost proximity
- Summarise the status of bats and their activity in the region
- Review existing studies from the area
- Give an opinion on the potential impacts of the proposed development on bats in the area and provide inputs into any potential mitigation measures that should be considered, if considered relevant.

2.1 Assumptions and Limitations

It is emphasised that information, as presented in this report, only has bearing on the development site, as indicated on the accompanying map (Figure 1). This information cannot be applied should the size of the area increase or to any other area, however similar in appearance or any other aspect, without proper investigation by an appropriate bat specialist.

2.2 Relevant Legislation and Guidelines

The following policies and guidelines have informed the methodologies employed during the bat assessment and will ensure the Developer meets all legislative requirements regarding development of the Sun Garden Solar PV facility.

- Chapter 1 of the National Environmental Management Act, 1998 (NEMA) (Act 107 of 1998).

- Convention on the Conservation of Migratory Species of Wild Animals (1979)
- Convention on Biological Diversity (1993)
- Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)
- National Environmental Management Act, 1998 (NEMA, Act No. 107 of 1998)
- National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
- The Equator Principles (2013)
- The Red List of Mammals of South Africa, Swaziland and Lesotho (2016)
- National Biodiversity Strategy and Action Plan (2005)

3 DESKTOP STUDY OF AVAILABLE BAT DATA AND LITERATURE

This assessment included a desktop review of available bat data and literature to determine the general species assemblage and sensitivities on site. Several data sources were consulted for the consideration of bat locality and roost locations, including that from:

- African Chiroptera Report (2020)
- Monadjem et al. (2020)
- Herselman and Norton (1985)
- Major Bat Roosts (EWT / SABAAP)
- Final Bat Pre-construction Monitoring Reports for Aeoulus Wind Farm, Fronteer Wind Farm, Hamlett Wind Farm, Redding Wind Farm, Rippon Wind Farm and Wind Garden Wind Farm
- Arcus' unpublished database

In addition to the above, other data relevant for bat occurrence or foraging activities were also considered, namely:

- National Geo-Spatial Information Topographic dataset (2015)
- National Land Cover Data for South Africa (2013)
- National Freshwater Ecosystems Priority Areas database (2011)

Based on the above sources and information gathered from nearby projects, a list of potential bat species occurring on site was generated (Section 4). It was also found that the site, as a whole, yields very few sensitive features relevant for the local bat community occurring in the area (Figure 2). No known bat roosts occur on site, although two larger roosts are located approximately 12.5 km south east and 30 km north of the proposed facility.

4 BASELINE ENVIRONMENT

4.1 Habitats

The broader study area is separated into two ecoregions; Albany Thicket, and Fynbos Shrubland. Within these ecoregions, the Sun Garden PV development footprint is comprised of Albany Broken Veld, Albany Valley Thicket and Saltaire Karroid Thicket (Figure 1). A gradient of increasing mean annual precipitation runs from the broader western study area (where Sun Garden is located) towards the east.

There is some suitable habitat for bats that can be used for roosting, foraging and commuting in the study area. This includes thicket and woodland habitats which provide a variety of clutter conditions and are known to be important for bats, particularly woodland (Cooper-Bohannon, et al., 2016; Gelderblom, et al., 1995). The study area is dominated by grassland habitat which supports relatively high bat species richness (Gelderblom, et al., 1995). Land use in the study area is primarily agricultural including grazing, stock farming and game farming and bats are known to be attracted to areas with livestock for foraging (Downs & Sanderson, 2010). Cultivated areas are found on the border and along the river system in the north of the development area. Cultivated areas are important foraging areas

as some species forage over monoculture agricultural fields and prey on insect pests (Noer, et al., 2012; Taylor, et al., 2011). Farmsteads in the study areas contain lighting which at night will attract insects and in turn bats to hunt for prey.

Water sources are important for bats as a direct resource for drinking and because these areas tend to attract insects and promote the growth of vegetation (e.g. riparian vegetation). Therefore, besides providing drinking water, bats can also be attracted to water sources as potential foraging and roosting sites (Greif & Siemers, 2010; Sirami, et al., 2013). There is a river bordered by alluvial vegetation in the north of the site, reservoirs and farms dams in the study area that will be attractive to bats. Drainage lines will be equally important for foraging and commuting. Bats are known to use linear landscape features such as these, in addition to tree lines, for commuting routes to get to and from foraging sites, roost sites, to access water sources and because they provide protection to bats from predators, shelter from wind, and orientation cues (Verboom, 1998).

The suitability of habitat for bats is also dictated by the roosting potential. Habitats with roosting spaces are likely to be more favoured compared to areas where roosts are limited. The availability of roosting spaces is a critical factor for bats (Kunz & Lumsden, 2003) and a major determinant of whether bats will be present in a landscape, and the diversity of species that can be expected. Two bat roosts[1] are found approximately 12 km east and 30 km north of Sun Garden PV. Rocky crevices are also used as roosts by some species but these features are not significantly present on site. Other man-made infrastructure in the study areas may be used by bats as well [e.g. Cape serotine and Egyptian free-tailed bat, Monadjem et al. 2010)]. A number of free-tailed bats and plain-faced bats may roost in trees in woodland habitats, including in dead trees (Barclay, 1985; Fenton & Rautenbach, 1986; Monadjem et al., 2010). Evidence suggests that trees with larger trunks are preferentially selected by bats and therefore the destruction of older, larger trees could impact bats at the PV development.

4.2 Bat Species

The Sun Garden PV facility falls within the actual or predicted distribution range of approximately 21 species of bat (Table 1). However, the distributions of some bat species in South Africa, particularly rarer species, are poorly known so it is possible that more (or fewer) species may be present. Several echolocation calls that are characteristic of species in the Plain-faced bat family were recorded from static monitoring at the research site, although these calls were unable to be separated into distinct species. Since most of the species that these calls could belong to have a conservation status of Least Concern, these calls were grouped together and referred to as Unidentified plain-faced bat (Table 1). However, some calls could potentially be from *Myotis tricolor,* although its presence has not been confirmed.

Table 1: Bat Species Occurrence within the broader study area

Species	Code	Conservation Status		
		National	Global	Population Trend
Egyptian free-tailed bat *Tadarida aegyptiaca*	EFB	Least Concern	Least Concern	Unknown
Little free-tailed bat *Chaerephon pumilus*	LFB	Least Concern	Least Concern	Unknown
Natal long-fingered bat *Miniopterus natalensis*	NLB	Least Concern	Least Concern	Unknown
Lessor long-fingered bat *Miniopterus fraterculus*	LLB	Least Concern	Least Concern	Unknown
Mauritian tomb bat *Taphozous mauritianus*	MTB	Least Concern	Least Concern	Unknown

[1] As defined by the South African Bat Assessment Association (Medium roost of 50-499 bats of low fatality and medium-high fatality risk)

Species	Code	Conservation Status		
		National	Global	Population Trend
Cape serotine *Neoromicia capensis*	CS	Least Concern	Least Concern	Stable
Roberts's flat-headed bat *Sauromys petrophilus*	RFB	Least Concern	Least Concern	Stable
Wahlberg's epauletted fruit bat *Epomophorus wahlbergi*	WFB	Least Concern	Least Concern	Stable
Egyptian rousette *Rousetus aegyptiacus*	ER	Least Concern	Least Concern	Stable
Yellow-bellied house bat *Scotophilus dinganii*	YHB	Least Concern	Least Concern	Unknown
Temminck's myotis *Myotis tricolor*	TM	Least Concern	Least Concern	Unknown
Unidentified plain-faced bat* *Vespertilionidae species*	VSP	-	-	-
Dusky pipistrelle *Pipistrellus hesperidus*	DP	Least Concern	Least Concern	Unknown
Long-tailed serotine *Eptesicus hottentotus*	LTS	Least Concern	Least Concern	Unknown
Cape horseshoe bat** *Rhinolophus capensis*	CHB	Least Concern	Least Concern	Stable
Geoffroy's horseshoe bat *Rhinolophus clivosus*	GHB	Least Concern	Least Concern	Unknown
Bushveld horseshoe bat *Rhinolophus simulator*	BHB	Least Concern	Least Concern	Decreasing
Swinny's horseshoe bat *Rhinolophus swinnyi*	SHB	Vulnerable	Least Concern	Unknown
Lesueur's wing-gland bat** *Cistugo lesueuri*	LWB	Least Concern	Least Concern	Decreasing
Egyptian slit-faced bat *Nycteris thebaica*	ESB	Least Concern	Least Concern	Unknown
Lesser woolly bat *Kerivoula lanosa*	LWB	Least Concern	Least Concern	Unknown

5 METHODOLOGY AND OBSERVATIONS

Site visits were conducted in conjunction with the pre-construction bat monitoring campaign at Aeoulus Wind Farm, Fronteer Wind Farm, Hamlett Wind Farm, Redding Wind Farm, Rippon Wind Farm and Wind Garden Wind Farm. These visits included site walk-throughs and verification of the low sensitivity findings of the DFFE Screening Tool Report.

Site visits were conducted from March 2019 to June 2020. Potentially important bat features and sensitivities were loaded onto a GPS and the ArcCollector app to ground truth such features and verify their potential usage by bats, to further inform and verify environmental sensitivities for bats on site. The positions of known Solar PV infrastructures occurring within the site boundaries were prioritised. Additionally, other habitats with roosting potential were also identified beforehand and inspected for possible roosting potential, which included buildings, rocky outcrops and trees. No rocky outcrops were identified on a desktop level, although these were searched for in the field. In addition to this, all identified buildings were searched to determine potential usage of these infrastructures. Acoustic monitoring data was also reviewed from locations close to the Sun Garden developmental footprint to gain a better understanding on the species diversity and activity that could be expected to occur in the surrounding areas.

6 DISCUSSION

As a whole, very little evidence exists to suggest that solar energy facilities (PV) have a direct impact on bat fatalities (SABAA, 2021). Regardless, any potential alteration or

disturbance/destruction of roosting habitats is important to consider in any impact assessment.

The Sun Garden development area itself presents few roosting features that could be significantly relevant for bats (Figure 2). An absence of rocky outcrops and cliffs provides very little roosting opportunity, while existing buildings in the broader area have not shown have any signs of occupation (guano or individuals).

A river bordered by alluvial vegetation is present in the north of the site with agricultural land at the north-east and north-western borders of the site boundary, which may potentially be important for bat foraging. This, together with the undisturbed vegetation is likely to be relevant for bats, either in terms of roosting or foraging activities. Nonetheless, due to the nature of the renewable energy technology under consideration, it is expected that the impacts to consider would include habitat destruction and disturbance.

Given the small extent of the project area, the absence of significant overlap of potentially sensitive roosting features with the current infrastructure layout (including associated infrastructures), and the species composition expected to occur on site, it is not foreseen for such impacts to be significant. Regardless, these impacts have been assessed and summarised in the impact tables below. Relevant impacts pertaining to the 132 kV transmission line have already been assessed in the associated Redding Wind Farm bat impact assessment report (Arcus, 2021). The Sun Garden PV facility and Redding Wind Farm will each have a 35 m power line servitude running in parallel.

7 SUMMARY OF IMPACTS

7.1 Construction Phase

7.1.1 Habitat Destruction

Impact Phase: Construction		
Possible Impact or Risk: Habitat Destruction		
Nature: PV facilities have the potential to impact bats directly through the destruction of foraging habitat during construction. Relevant activities include the construction of roads, Operation and Maintenance (O&M) buildings, sub-station(s), internal transmission lines and installation of solar panels. Construction activities could remove important vegetation and structures that bats use when commuting to foraging areas or within foraging areas. This impact will vary depending on the species involved; species that are clutter foragers are more likely to be affected than open air foragers if vegetation is removed. Reducing foraging habitats for bats is likely to have slight negative impacts. There is a river with alluvial vegetation running through the north of the site and agricultural land bordering the north-eastern and north-western boundaries of Sun Garden. Avoidance of these important features lowers the significance of this impact, with it unlikely that this impact will occur if mitigation measures are followed. Therefore, with mitigation the significance of this impact would be low and have a slight to no effect.		
	Without Mitigation	**With Mitigation**
Extent	Local (2)	Local (2)
Duration	Long term (4)	Long Term (4)
Magnitude	Minor (2)	Minor (1)

Probability	Improbable (2)	Improbable (2)
Significance	Low (16)	Low (14)
Status (Positive or Negative)	Negative	Negative
Reversibility	Medium	High
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: 1) All construction activities should be restricted to the immediate project footprint as far as possible. 2) Avoid the construction of new roads by using existing roads as far as possible. 3) Avoid excessive removal of existing vegetation as far possible and do not remove any vegetation outside of the project boundaries that have been assessed. 4) Avoid the destruction of important vegetation and agricultural land in the north of the site as far as possible.		
Residual Risk: Marginally less foraging habitat for bats in the project footprint.		

7.1.2 Roost Disturbance

Impact Phase: Construction		
Possible Impact or Risk: Roost Disturbance		
Nature: PV facilities have the potential to impact bats directly through the disturbance of roosts during construction. Relevant activities include the construction of roads, Operation and Maintenance (O&M) buildings, sub-station(s), internal transmission lines and installation of solar panels. Excessive noise and dust during the construction phase could result in bats abandoning their roosts, depending on the proximity of construction activities to roosts. This impact will vary depending on the species involved; species that may roost in trees are likely to be impacted more (e.g. Cape serotine and Egyptian free-tailed bats; Monadjem et al. 2010) because tree roosts are less buffered against noise and dust compared to roosts in buildings and rocky crevices. Roosts are limiting factors in the distribution of bats and their availability is a major determinant in whether bats would be present in a particular location. Reducing roosting opportunities for bats is likely to have negative impacts. There is a major bat roost approximately 30 km north and a smaller roost 12 km east of Sun Garden. Avoidance of known bat roosts and high potential areas (Large trees and rocky crevices) is critical for lowering the significance of this impact, with it unlikely that this impact will occur if mitigation measures are followed. Therefore, with mitigation the significance of this impact would be low and have a slight to no effect.		
	Without Mitigation	**With Mitigation**
Extent	Local (2)	Local (2)
Duration	Very short (1)	Very short (1)
Magnitude	Minor (3)	Minor (2)

Probability	Improbable (2)	Improbable (2)
Significance	Low (12)	Low (10)
Status (Positive or Negative)	Negative	Negative
Reversibility	Medium	High
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: 5) All construction activities should be restricted to the immediate project footprint as far as possible. 6) Avoid the construction of new roads by using existing roads as far as possible. 7) Site Access should be strictly controlled, to avoid unnecessary disturbance. 8) Minimise lighting at night as far as possible. 9) Avoid operations outside of the project boundaries that have been assessed.		
Residual Risk: Even with all mitigation measures being implemented, undiscovered roosts close to construction may be disturbed due to noise and dust.		

7.1.3 Roost Destruction

Impact Phase: Construction		
Possible Impact or Risk: Roost Destruction		
Nature: PV facilities have the potential to impact bats directly through the physical destruction of roosts during construction. Relevant activities include the construction of roads, O&M buildings, sub-station(s), grid connection transmission lines and installation of solar panels. Potential roosts that may be impacted by construction activities include trees, crevices in rocky outcrops and buildings. Roost destruction can impact bats either by removing potential roosting spaces which reduces available roosting sites or, if a roost is destroyed while bats are occupying the roost, this could result in bat mortality. Reducing roosting opportunities for bats or killing bats during the process of destroying roosts will have negative impacts and could be severe. There is a major bat roost approximately 30 km north and a smaller roost 12 km east of Sun Garden. Avoidance of known bat roosts and high potential areas (Large trees and rocky crevices) is critical for lowering the significance of this impact, with it unlikely that this impact will occur if mitigation measures are followed. Therefore, with mitigation the significance of this impact would be low and have a slight to no effect.		
	Without Mitigation	**With Mitigation**
Extent	Local (2)	Local (2)
Duration	Permanent (5)	Permanent (5)
Magnitude	Low (4)	Minor (3)

Probability	Improbable (2)	Improbable (2)
Significance	Low (22)	Low (20)
Status (Positive or Negative)	Negative	Negative
Reversibility	Low	Low
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation: 1) All construction activities should be restricted to the immediate project footprint as far as possible. 2) Avoid the construction of new roads by using existing roads as far as possible. 3) Avoid excessive removal of existing vegetation as far possible and do not remove any vegetation outside of the project boundaries that have been assessed. 4) Avoid the destruction of existing buildings as far as possible.		
Residual Risk: Marginally less spaces for roosting bats and decrease in population if roosts are destroyed.		

7.2 Operational Phase

7.2.1 Roost Disturbance

Impact Phase: Operational		
Possible Impact or Risk: Roost Disturbance		
Nature: PV facilities have the potential to impact bats directly through the disturbance of roosts during operation. Relevant factors such as maintenance activities and night-time lighting, particularly around existing or potential roosts, may result in the disturbance of roosting/foraging bats.		
	Without Mitigation	**With Mitigation**
Extent	Local (2)	Local (2)
Duration	Medium (3)	Medium (3)
Magnitude	Minor (2)	Minor (1)
Probability	Improbable (2)	Improbable (2)
Significance	Low (14)	Low (12)
Status (Positive or Negative)	Negative	Negative
Reversibility	Medium	High

Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: 1) Site Access should be strictly controlled, to avoid unnecessary disturbance. 2) Minimise lighting at night as far as possible. 3) Maintain maintenance activities only around relevant PV infrastructures and avoid disturbance around undisturbed natural vegetation and existing buildings.		
Residual Risk: Even with all mitigation measures being implemented, undiscovered roosts in the area may be disturbed due to noise, lighting and dust.		

7.3 Decommissioning Phase

7.3.1 Roost Disturbance

Impact Phase: Decommissioning		
Possible Impact or Risk: Roost Disturbance		
Nature: PV facilities have the potential to impact bats directly through the disturbance of roosts during the decommissioning phase. Relevant activities include the increased traffic on roads and decommissioning of relevant PV infrastructures. Excessive noise and dust during this period could result in bats abandoning their roosts, depending on the proximity of activities to known/potential roosts. Roosts are limiting factors in the distribution of bats and their availability is a major determinant in whether bats would be present in a particular location. With mitigation, the significance of this impact would be low and have a slight to no effect.		
	Without Mitigation	**With Mitigation**
Extent	Local (2)	Local (2)
Duration	Very short (1)	Very short (1)
Magnitude	Minor (3)	Minor (2)
Probability	Improbable (2)	Improbable (2)
Significance	Low (12)	Low (10)
Status (Positive or Negative)	Negative	Negative
Reversibility	Medium	High
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	

Mitigation:

1) Maintain decommissioning activities around the immediate project footprint and avoid excess noise and traffic around existing buildings.
2) Avoid unnecessary destruction/disturbance of existing natural vegetation as far possible, by making use of existing roads.
3) Site Access should be strictly controlled, to avoid unnecessary disturbance.
4) Minimise lighting at night as far as possible.

Residual Risk:

Even with all mitigation measures being implemented, undiscovered roosts close to decommissioning activities may be disturbed due to lighting, noise and dust.

7.4 Cumulative Impacts

Nature:

The construction and operation of several infrastructures over the broader region (causing the same impacts) may potentially lead to an increase in the magnitude of the impacts associated with such developments. This may ultimately impact the bat biodiversity within the region more negatively that of a single development in isolation. The Sun Garden Solar PV facility is proposed directly adjacent another PV facility, as well as in the immediate vicinity of several proposed wind energy facilities. Potential habitat destruction and disturbance impacts across all facilities, collectively, may potentially pose a risk to bat biodiversity in the area.

	Overall impact of the proposed project considered in isolation	**Cumulative impact of the project and other projects in the area**
Extent	Local (2)	Regional (4)
Duration	Medium term (3)	Medium term (3)
Magnitude	Low (4)	Moderate (7)
Probability	Improbable (2)	Probable (3)
Significance	Low (18)	Medium (42)
Status (Positive or Negative)	Negative	Negative
Reversibility	Moderate	Low
Irreplaceable loss of resources?	No	Yes
Can impacts be mitigated?	Yes	

Mitigation:

1) Maintain all construction, operation and decommissioning activities around the immediate project footprint only, and avoid excess noise and traffic around existing buildings.
2) Avoid destruction of existing buildings on site.
3) Avoid destruction of natural vegetation, as far as possible.
4) Use of existing roads should be maximised. Off-road driving should be avoided.
5) Site Access should be strictly controlled, to avoid unnecessary disturbance.

6) Minimise lighting at night as far as possible.
Residual Risk: Even with all mitigation measures being implemented, undiscovered roosts close to decommissioning activities may be disturbed due to lighting, noise and dust.

8 CONCLUSION

As per the findings presented above, Arcus confirms that the classification of the project area (as low sensitivity to bats), as presented in the DFEE Screening Tool Report, is accurate and no further adjustments to this classification is necessary. It is believed, based on observations and available information, that the small extent of the project area and type of development under consideration is not expected to cause an irreplaceable loss to biodiversity, in terms of the bat community on site. No sensitive areas for avoidance have been identified on site, although several potentially sensitive features have been identified, as depicted in Figure 2. A few mitigation measures have subsequently been recommended to be followed – particularly pertaining to that of known and potential bat roosting structures/habitats, as described in Section 7. Should the above measures be adhered to, it is the opinion of the specialists that the proposed development can proceed and can be authorised from a bat perspective.

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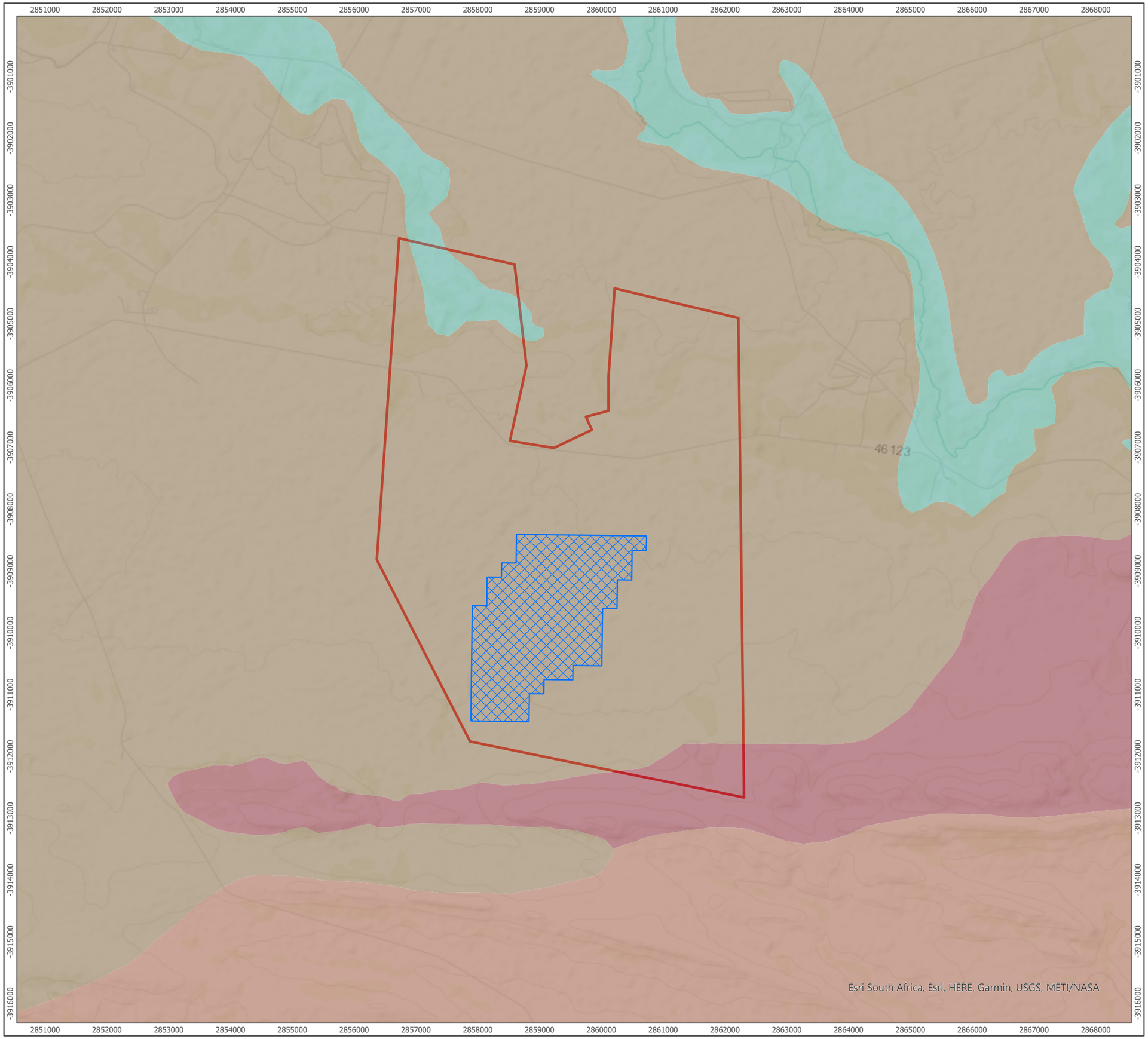


ARCUS

Site Boundaries

Sun Garden PV Facility

Vegetation Types

- Albany Broken Veld
- Albany Valley Thicket
- Saltaire Karroid Thicket
- Southern Karoo Riviere

1:59 306 Scale @ A3

0 1 2 km

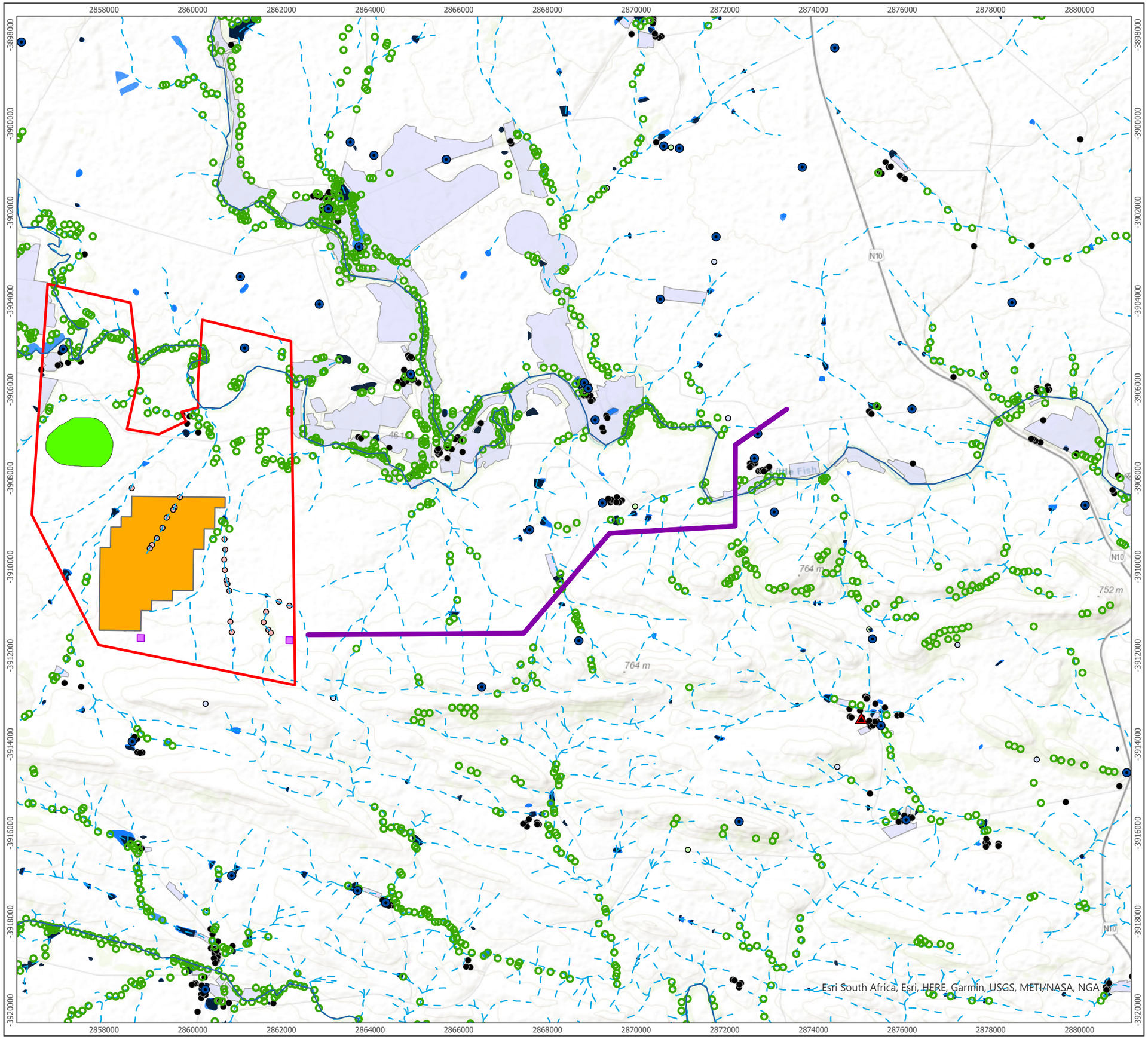
NORTH

Produced By: CC	Ref: 3065-GIS-015
Checked By: MH	Date: 2021/10/18

Site Locality Map
Figure 1

Sun Garden Solar PV Facility
Specialist Assessment Report

S:\GIS\Projects\3065 Choje\3065 Choje.aprx\3065-GIS-015 Fig 1 Site Location Map Sun Garden PV



ARCUS

- Site Boundary
- Sun Garden PV Facility

PV Infrastructures

- Solar/Borehole Positions
- Solar/Borrow Pit Locations
- Solar/Stormwater Crossings
- 132kV OH Line
- 132kV Substations
- BoP Area

Sensitive Features

- South Africa Bat Roosts
- House
- Tree
- Water Reservoir
- Drainage Lines
- NFEPA Rivers
- Dam
- Cultivated Land
- Wetlands

1:82 666 Scale @ A3

0 1.5 3 km

NORTH

Produced By: CC	Ref: 3065-GIS-017
Checked By: MH	Date: 2021/10/18

Sensitivity Map
Figure 2

Sun Garden Solar PV Facility
Specialist Assessment Report

S:\GIS\Projects\3065 Choje\3065 Choje.aprx\3065-GIS-017 Fig 2 Sensitivity Map Sun Garden PV