

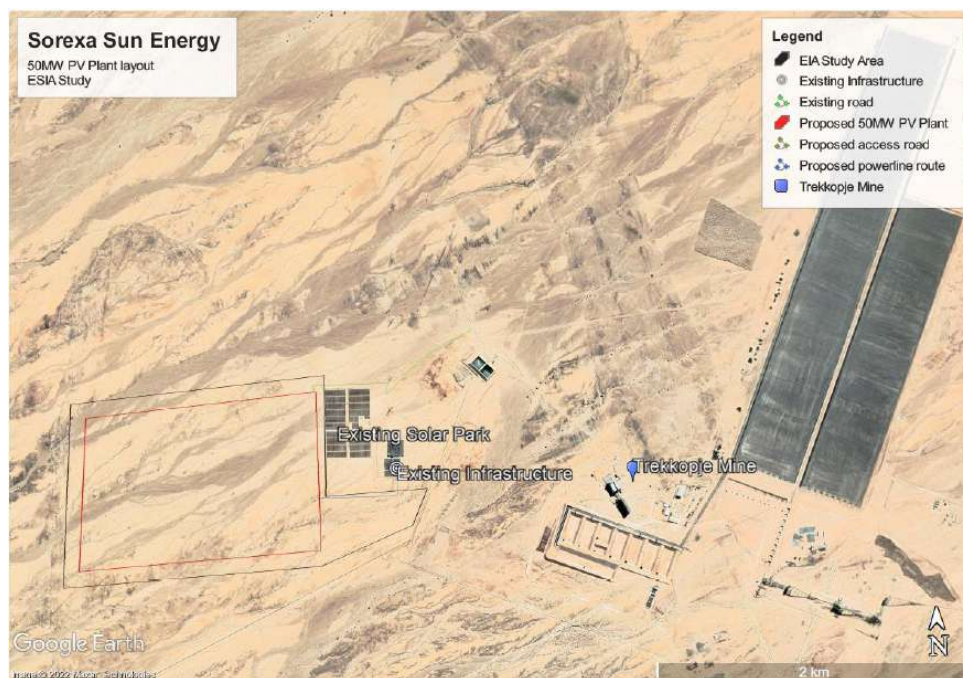
PROPOSED 50MW SOLAR PHOTOVOLTAIC PLANT ON 150HA, NORTH WEST OF ARANDIS, ERONGO REGION

FINAL SCOPING REPORT

ECC APPLIED FOR:

- 50MW Photovoltaic Solar Plant
- 0.5 km 33 kV Power line

August 2022



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Project Name	50MW PHOTOVOLTAIC SOLAR POWER PLANT WITH POWER LINE NEAR TREKKOPJE	
Associated Infrastructure	33 kv Power line from Substation to Plant	
	0.5km access road (extension of existing access road)	
	Fence, small office building (app. 30m ²), small warehouse (app. 50m ²), parking area (app. 50m ²)	
Locality	25km northwest of Arandis, Erongo Region	
Co-ordinate	-22.159019° 14.799292°	
Reports	Final Scoping Report	
Stage of Report	Submission to Directorate of Environmental Affairs	
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Date of Release	August 2022	
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TABLE OF CONTENTS

TABLE OF CONTENTS	i
LIST OF TABLES AND FIGURES.....	iii
1 INTRODUCTION	iv
1.1 Background.....	1
2 THE PROPOSED DEVELOPMENT	2
2.1 Project Motivation	2
2.2 Layout And Lifetime	2
2.3 Project Schedule	2
2.4 Land Tenure Agreement	2
2.5 Site Locality.....	2
2.6 Infrastructure	3
2.7 Alternative Technologies Considered	2
2.8 Operation and Maintenance Phase	2
3 STAKEHOLDER CONSULTATION	4
4 LEGAL REQUIREMENTS OF THE PROJECT.....	6
6 BIOPHYSICAL AND SOCIAL BASELINE SUMMARY.....	8
6.1 Climate	8
6.2 Physical Geography	8
6.3 Flora.....	10
6.3.1 Introduction.....	10
6.3.2 Endemicity.....	10
6.3.3 Expected Diversity On-Site	10
6.4 Fauna	11
6.4.1 Reptiles, Mammals & Amphibians	11
6.4.2 Birds.....	12
6.4.3 Sensitivities Related to Birds.....	13
6.5 Archaeology	14
6.6 Socio-Economic Environment.....	14
6.6.1 Overview of the Erongo Region	14
6.6.2 Arandis	15
6.6.3 #Gaingu Conservancy.....	16
6.6.4 Sensitivities	16

7	IMPACT ASSESSMENT.....	16
7.1	Methodology Employed for the Impact Assessment.....	16
7.2	Assessment of Impacts	18
8	CONCLUSIONS AND RECOMMENDATIONS	25
9	REFERENCES	28

LIST OF TABLES AND FIGURES

Figure 1:	Locality of the proposed Sorex 50MW Solar PV Plant near Trekkopje.....	1
Figure 2:	Elements of the 33 kV power line	4
Figure 3:	Proposed site layout.....	1
Figure 4:	Solar panels to be used	2
Figure 5:	Topography of the project area.....	9
Figure 6:	Areas with potentially sensitive vegetation.	11
Figure 7:	Distribution of archaeological site near the project site (Kinahan, 2022).....	14
Figure 8:	Vegetation risk zones to be avoided.	25
Table 1:	Stakeholders identified during the EIA process.....	4
Table 2:	Relevant provisions from applicable legal instruments.....	6
Table 3:	Sensitivities relating to Physical Geography	9
Table 4:	Total number of species known or expected to occur in the study area. Species presence in some cases is non-resident and represented by occasional vagrants only (Irish, 2012).....	12
Table 5:	Sensitivities relating to Fauna	13
Table 6:	Sensitivities relating to Socio-Economic Environment	16
Table 7:	Criteria for the assessment of impacts	17
Table 8:	Impact assessment of the proposed solar park and associated infrastructure, including the access road, power line, water and sewage storage facilities.....	19
Table 10:	Annotated list of species likely to occur on the proposed site.....	1

APPENDICES

APPENDIX A:	ENVIRONMENTAL MANAGEMENT PLAN
APPENDIX B:	STAKEHOLDER ENGAGEMENT REPORT
APPENDIX C:	ANNOTATED PLANT LIST
APPENDIX D:	CV OF EAP

EXECUTIVE SUMMARY

Sorex Sun Energy intends to develop a 50MW Solar Photovoltaic (PV) plant on a 150Ha area at the Trekkopje Mine (Figure i), near Arandis, approximately 25km northwest of Arandis and adjacent to the Trekkopje Uranium Mine. The purpose of the project is to produce electricity through a renewable source.

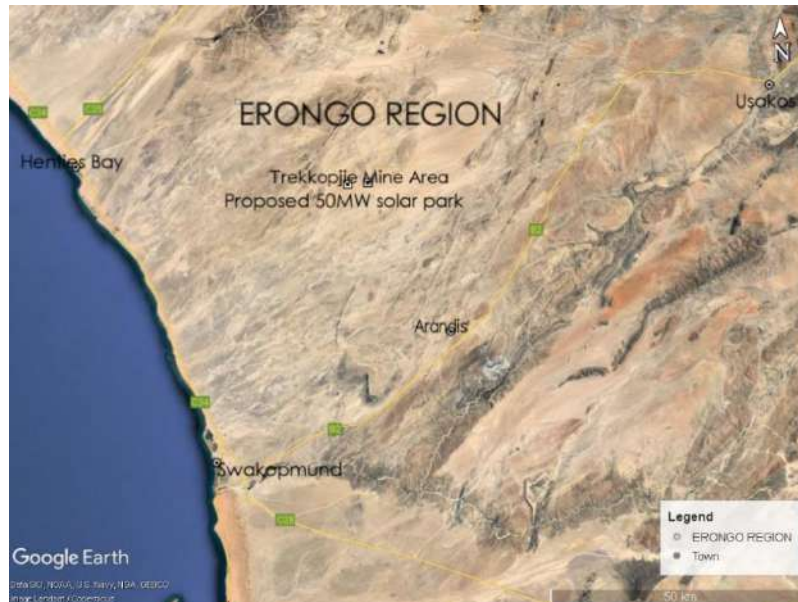


Figure i: Locality of the proposed Sorex 50MW Solar PV Plant near Trekkopje

Enviro Dynamics has been instructed to apply for an Environmental Clearance Certificate (ECC), on behalf of the developer, in terms of the Environmental Management Act (2007) and Regulations (2012). For this application, Enviro Dynamics is preparing a Scoping Report (SR) and Environmental Management Plan (EMP) for submission to the Ministry of Environment, Forestry and Tourism (MEFT).

Project Details

A total of 80 job opportunities will be created for the construction period, of which up to 60 could be from the local community. The major benefit of the project, however, is the increased local electricity supply to the nation from a renewable energy source.

The site will consist of the layout of the solar panels (spread out over approximately 150Ha), an access road (existing up to the current Sertum Energy solar power plant), a 500m 33kV transmission line up to the existing substation, a battery storage facility, a small parking area, and office/storage building.

Commissioning of the project is expected in September 2023, with a project lifetime of 25-30 years.

The company signed a principle lease agreement with the Traditional Authority, which is the custodian of the Project Site and are in the process of applying to the Communal Land Board for a Certificate of Leasehold.

Site and Environment

The site is situated in the Central Namib, is generally flat with shallow drainage lines covering the area. The terrain itself is void of outcrops. Sparsely distributed vegetation is found in the drainage lines with perennial grasses covering the plains. One zone has been delineated which could potentially harbour *Lithops* (southern boundary area), but this needs to be confirmed. There is no habitation or significant socio-economic activity on the area and it is not a tourism hotspot or on a tourism route. The area has a low density of archaeological finds, with no significant sites on the particular site, as demonstrated by a previous investigation for the mine. The Consultant found the site to be generally suitable for the construction of the solar plant. Suggestions were made to avoid minor areas where conservation worthy vegetation may occur or where hydrological functioning may be significantly impeded with development. Some of these areas could potentially be developed subject to further investigations.

Consultation with stakeholders and interested and affected parties

The consultant reached out to the relevant authorities, communities and other interested and affected parties, in order to hear their concerns and integrate their views into the scoping process. A meeting was held with the Traditional Leader of the !OeṭGan Traditional Authority, which governs the use of the area. A principle of Lease document was duly signed to mutually agree on the general terms of leasing the land. Furthermore, on 2 August 2022 a meeting with the #Gaingu Conservancy was held and it was recorded that Provisional Consent to proceed with the project was provided by the Conservancy, subject to agreeing on the final terms of the land lease structure and benefits. The proof of the meetings and the Principle agreement is appended with the Stakeholder Engagement Report, **Appendix B**.

A number of people registered to receive further information on the project in response to press advertisements. From these responses it became clear that the main concern is potential job opportunities on the project. The Central Namib Botanical Gardens enquired about the possibility of sensitive vegetation being found on the site. These comments were considered during the scoping process. This report was circulated for comments, and the adjacent Orano Mine provided their constructive inputs, reported on in the Stakeholder Engagement Report.

Findings

The positive impacts of this project include the creation of some 60 job opportunities in an overall economic slump, with many jobless people in the nearby Arandis and

in the region, following downscaling of many of the mines in the area. The renewable energy mix in Namibia will be strengthened by this project, reducing the reliance for power from South Africa and other countries.

Besides impacts generally associated with all construction projects, including health and safety, waste, pollution and water use, all of which can be readily mitigated to acceptable levels on this project, with recommended management actions provided in the EMP, the following impacts require specific attention:

- **Habitat, vegetation and fauna loss due to vegetation clearance, illegal harvesting and collection during construction.** Only the necessary vegetation should be cleared by hand and no mechanical equipment is to be used for this purpose. The vegetation is to remain under the solar panels, with the exception of larger plant specimens that are in the way. The workforce should be prohibited to move beyond the construction site. The lithops and vegetation / no-go zones (see Figure 8 in the document) should be left intact, since these are important water conduits and/or areas with potential conservation worthy vegetation. If these zones must ultimately be used, a dedicated vegetation field survey should be conducted beforehand and potential conservation worthy vegetation areas be protected or such species be relocated.
- **Increased pressure on housing and infrastructure in Arandis caused by additional labour demand and labour influx.** A locals first policy should be adopted, employing unemployed people from the community who already have housing. Alternatively, or for those without housing, an agreement should be reached with the Arandis Town Council regarding a temporary accommodation site for the workforce.
- **Future conflict and/or misunderstandings between the community, conservancy and leadership and the proponent.** The site is far removed from the conservancy resources of the community, which are mainly focussed around the Spitzkoppe area and the Rössing Mountain. However, there may be expectations from the community about this project. It is important that realistic expectations from the project be set in terms of labour and other opportunities be communicated to the community, including what benefits may be expected and who will be the beneficiaries. There should be a healthy communication channel with the community, and they should be involved where possible, e.g. utilising the pallets/packaging of the solar panels.
- **Removal or reduction in function of ecosystem services, i.e. the drainage lines as water conduits, providing natural run-off and water to habitats.** It is important that this important function of the drainage lines in the area be preserved. The drainage lines are flat, therefore it is possible to level the area only slightly, leaving the natural drainage of the area intact, with the solar panels placed over it.
- **Collisions with transmission lines or wire stays, and / or electrocution by transmission lines cause injuries and mortalities; particularly priority species.** This impact is expected to be low, based on the short length of the power line

and the lack of bird-attracting habitat at the site where the power line will be constructed. Practical advice from a bird specialist in terms of relevant mitigation measures on lines and poles should be solicited before construction.

- **Increased waste in the area and region**, particularly caused by the need to discard the solar panels and other parts of arrays when these need to be replaced or when the project ends. Ensure that the panels are recycled as far as possible and that all components of the solar array, including infrastructure, is removed from site, and the area rehabilitated. Consult with the community for any possible future uses of some of the infrastructure.

These negative impacts can all be managed using available mitigation measures. The project is generally not situated in an ecologically or socially sensitive area and normal environmental management strategies will be adequate to address those impacts identified. They are listed in the Environmental Management Plan which needs to be implemented diligently.

It is therefore recommended that Environmental Clearance be granted to the project.

1 INTRODUCTION

1.1 BACKGROUND

Sorex Sun Energy intend to develop a 50MW Solar Photovoltaic (PV) plant on a 150Ha area at the Trekkopje Mine (Figure 1), near Arandis. The purpose of the project is to produce electricity through a renewable source.



Figure 1: Locality of the proposed Sorex 50MW Solar PV Plant near Trekkopje

Enviro Dynamics has been instructed to apply for an Environmental Clearance Certificate (ECC), on behalf of the developer, in terms of the Environmental Management Act (2007) and Regulations (2012). For this application, Enviro Dynamics is preparing a Scoping Report (SR) and Environmental Management Plan (EMP) for submission to the Ministry of Environment, Forestry and Tourism (MEFT). The EAP who is conducting this assessment is Stephanie van Zyl, and her CV is attached as **Appendix D**.

The steps undertaken during this Scoping process involves the following:

- 1)Description of the project (Section 2)
- 2)Consultation with Interested and Affected Parties
- 3)Site visit to conduct screening and potential issues
- 4)Biophysical and Social Baseline description
- 5)Impact Assessment
- 6)Environmental Management Plan

The first 5 steps are reported on in this Scoping Report, while Step 6, the Environmental Management Plan is **Appendix A**.

2 THE PROPOSED DEVELOPMENT

2.1 PROJECT MOTIVATION

The purpose of the project is to produce electricity through a renewable source. The electricity will be supplied to customers in and outside Namibia through the Modified Single Buyer Framework¹ and the Southern African Power Pool (SAPP).

A total of 80 job opportunities will be created for the construction period, of which 60 could be from the local community. The major benefit of the project, however, is the increased local electricity supply to the nation from a renewable energy source, instead of the import of electricity from a non-renewable source, from outside Namibia.

2.2 LAYOUT AND LIFETIME

A preliminary layout of the site is shown in **Figure 3** below, although this layout may change following technical and environmental evaluations currently underway. Land surveys were completed in July 2022 and subsequent hydrology and geotechnical studies will be completed in August 2022 to inform the final layout design. The site will consist of the layout of the solar panels (spread out over approximately 150Ha), an access road (existing up to the current Sertum Energy solar power plant), a 33kV transmission line up to the existing substation, a small parking area, and office building. The type of solar panels to be used are shown in **Figure 4**.

2.3 PROJECT SCHEDULE

Commissioning of the project is expected in September 2023, with a project lifetime of 25-30 years.

2.4 LAND TENURE AGREEMENT

The company signed a principle lease agreement with the Traditional Authority, which is the custodian of the Project Site and are in the process of applying to the Communal Land Board for a Certificate of Leasehold.

2.5 SITE LOCALITY

The proposed 150 Hectare plant is situated approximately 25km northwest of Arandis and adjacent to the Trekkopje Uranium Mine, which is currently on care and maintenance. **Figure 3** shows that the site is directly to the west of the existing

¹ "The Modified Single Buyer framework,...allows transmission electricity consumers and Independent Power Producers (IPPs) to transact with each other directly for the supply of electricity. Transmission customers will therefore now be able to buy a portion (up to 30 percent) of their energy requirements directly from a private Generator. " <https://www.ecb.org.na>

Sertum Energy solar power plant and the existing NamPower Trekkopje substation. The power from the new plant will be fed into this substation.

The site selection process included the following criteria:

- Proximity to existing substations (costs of transmission line distances to substation)
- Site topography – ease of construction, erosion potential
- Solar radiation availability
- Land availability
- Geotechnical constraints

The particular site selected fared very well in terms of all these criteria, as is further discussed in **Section 6**.

The EAP also considered the site in terms of the following criteria:

- Potential land use conflicts
- Sensitivity of the environment (potential vegetation, land degradation/modification, conservation status, heritage sites, etc.)
- Visual impact

Changes were suggested to the Proponent, to move the site away from sensitivities and further recommendations are being made in this report, to ensure ecological preservation on site (See **Section 6** and **7**).

Compared to other sites in the vicinity, this area is considered to be superior from a technical and environmental point of view.

2.6 INFRASTRUCTURE

- The local power source will be used for electricity purposes on site.
- A 33kV transmission line will be built from the substation to the site. A route shown in blue on Figure 5 indicates approximately 500m length. The power line structures typically consist of the elements shown in **Figure 2** below.

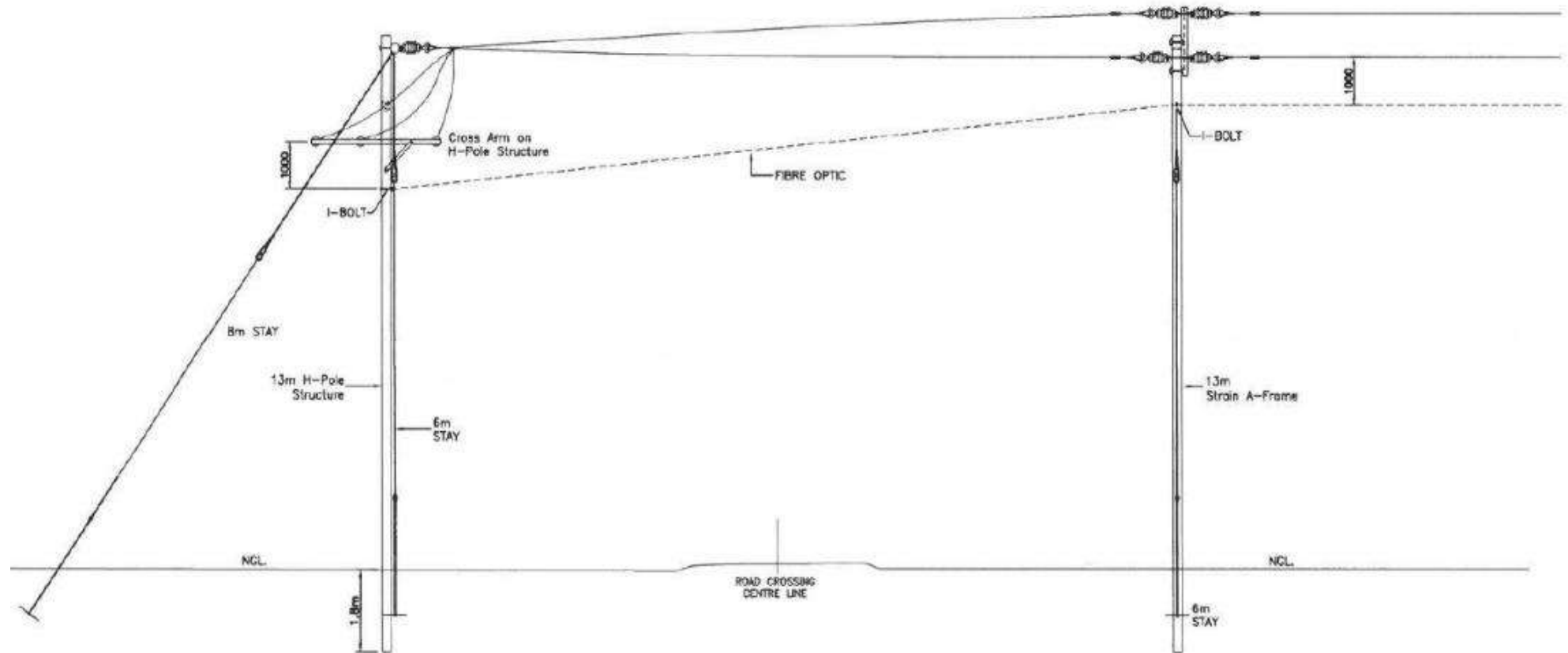


Figure 2: Elements of the 33 kV power line

- The water demand is expected to be app. 60m³/month during construction and app. 50m³/month average over the period of operation. This demand can be supplied by the existing desalinated water source via the Trekkopje Pipeline and the commercial supply of this water will be negotiated and agreed directly with Trekkopje Mine.
- A gravel access road will be constructed which will extend from the current Sertum Energy solar power plant to the site.
- A Battery storage system is included, consisting of modular, fully integrated AC coupled systems with sealed lithium-ion battery packs, which combined form inverter blocks to build a Multi-MW Site.
- A containerised housing unit with limited accommodation capacity is included. This will function as temporary accommodation for rotating security and technical teams and small storage on site. Electricity will be provided from the PV plant, water will be supplied from the Trekkopje water supply via a 2kl tank, and sewer will be managed via a septic tank that will be maintained by the Arandis Town Council.

2.7 SOLAR PANELS: ARRANGEMENT AND TECHNOLOGY

The panels are normally spaced with driveways in between, in rows or arrays, as indicated conceptually in *Figure 3*. *Figure 4* shows the panels visually and illustrates the technology to be used. This particular design and supplier has been used on several projects by the Proponent and so far they seem to be reliable. The final decision on the particular technology to be used, will however be made prior to construction.

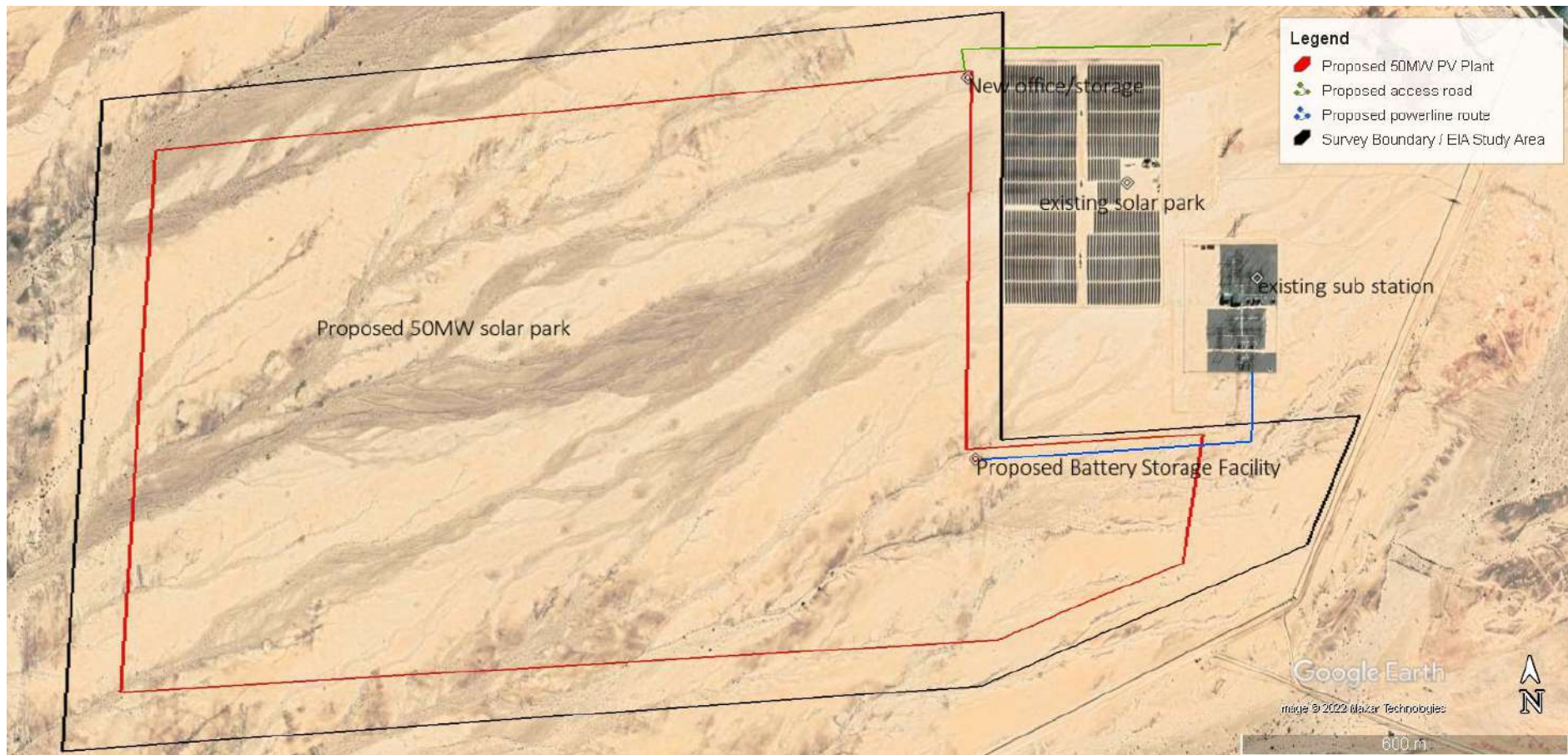


Figure 3: Proposed site layout

Harvest the Sunshine

DEEP BLUE 3.0

550W MBB Bifacial Mono PERC Half-cell Double Glass Module
JAM72D30 525-550/MB Series

Mono

Introduction

Assembled with 11BB bifacial PERCium cells and half-cell configuration, these double glass modules have the capability of converting the incident light from the rear side together with the front side into electricity, providing higher output power, lower temperature coefficient, less shading loss, as well as enhanced tolerance for mechanical loading.



Higher output power



More reliable, more stable power generation



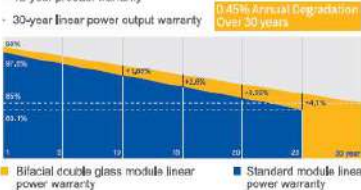
Less shading effect



Lower temperature coefficient

Superior Warranty

- 12-year product warranty
- 30-year linear power output warranty



0.45% Annual Degradation Over 30 years

■ Bifacial double glass module linear power warranty
■ Standard module linear power warranty

Comprehensive Certificates

- IEC 61215, IEC 61730, UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC TS 62941: 2016 Terrestrial photovoltaic (PV) modules – Guidelines for increased confidence in PV module design qualification and type approval





JASOLAR

www.jasolar.com

Specifications subject to technical changes and tests. JA Solar reserves the right of final interpretation.



Figure 4: Solar panels to be used

2.9 OPERATION AND MAINTENANCE PHASE

Once the plant is operational it is estimated that 1 technician, 2 electricians and 2 security guards will be employed.

Maintenance for the proposed project will include the cleaning of the panels and replacing of parts. The parts that may need to be repaired or replaced in the long-term are the inverters. The expected lifespan of the PV panels is 20 years. Dust deposited on the panels, as well as excessive heat, reduces the ability of the panels to generate electricity. The panels will be cleaned on a weekly basis using purified/potable water in order to limit the amount of dust that collects on the panels. Approximately 17 500 litres of purified water will be needed per month per MW installed for cleaning during spring and summer months (August-April) and approximately 12500 litres during winter months (May-July). Semi-purified water is unsuitable for cleaning

purposes because it has dissolved solids, which would be deposited on the panels once the water evaporates. It is planned to purchase desalinated water from the Trekkopje desalination plant. A pipeline from the desalination plant near Henties Bay passes close to the site. A distribution pipeline will be installed from there to the site. 24 hour security will be put in place to safe guard the solar plant.

3 STAKEHOLDER CONSULTATION

The stakeholder consultation report is attached as Appendix B. The proposed project was advertised according to the requirements in the Regulations (2012), in two Namibian newspapers, for two consecutive weeks.

The stakeholders who were identified for this project include the following (Table 1:

Table 1: Stakeholders identified during the EIA process

NAME/NOTE	
REGIONAL AUTHORITY	Erongo Regional Council – Arandis Constituency Councillor
TRADITIONAL AUTHORITY	!OeǀGan Traditional Authority
CONSERVANCY	#Gaingu Communal Conservancy
NEIGHBOURING OPERATIONS²	Orano Mining Namibia (Trekkopje Uranium Mine) Sertum Energy Solar Park
LAND BOARD	Responsible for Land Lease Agreement
MINISTRIES	Ministry of Mines and Energy, Electricity Control Board
NEAREST MUNICIPALITY	Arandis Town Council
UTILITIES	NamWater, NamPower
REGISTERED INTERESTED AND AFFECTED PARTIES	See Stakeholder List (Appendix B).

The project was advertised in the press, for two consecutive weeks, and those registered were added to the distribution list. The Background Information Document (BID) (Appendix B) was sent to the identified stakeholders, including the interested and affected parties for comment. Comments received were considered during the study.

Comments and interest received are the following:

- Generally, the most interest was in the job and investment opportunities of the project.

² The land is State Land (governed by the Traditional Authority), therefore there are no neighbouring property owners, in the true sense of the word, but the nearby operations were added to the list.

- The Central Namib Botanical Gardens are concerned about the vegetation loss on the site, due to the expected occurrence of conservation worthy vegetation in the area (see **Appendix B**).

A meeting was held with the Traditional Leader of the !OeǀGan Traditional Authority, which governs the use of the area. A principle of Lease document was duly signed to mutually agree on the general terms of leasing the land. Furthermore, on 2 August 2022 a meeting with the #Gaingu Conservancy was held and it was recorded that Provisional Consent to proceed with the project was provided by the Conservancy, subject to agreeing on the final terms of the land lease structure and benefits. The proof of this communication (attendance list and principle agreement are attached to the Stakeholder Engagement Report).

The Draft Scoping Report has been circulated for comment to the distribution list. Comments were made by the Orano Mine, including the following:

- Cosmetic edits
- Emphasis that construction workers should not move around at the site and should be provided with adequate sanitation, since a lack of these management strategies will probably lead to inappropriate defecation, waste, plant removal, etc.

4 LEGAL REQUIREMENTS OF THE PROJECT

This section outlines the environmental and social legal requirements related to the project, summarised in **Table 2** below.

This review serves to inform the developer of the requirements and expectations, as laid out in terms of these instruments, to be fulfilled before the proposed project may commence.

Table 2: Relevant provisions from applicable legal instruments

LEGISLATION/ POLICY/ GUIDELINE	RELEVANT PROVISIONS	IMPLICATIONS FOR THIS PROJECT
INTERNATIONAL		
Convention on Biological Diversity (1992)	Article 6 (b) provides for the explicit consideration of "the conservation and sustainable use of biological diversity into relevant... plans, programmes and policies"	In keeping with national strategies, OPE needs to ensure that biodiversity is not compromised as a result of this project.
NATIONAL		
Namibian Constitution First Amendment Act 34 of 1998	Chapter 11 Article 95: Promotion of the Welfare of the People	Ecological sustainability should inform and guide these projects.
Environmental Management Act (No 7 of 2007)	Requires that projects with significant environmental impact are subject to an environmental assessment process (Section 27). Details principles which are to guide all EAs.	The Environmental Management Act and its regulations should inform and guide this EIA process.
EIA Regulations GN No 28-30 (GG No 4878)	Details requirements for public consultation within a given environmental assessment process (GN No 30 S21). Details the requirements for what should be included in a Scoping Report (GN No 30 S8) an EIA report (GN No 30 S15).	The Environmental Clearance Certificate is to be renewed every three years, together with a report on the implementation of the EMP.
Forestry Act 12 of 2001 Nature Conservation Ordinance 4 of 1975	Tree species and any vegetation within 100 m from a watercourse may not be removed without a permit (Forestry Act S22(1)). Prohibits the removal of and transport of various protected plant species.	So far no tree species have been identified that require a permit. However, the watercourses are to be preserved.
Labour Act 11 of 2007	Details requirements regarding minimum wage and working conditions (S39-47).	The proponent should ensure that all

Health and Safety Regulations GN 156/1997 (GG 1617)	Details various requirements regarding health and safety of labourers.	contractors involved during the construction, operation and maintenance of the proposed project comply with the provisions of these legal instruments.
Public Health Act 36 of 1919	Section 119 states that "no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health."	
Water Act 54 of 1956	The Water Resources Management Act 24 of 2004 is presently without regulations; therefore the Water Act No 54 of 1956 is still in force: Prohibits the pollution of underground and surface water bodies (S23(1)). Liability of clean-up costs after closure/ abandonment of an activity (S23(2)).	The protection of ground and surface water resources should be a priority. The main threats will most likely be concrete and hydrocarbon spills during construction and hydrocarbon spills during operation and maintenance.
Electricity Act 4 of 2007	The Electricity Control Board (ECB) with regards to achieving its objectives must make recommendations to the Minister regarding the issue and renewing of licences. A licence is required under the act for the generating and trading of electricity.	OPE needs to adhere to the recommendations made by the ECB. OPE requires licences for the generation and trading of electricity.
Communal Land Reform Act (2003)	Communal Land Boards exist in terms of the act, including such a board which also governs the project area, for the use of the land.	Land Lease agreement to be obtained from the Land Board, in consultation with the community leadership.

The most important provisions from those listed above are those contained in the Environmental Management Act, the Electricity Act and the Forestry Act. The implementation of the Labour Act is also crucial during the construction period.

6 BIOPHYSICAL AND SOCIAL BASELINE SUMMARY

This section describes the key pertinent features of the bio-physical and social environment of the study area, especially those features which may be affected by the project implementation.

The methodologies used to obtain this information is as follows:

- Desk studies using information from published sources, as cited where applicable, as well as studies conducted in the area, namely the baseline studies for the Trekkopje Mine (adjacent to the site and covering similar habitats), as well as the proposed transmission line from Rössing substation to Walmund substation, passing north of Arandis (covering two of the habitats also found on site).
- Site visit to confirm the sensitivities of the terrain.
- Discussions with the socio-political leaders of the area.

6.1 CLIMATE

The study area is located approximately 43km from central Namib coast. This zone is characterised by extreme aridity, with an average of between 50 and 100mm of rain per year (Mendelsohn, Jarvis, Roberts, & Robertson, 2009). It is further typified by mild summers and cool winters with average minimum and maximum temperatures ranging between 10°C and 28°C. Occasional east wind conditions produce hot and dry conditions within the project area with temperatures reaching in excess of 35°C. According to Seely & Pallet (2008) fog is a prevalent characteristic, extending approximately 50 km inland over 100 days per year. Fog produces five times more moisture than rain in the central Namib and is much more predictable.

6.2 PHYSICAL GEOGRAPHY

The proposed solar plant site is located in the central Namib, between the ephemeral Ugab and Kuiseb rivers, and is bound by the Atlantic Ocean in the west and the escarpment in the east.

The site is located on the gravel plains of the central Namib. **(Figure 5)**. The landscape, although mostly flat in this area, is dissected by various shallow, sandy drainage lines. Even though there are rocky ridges, particularly dolorite ridges in the vicinity, these do not occur on the site.

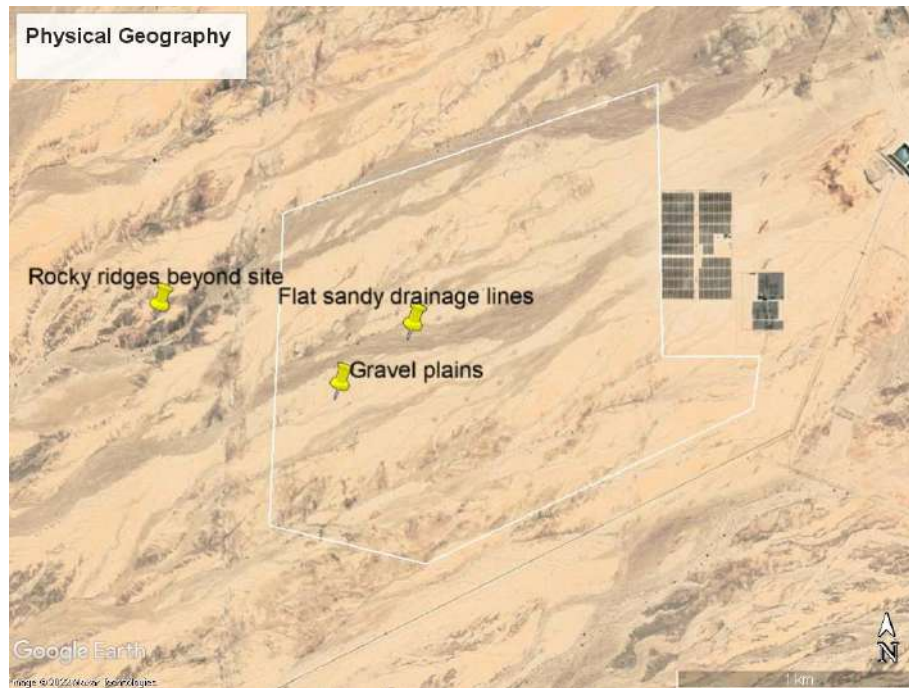


Figure 5: Topography of the project area.

A distinctive feature of the gravel plain soils is the presence of a calcrete layer at the base of the soil profile, and the surface crust or capping. In general, the soils are highly sensitive, overlying an evaporate layer of varying thickness and density (calcrete) that occurs above the host rock geology (Irish, 2012). Due to higher lichen and biological soil crust incidence towards the west, substrates are more sensitive west of Arandis than east of it.

The key sensitivities related to the physical geography are contained in **Table 3**.

Table 3: Sensitivities relating to Physical Geography

ENVIRONMENTAL FEATURE	DESCRIPTION	SENSITIVITY	POTENTIAL IMPACT
Gravel plains	Soil surface comprised of a biological soil crust.	Disruption, typically vehicles and earthmoving machinery, destroy the surface layer of soil. Because of slow ecological processes under desert conditions, biological soil crusts may take centuries to re-form.	Loss of biological soil crusts result in reduced environmental productivity, while physical habitat is also made unsuitable for other life forms.
Drainage lines	Flat sandy conduits, less than 0,5m deep, with sparse vegetation carrying run-off which is slow and low flow.	The life lines of the plains, carrying run-off and acting as habitat and food source to vegetation, birds, insects, rodents and other animals.	Destruction of habitat . Erosion due to destruction of natural water conduits.

6.3 FLORA

Mannheimer (2022) conducted a desk top study and impact assessment for this Scoping Study. Her desk study was confirmed during the site visit undertaken by Norman and Stephanie van Zyl.

6.3.1 INTRODUCTION

Mannheimer (2022) confirmed that the study area falls into the Central Namib vegetation zone, according to the classification of Geiss (1998), a trusted classification system used widely by botanists. Recorded species diversity for all quarter-degree squares in the central Namib, excluding exceptionally diverse squares, including the Rössing Mountain and the Swakop and Khan River canyons, is approximately 38 taxa. Of these, a large proportion are annual species, succulent and geophyte species. A number of species are restricted, or largely restricted, to koppies, ridges, drainage lines and rivers.

Based by previous work done by Mannheimer in the area (cited in Mannheimer, 2022) previous studies confirmed that diversity in the general Trekkopje area is high, at 190 species. This is because there are diverse habitats in the area, including sandy and gravel plains, washes, and rocky outcrops.

6.3.2 ENDEMICITY

Over 30% of the Namib Desert plants in Namibia are believed to be endemic to that area. Even though this is high, Mannheimer explains that the highest area of endemism of the area are the Kaokoveld and the southern Namib, both regarded as major centres of endemism in Namibia (Maggs et al, 1998, cited in Mannheimer 2022)). Levels of plant endemism are around 13% in the Central Namib, and therefore not regarded as a 'hotspot' of endemics restricted to that zone.

6.3.3 EXPECTED DIVERSITY ON-SITE

The project site includes only two of the habitats that were observed during the fieldwork done for the Trekkopje Mine project – shallow washes and gravel plains. That work was done during a good rainy season and is likely to be reasonably comprehensive.

Appendix C provides an annotated list of the 56 species likely to be present in those two habitats. Of those, 12 are endemic and 11 near-endemic.

"Two protected species of conservation concern are present. The near-endemic *Larriachia marlothii* and the restricted range endemic *Lithops gracilidelineata*, although the identity of the latter needs to be confirmed. Regardless, all *Lithops* species are protected in Namibia and the other species it could be, i.e. *Lithops ruschiorum*, is also endemic and has also been impacted by the uranium rush. In the Trekkopje study area the *Lithops* was found in the vicinity of a shallow wash." (Mannheimer, 2022). Figure 6 below depicts the areas where conservation worthy vegetation is likely to be found.

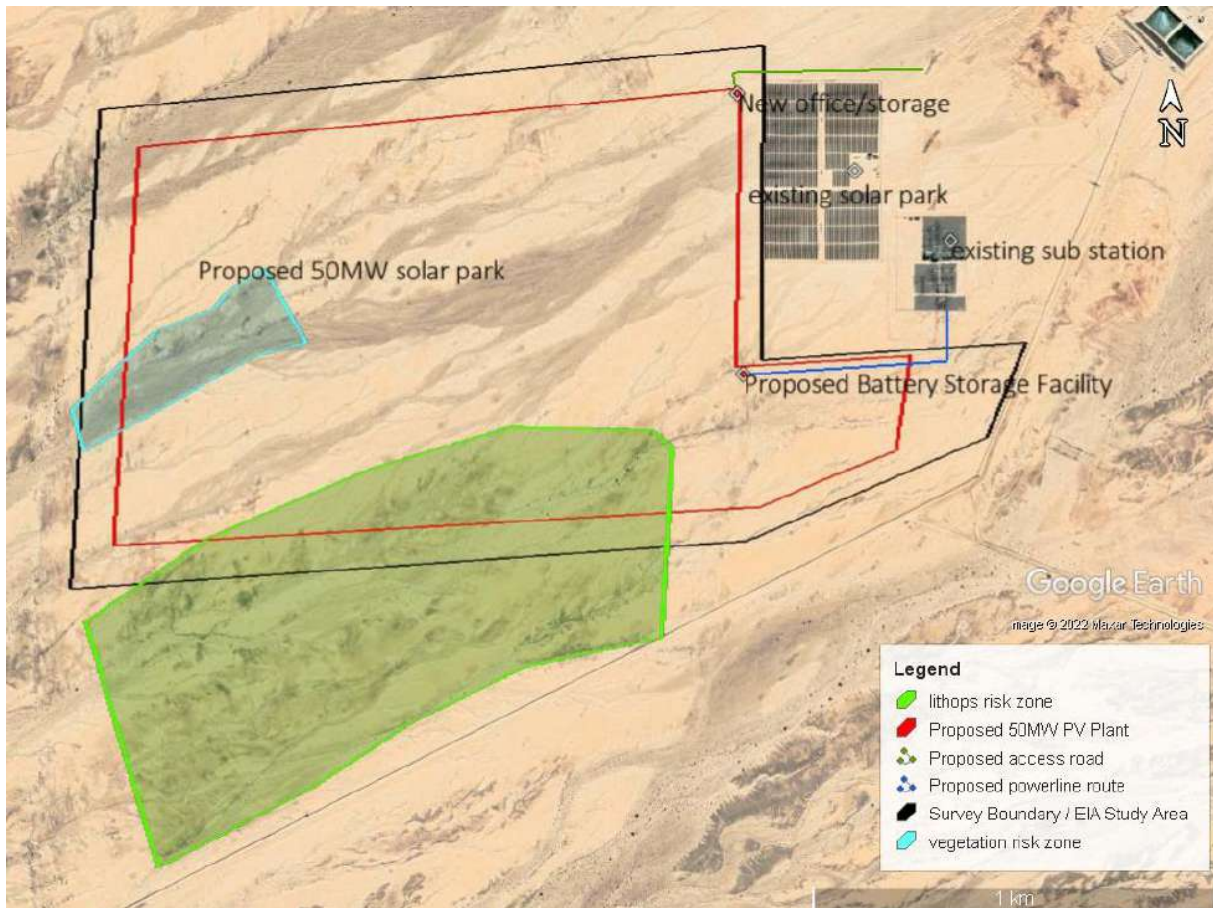


Figure 6: Areas with potentially sensitive vegetation.

6.4 FAUNA

Irish (2012) conducted a study on the fauna occurring in the area for a proposed power line from Rossing to Walmund substation in the vicinity of Arandis. The information in this section gleans from that study, together with what was observed on site, as well as from other secondary sources, as cited.

6.4.1 REPTILES, MAMMALS & AMPHIBIANS

Faunal occurrences within the area are largely determined by the vegetation communities and habitats (Seely & Pallet, 2008).

There are no inhabitants on the site affected, but human impact has caused modified habitats to the east at the Trekkopje Mine sites, the existing solar site and the Trekkopje water pipeline.

According to Irish (2012) a total of 18 mammal species, 24 reptiles and at least 179 invertebrates are known or expected to occur in the area (**Table 4**). Of these, 78 species are of potential concern (endemic, threatened or legal status). A complete list of these species is detailed in Irish (2012).

Table 4: Total number of species known or expected to occur in the study area. Species presence in some cases is non-resident and represented by occasional vagrants only (Irish, 2012)

GROUP	NUMBER OF SPECIES	ENDEMIC SPECIES	THREATENED SPECIES	SPECIES WITH LEGAL STATUS
<i>Mammals</i>	18	7	1	2
<i>Reptiles</i>	24	15	0	0
<i>Amphibians</i>	0	0	0	0
<i>Invertebrates</i>	179	53	0	0
Total:	221	75	1	2

Of the species of potential concern (Irish, 2012) none are restricted in distribution to the project area. Most are mobile and wide ranging, and although they may occasionally pass through the area, they are not residents in it. Resident species are mostly rodents, reptiles and all invertebrates.

Despite this, Irish (2012) confirms that the two habitats identified (i.e. gravel plains, and drainage lines) are sensitive to disturbance. The gravel plains are sensitive since impact on them will not easily recover. The majority of permanent plant life in the area is associated with the drainage lines. Since these habitats are important sources of both food and shelter for animals, disruption of these substrates will affect the biodiversity of the area.

6.4.2 BIRDS

Scott (2012) conducted a study on the birds of the area. Sensitive habitats described above also resemble areas sensitive to the distribution of birds.

Scott & Scott (2012) describe habitats that emerge as being particularly important and/or sensitive for birds. Gravel plains are frequented by birds such as Ludwig's bustard, while drainage lines are a linear oasis with both temporary and permanent vegetation which provide food and shelter for birds and their prey species, and serve as flight paths for groups such as bustards, flamingos and raptors.

A total of 193 bird species have been recorded in the eight quarter degree squares that include the line route of the previous project and adjacent areas and would be similar to the habitats of the current site. For that study, the focus was towards species that have a high biological significance, primarily Red Data species and species sensitive to power line interactions. Twenty of the 193 bird species recorded within the whole of the area, have conservation status (Scott & Scott, 2012).

The at-risk species were divided into the following main groups of birds, namely:

- “Large terrestrial birds: Ludwig's Bustard, Kori Bustard; Rüppell's Korhaan, Red-crested Korhaan, Northern Black Korhaan. The main potential impacts are collisions on power lines and stay wires, disturbance from construction activities; and poaching. Bustards are especially sensitive to disturbance during nesting periods, and may easily desert the nest. Nesting of Ludwig's Bustard has been observed in the area (J Kinahan, pers. com.).
- Raptors: Martial Eagle, Booted Eagle, Lappet-faced Vulture, Verreaux's Eagle, Cape Eagle-Owl, Black-chested Snake-Eagle, Peregrine Falcon; Lanner Falcon and Spotted Eagle-Owl. The main potential impacts are collisions on power lines and associated structures, as well as disturbance.
- Aquatic birds: Great White Pelican, Greater Flamingo, Lesser Flamingo, Maccua Duck. The main potential impact is collisions with power lines.
- Namib (sedentary) endemics with a restricted distribution: Gray's Lark, Rüppell's Korhaan. The main potential impacts are disturbance from construction and habitat loss.” (Scott and Scott, 2012).

6.4.3 SENSITIVITIES RELATED TO BIRDS

Table 5: Sensitivities relating to Fauna

ENVIRONMENTAL FEATURE	DESCRIPTION	SENSITIVITY	POTENTIAL IMPACT
<i>Fauna</i>	Drainage lines and adjacent sandy flats: The majority of permanent plant life in the area is associated with drainage lines. This represents a major source of both food and shelter for animals.	Plants grow slowly under desert conditions, and any that are destroyed through the clearing will not be replaced quickly, if at all.	Loss of plants reduces habitat availability and food sources for many animals, either directly or through the effect on prey species.
<i>Birds</i>	Drainage lines crossing the site	Drainage lines are attractive to birds as shelter, fodder, nesting sites and possible flight paths.	• Breeding disturbance • Loss of habitat
	• Lack of large trees • Ephemeral vegetation (including grass)	• Nesting on power supply structures • Response to ephemeral resources results in nomadism	• Electrocutions • Collisions with conductors

6.5 ARCHAEOLOGY

Kinahan (2020) (**Appendix D**) has performed previous archaeological surveys in the area, and has found relatively low density of archaeological sites. These are shown on the map in **Figure 7**.

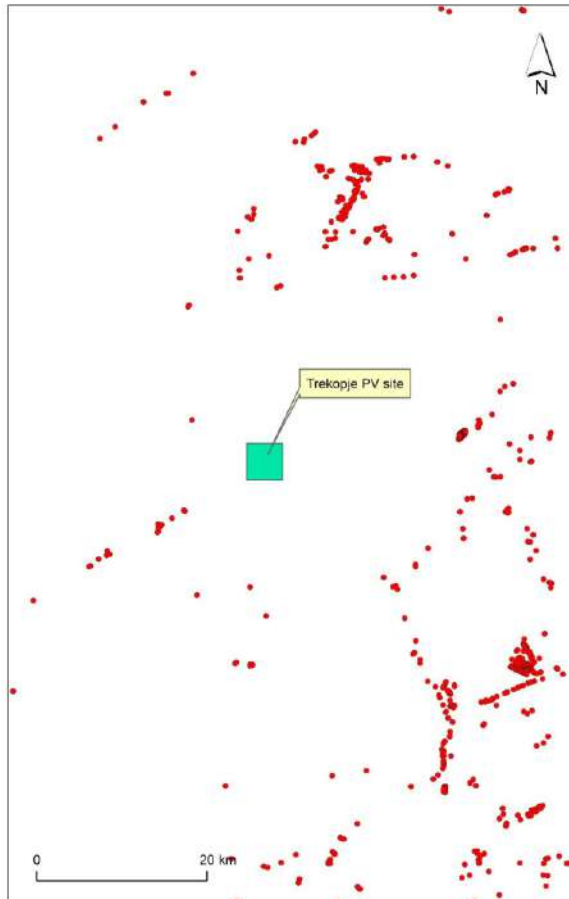


Figure 7: Distribution of archaeological site near the project site (Kinahan, 2022).

They are from the Late Pleistocene to late Holocene periods. These sites are normally found on outcrops, and within 5km radius from reliable water sources. The proposed project site is located on a site is situated between outcrops, but is void of the features typical of these sites.

The specialist does recommend a chance-find procedure to be included in the Environmental Management Plan.

There is also an historical tin mine at the current Trekopje mine site, as well as some historical sites of the 1915 Allied invasion of German South West Africa. The locality of which are well established based on previous fieldwork. None of these are on or near the current site.

There is also no indication of early historical farming or mining activity at the site.

Hence, based on previous work in the area, the site is not archaeologically sensitive. A chance-find procedure is however still prescribed for inclusion in the EMP.

6.6 SOCIO-ECONOMIC ENVIRONMENT

6.6.1 OVERVIEW OF THE ERONGO REGION

According to the 2011 National Housing and Population Census Preliminary Results, the Erongo Region had a population of 150 400 people, resulting in a 39,7 % growth rate for the period 2001-2011. The region comprises seven constituencies, namely Karibib, Daures, Omaruru, Arandis, Brandberg, Walvis Bay Rural, Walvis Bay Urban and Swakopmund. Compared to other regions in Namibia, the Erongo Region has the second highest level of development and the second lowest rate of human poverty.

The economic activities of the Erongo Region revolve around its natural resources both renewable such as fish, as well as non-renewable resources which include minerals. Namibia had experienced an unprecedented interest its uranium deposits, resulting in the establishment of a number of uranium mines in this region. Uranium prices, scarcity

of water in the region, and other economic influences however caused a downward trend in international uranium prices, forcing the mines to scale down on the production, or to put their production on care and maintenance, such as the case with the Trekkopje Uranium Mine adjacent to this project. Recently, prices have improved and there is a general upturn in activity. The unemployment rate and increased costs of living are however still placing tremendous pressure on the livelihoods of the people in the region, particularly also on this residing in Arandis, with many job losses and associated poverty and resulting desperation, being prevalent.

Besides the economic downturn in the mining industry, Covid lockdowns causing market insecurities and global economic slump have also influenced Namibia and the Erongo Region.

6.6.2 ARANDIS

Arandis is the closest town to the site. It was established by Rössing Uranium Limited in 1976 in order to provide housing for workers and their families (Arandis Town Council, 2010). Up until 1990, Rössing Uranium Limited managed the mining town, while building schools, sport fields and a hospital. In 1994, Arandis was proclaimed as a town with the Arandis Town Council (ATC) taking of the administrative functions of the town (Stubenrauch Planning Consultants, 2011).

The National Housing Census data provided an estimate of 10,200 people for Arandis in 2011. (NPC, 2011). Unfortunately, current figures for the town are not available, and it is difficult to forecast due to possible exits in the population to find alternative sources of income following job losses.

Typically, of a mining town such as Arandis, the majority of the people were historically employed either by the mine or contractors working for Rössing Uranium Limited, and were thus solely dependent on the Mine. Many of the residents are however now also employed at Husab Mine.

According to Stubenrauch Planning Consultants, the town has 2,254 proclaimed erven (Stubenrauch Planning Consultants, 2011). Approximately 78 % of the houses in Arandis are built with cement bricks, but over 45% of their roofs are made from asbestos sheeting (Ashby, 2012). There was a house occupancy rate of 100 %, which in turn also curbs vandalism (Ashby, 2012).

The economic environment of Arandis mainly revolves around the mine. Other economic activities include light manufacturing, retail, shebeens and restaurants as well as food supply and accommodation (Arandis Town Council, 2010). The town historically had no supermarkets, but this has changed, contributing to the local retail industry.

Consequently, it has been realised that economy of this town needs to be diversified. The Local Economic Development Strategy has been adopted by the ATC in order to facilitate and stimulate the development of this town.

6.6.3 #GAINGU CONSERVANCY

The project area falls within the #Gaingu Conservancy, which is a communal conservancy Governed by 9 committee members. The resources available in this community comprise mainly the Spitzkoppe National Monument Area and the Rössing Mountain. Wildlife in the area comprise mainly Kudu, gemsbok, springbok, leopard.

The project site is far removed from the hotspot tourism area utilised by the conservancy and as confirmed by the committee representative, no conflict with the proposed project is anticipated.

6.6.4 SENSITIVITIES

The following socio-economic sensitivities are likely to result from the proposed project (**Table 6**):

Table 6: Sensitivities relating to Socio-Economic Environment

ENVIRONMENTAL FEATURE	DESCRIPTION	SENSITIVITY	POTENTIAL IMPACT
Socio-economic environment	Economic slump and associated high unemployment rate	High interest in the project	Positive – creation of jobs during construction.
	Workforce accommodation	No accommodation facilities near the site	Additional impact on the natural environment due to accommodation of workforce at the site.
	#Gaingu Conservancy	The site falls within this conservancy's boundaries	Possible conflict with conservancy efforts.

7 IMPACT ASSESSMENT

7.1 METHODOLOGY EMPLOYED FOR THE IMPACT ASSESSMENT

Each of the identified impacts listed above were assessed to determine the true significance of the proposed project on the environment. The criteria used to describe the significance of the impact on the particular environmental component (i.e. vegetation, biodiversity, birds, archaeology and socio-economic environment) are contained in the **Table 7** below:

Table 7: Criteria for the assessment of impacts

DESCRIPTION	
Nature	Reviews the type of effect that the proposed activity will have on the relevant component of the environment and includes "what will be affected and how?".
Extent	Geographic area. Indicates whether the impact will be within a limited area (on site where construction is to take place); local (limited to within 15 km of the area); regional (limited to ~100 km radius); national (limited to the coastline of Namibia); or international (extending beyond Namibia's borders).
Duration	Whether the impact will be temporary (during construction only), short term (1-5 years), medium term (5-10 years), long term (longer than 10 years, but will cease after operation) or permanent.
Intensity	Establishes whether the magnitude of the impact is destructive or innocuous and whether or not it exceeds set standards, and is described as none (no impact); low (where natural/social environmental functions and processes are negligibly affected); medium (where the environment continues to function but in a noticeably modified manner); or high (where environmental functions and processes are altered such that they temporarily or permanently cease and/or exceed legal standards/requirements).
Probability	Considers the likelihood of the impact occurring and is described as uncertain, improbable (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of prevention measures).
Significance	Significance is given before and after mitigation. Low if the impact will not have an influence on the decision or require to be significantly accommodated in the project design, Medium if the impact could have an influence on the environment which will require modification of the project design or alternative mitigation (the route can be used, but with deviations or mitigation) High where it could have a "no-go" implication regardless of any possible mitigation (an alternative route should be used).
Status of the impact	A statement of whether the impact is positive (a benefit), negative (a cost), or neutral. Indicate in each case who is likely to benefit and who is likely to bear the costs of each impact.
Degree of Confidence in Predictions	Is based on the availability of specialist knowledge and other information.

7.2 ASSESSMENT OF IMPACTS

Table 8 displays the list of impacts and provides the ratings according to the criteria above. It provides impact significance in the scenario when mitigation has not been applied, and after mitigation, i.e. when mitigation has been implemented.

The assessment is for the construction and operational phases. The decommissioning phase is similar to the construction phase, with the difference that the focus is more on the choices of the future of all the structural elements on the site. A decommissioning plan will therefore be a requirement for the decommissioning phase.

Generic impacts with associated mitigation such as waste management, pollution control and water conservation, and health and safety principles applicable to all projects have been included in the Environmental Management Plan. Specific impacts and measures in this regard, of particular concern to this project, are mentioned in the table below.

Table 8: Impact assessment of the proposed solar park and associated infrastructure, including the access road, power line, water and sewage storage facilities.

PROJECT ASPECT	IMPACT STATUS/ NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE-MITIGATION	MITIGATION/ ENHANCEMENT (ELABORATED ON IN THE ESMP)	POST-MITIGATION
CONSTRUCTION PHASE ³									
Overall implementation of the project	Positive Increased power security for the country and curb increase in future cost of energy.	National	Long term	Medium	Definite	High	Medium	N/A	Medium
	Positive Reduced need to import ESKOM coal generated electricity followed by reduced overall carbon	International	Long term	Medium	Definite	High	Medium	Continue replacing greener energy with energy generated from non-renewables where feasible.	Medium

³ The activities of the construction phase are similar to the decommissioning phase. Therefore, the impact assessment for the former also applies to the latter phase.

PROJECT ASPECT	IMPACT STATUS/ NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE-MITIGATION	MITIGATION/ ENHANCEMENT (ELABORATED ON IN THE ESMP)	POST-MITIGATION
	footprint.								
	Positive Contribution to job security, livelihoods and economic spinoffs in the region and Arandis	Regional	Short term	Medium	Definite	High	Low	Locals first policy	Low to medium
	Negative Increased pressure on housing and infrastructure in Arandis caused by additional labour demand and labour influx.	Local	Short term	High	Highly probable	High	Medium	Locals first policy – local residents continue living in existing housing with minimum additional housing required. Should this not suffice, identify with Arandis Town Council, a temporary site for housing in case the mining industry recruits again. Negotiate all infrastructure provision with Arandis Town Council.	Low

PROJECT ASPECT	IMPACT STATUS/ NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE-MITIGATION	MITIGATION/ ENHANCEMENT (ELABORATED ON IN THE ESMP)	POST-MITIGATION
	Negative Future conflict and/or misunderstandings between the community, conservancy and leadership and the proponent	Regional – conservancy stretches to Spitzkoppe	Short	High	Probable	High	Medium - High	Avoid conflict by managing expectations within the community, have regular meetings to communicate activities, participation opportunities and hear grievances, implement a grievance mechanism.	Low
	Negative Physical destruction of vegetation, including species of conservation concern, due to illegal collection of species and wood collection.	Local (only around plant footprint locations, access road, laydown areas etc.)	Long term	Medium	Definitive	High	Medium	No accommodation of workforce on site. Provide wood/gas to workforce for cooking. Prohibit species and wood collection. Limit the movement of people to the site only.	Low
Vegetation clearance	Negative Decline in populations of endemic plant and animal species of high concern and loss of	Local	Long term	Medium	Probable	High	Medium	Avoid the identified risk zones, keep collateral damage to a minimum. Implement and monitor, Specialist involved to identify Lithops before	Low

PROJECT ASPECT	IMPACT STATUS/ NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE-MITIGATION	MITIGATION/ ENHANCEMENT (ELABORATED ON IN THE ESMP)	POST-MITIGATION
	important fauna and flora habitats , including displacement of associated biota such as birds and their food sources. (vegetation listed in red in Table 1, Appendix C).							construction, DO NOT remove the vegetation underneath the solar panels, except larger species which are in the way of the panels. DO NOT allow any mechanical equipment for site levelling or the removal of vegetation. Use designated roads / tracks only.	
Levelling and introduction of stormwater systems	Removal or reduction in function of ecosystem services, i.e. the drainage lines as water conduits, providing natural run-off and water to habitats.	Local to regional	Long term	Medium	High	High	Medium	Do not use the identified risk zones for panels. If it needs to be utilised, source a vegetation specialist to survey the risk zones and identify areas of protection. Retain the drainage lines for natural flow of rainwater.	

PROJECT ASPECT	IMPACT STATUS/ NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE-MITIGATION	MITIGATION/ ENHANCEMENT (ELABORATED ON IN THE ESMP)	POST-MITIGATION
								Do not alter or flatten the drainage lines. Do not remove vegetation from the drainage lines.	
OPERATIONAL PHASE									
Existence of 500m power line pylons and conductors.	Negative Collisions with transmission lines or wire stays, and / or electrocution by transmission lines cause injuries and mortalities; particularly priority species.	Site	Long-term	Low	Uncertain	Low	Low	Fit the power line poles with anti-perch devices and air-safety gaps as per advice of a bird specialist from the region. Fit the lines with flight diverters as per advice of a bird specialist from the region Monitor all structures for any impacts, and apply retro-mitigation as appropriate.	Low

PROJECT ASPECT	IMPACT STATUS/ NATURE	EXTENT	DURATION	INTENSITY	PROBABILITY	DEGREE OF CONFIDENCE	SIGNIFICANCE		
							PRE-MITIGATION	MITIGATION/ ENHANCEMENT (ELABORATED ON IN THE ESMP)	POST-MITIGATION
DECOMMISSIONING PHASE ⁴									
Waste disposal	Negative Increased waste in the area and region, particularly caused by the need to discard the solar panels and other parts arrays.	Regional	Permanent	High	Definite	High	Medium	Agree with a recycling company to recover the recyclable components of the panels and to dispose of the remaining parts in a responsible way, removing all elements from the site.	Medium-low

⁴ General impact management of this phase, including the need for rehabilitation, is contained in the ESMP, and the construction impacts will generally also be applicable to this phase.

8 CONCLUSIONS AND RECOMMENDATIONS

The positive impacts of this project include the creation of some 60 job opportunities in an overall economic slump, with many jobless people in the nearby Arandis and in the Region, following downscaling of many of the mines in the area. The renewable energy mix in Namibia will be strengthened by this project, reducing the reliance for power from South Africa and other countries.

Besides impacts generally associated with all construction projects, including health and safety, waste, pollution and water use, all of which can be readily mitigated to acceptable levels on this project, with recommended management actions provided in the EMP, the following impacts require specific attention:

- Habitat, vegetation and fauna loss due to vegetation clearance, illegal harvesting and collection during construction. Only the necessary vegetation should be cleared by hand and no mechanical equipment is to be used for this purpose. The vegetation is to remain under the solar panels, with the exception of larger plant specimens that are in the way. The workforce should be prohibited to move beyond the construction site. The lithops and vegetation/no-go zones (**Figure 8**) should be left intact, since these are important water conduits and/or areas with potential conservation worthy vegetation. If these zones must ultimately be used, a dedicated vegetation field survey be conducted beforehand and potential conservation worthy vegetation areas be protected or such species be relocated.

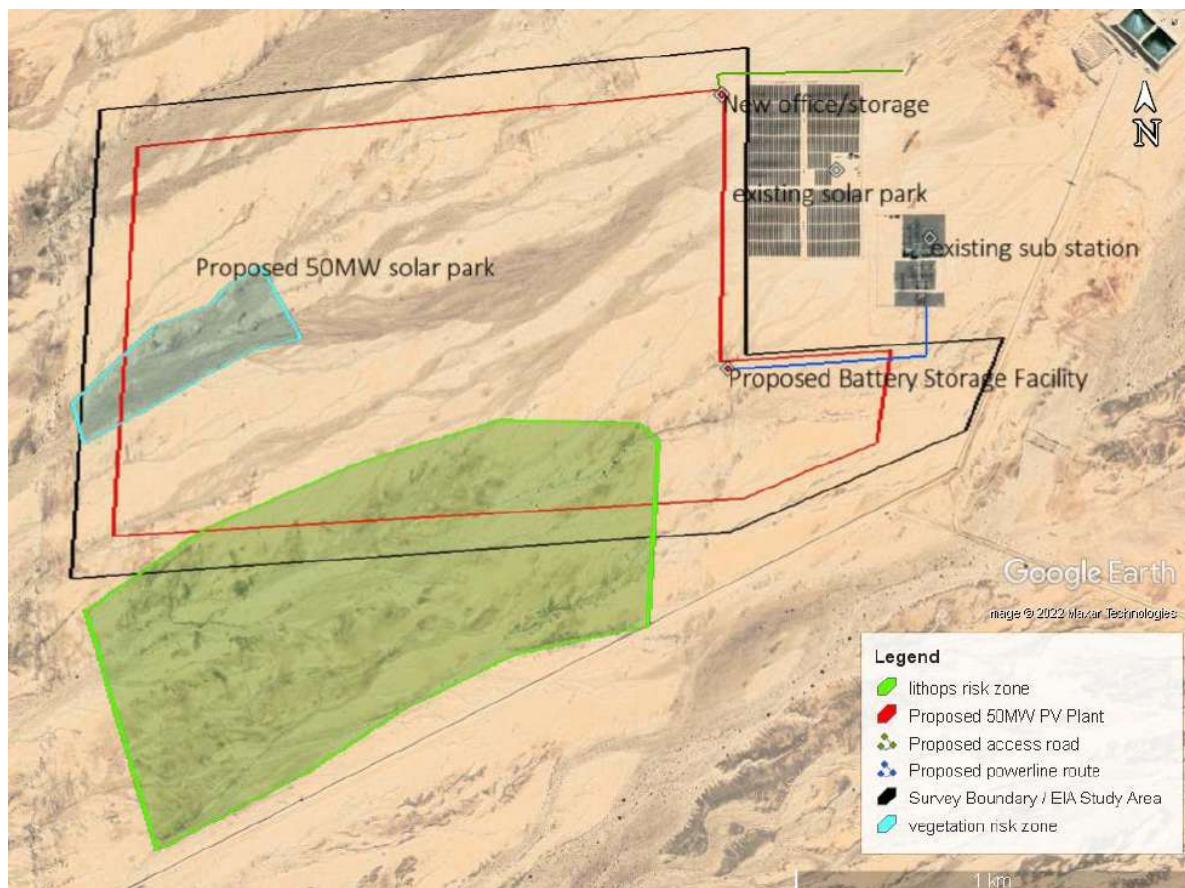


Figure 8: Vegetation risk zones to be avoided.

- Increased pressure on housing and infrastructure in Arandis, caused by additional labour demand and labour influx. A locals first policy should be adopted, employing unemployed people from the community who already have housing. Alternatively, or for those without housing, an agreement should be reached with the Arandis Town Council regarding a temporary accommodation site for the workforce. It is of utmost importance that the workforce not be accommodated on site. **Furthermore, it is important that adequate ablution facilities be provided on site to ensure they do not move around and defecate in the area.**
- Future conflict and/or misunderstandings between the community, conservancy and leadership and the proponent. The site is far removed from the conservancy resources of the community, which are mainly focussed around the Spitskoppe area and the Rössing Mountain. However, there may be expectations from the community about this project. It is important that realistic expectations from the project be in terms of labour and other opportunities be communicated to the community, including what benefits may be expected and who will be the beneficiaries. There should be a healthy communication channel with the community, and they should be involved where possible, e.g. utilising the pallets/packaging of the solar panels.
- Removal or reduction in function of ecosystem services, i.e. the drainage lines as water conduits, providing natural run-off and water to habitats. It is important that this important function of the drainage lines in the area be preserved. The drainage lines are flat, therefore it is possible to level the area only slightly, leaving the natural drainage of the area intact, with the solar panels placed over it.
- Collisions with transmission lines or wire stays, and / or electrocution by transmission lines cause injuries and mortalities; particularly priority species. This impact is expected to be low, based on the short length of the power line and the lack of bird-attracting habitat at the site where the power line will be constructed. Advice from a bird specialist in terms of relevant mitigation measures on lines and poles should be solicited before construction.
- Increased waste in the area and region, particularly caused by the need to discard the solar panels and other parts arrays when these need to be replaced or when the project ends. Ensure that the panels are recycled as far as possible and that all components of the solar array, including infrastructure, is removed from site, and the area rehabilitated. Consult with the community for any possible future uses of some of the infrastructure.

- These negative impacts can all be managed using available mitigation measures. The project is generally not situated in an ecologically or socially sensitive area and normal environmental management strategies will be adequate to address those impacts identified. They are listed in the Environmental Management Plan which needs to be implemented diligently.

It is therefore recommended that Environmental Clearance be granted to the project.

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APPENDIX C

Table 9: Annotated list of species likely to occur on the proposed site.

Species	Protected by Nature Conservation Ordinance No. 4 of 1975, including amendments	Notes	Shallow washes	Gravel plains
Endemic				
Near Endemic				
Protected				
Adenolobus pechuelii (Kuntze) Torre & Hillc. subsp. pechuelii		Widespread and reasonably common in the central Namib, restricted to washes		
Amphiasma merenskyanum Bremek.		Widespread, reasonably common	1	
Anticharis ebracteata Schinz		Reasonably widespread, frequent where it occurs, unlikely to be substantially affected by this project		1
Anticharis inflata Marloth & Engl.		Reasonably widespread, frequent where it occurs, unlikely to be substantially affected by this project		1
Aristida parvula (Nees) De Winter		Reasonably widespread, common		1
Asparagus pearsonii Kies			1	
Blepharis grossa (Nees) T. Anderson		Reasonably widespread, common	1	
Brachiaria glomerata (Hack.) A. Camus			1	
Calicorema capitata (Moq.) Hook. F.			1	
Centropodia glauca (Nees) Cope			1	
Chascanum garipense E. Mey.			1	
Citrullus ecirrhosus Cogn.			1	
Cleome angustifolia Forssk. subsp. diandra (Burch.) Kers				1
Cleome foliosa Hook. F. var. lutea (Sond.) Codd & Kers		Reasonably widespread, common	1	
Codon schenckii Schinz		Reasonably widespread, common	1	
Commicarpus squarrosus (Heimerl) Standl.			1	
Corallocarpus welwitschii (Naudin) Hook.f. ex Welw.			1	
Enneapogon scaber Lehm.				1
Euphorbia glanduligera Pax			1	
Euphorbia phylloclada Boiss.			1	
Fagonia isotricha Murb. var. spinescens (Schwarz) Hadidi		Reasonably widespread, common	1	
Forsskaolea candida L.f.			1	

Species	Protected by Nature Conservation Ordinance No. 4 of 1975, including amendments	Notes	Shallow washes	Gravel plains
<i>Heliotropium oliveranum</i> Schinz		Reasonably widespread, common		1
<i>Hermannia complicata</i> Engl.		Reasonably widespread, occasional, usually found in seasonal depressions		1
<i>Hermannia solaniflora</i> K. Schum.		Reasonably widespread, common	1	1
<i>Hermbsstaedtia spathulifolia</i> (Engl.) Baker		Reasonably widespread, common	1	
<i>Indigofera auricoma</i> E. Mey.				1
<i>Indigofera heterotricha</i> DC.			1	
<i>Kissenia capensis</i> Endl.			1	
<i>Kohautia caespitosa</i> Schnizl. subsp. <i>brachyloba</i> (Sond.) D.Mantell			1	
<i>Larryleachia marlothii</i> (N.E. Br.) Plowes	X	Reasonably widespread but never common	1	
<i>Limeum argute-carinatum</i> Wawra & Peyr				1
<i>Lithops</i> sp.	X	Likely to be <i>Lithops gracilidelineata</i> subsp. <i>delineata</i> , which is both endemic and protected. It is restricted to the central Namib and has already been impacted by several uranium projects.		1
<i>Lophiocarpus polystachyus</i> Turcz.			1	
<i>Lycium bosciifolium</i> Schinz			1	
<i>Monechma cleomoides</i> (S. Moore) C.B. Clarke		Widespread, common		1
<i>Monechma genistifolium</i> (Engl.) C.B. Clarke subsp. <i>genistifolium</i>		Widespread, comon	1	
<i>Ornithogalum stapfii</i> Schinz		Widespread, comon	1	1
<i>Petalidium lanatum</i> (Engl.) C.B. Clarke				1
<i>Petalidium variabile</i> (Engl.) C.B. Clarke		Reasonably widespread, reasonably common	1	
<i>Salsola</i> sp.			1	
<i>Sesuvium sesuvioides</i> (Fenzl) Verdc.			1	1
<i>Sporobolus nebulosus</i> Hochst.		Reasonably widespread, common	1	
<i>Stipagrostis ciliata</i> (Desf.) De Winter var. <i>capensis</i> (Trin. & Rupr.) De Winter			1	1
<i>Stipagrostis damarensis</i> (Mez) De Winter		Reasonably widespread, common	1	
<i>Stipagrostis hirtigluma</i> (Trin. & Ropr.) subsp. <i>hirtigluma</i>				1
<i>Stipagrostis obtusa</i> (Delile) Nees				1
<i>Stipagrostis subacaulis</i> (Nees) De Winter		Widespread, common		1
<i>Stipagrostis uniplumis</i> (Licht.) De Winter				1
<i>Tribulus zeyheri</i> Sond. subsp. <i>zeyheri</i>			1	

Species	Protected by Nature Conservation Ordinance No. 4 of 1975, including amendments	Notes	Shallow washes	Gravel plains
Trichodesma africanum (L.) Lehm.			1	
Tricholaena monachne (Trin.) Stapf ex C.E. Hubb.			1	
Zygophyllum cylindrifolium Schinz		Reasonably widespread, common		1
Zygophyllum simplex L.				1
Zygophyllum spongiosum Van Zyl			1	
Zygophyllum stapfii Schinz		Widespread, common	1	



sorexa

Submitted to: Sorexa Sun Energy (Pty) Ltd.

Attention: Mr. Israel Shihepo

2 Schutzen Street

P O Box 27527

Windhoek, Namibia.

REPORT:

ENVIRONMENTAL CLEARANCE CERTIFICATE

RENEWAL - COMPLIANCE REPORT

PROJECT NUMBER: ECC-43-687-REP-02-C

REPORT VERSION: REV 01

DATE: 08 JANUARY 2026



TITLE AND APPROVAL PAGE

Project Name: Environmental clearance certificate renewal - compliance report
Client Company Name: Sorex Sun Energy (Pty) Ltd.
Client Name: Mr. Israel Shihepo
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DISCLAIMER

The report has been prepared by Environmental Compliance Consultancy (Pty) Ltd (ECC) (Reg. No. 2022/0593) on behalf of the Proponent. Authored by ECC employees with no material interest in the report's outcome, ECC maintains independence from the Proponent and has no financial interest in the Project apart from fair remuneration for professional fees. Payment of fees is not contingent on the report's results or any government decision. ECC members or employees are not, and do not intend to be, employed by the Proponent, nor do they hold any shareholding in the Project. Personal views expressed by the writer may not reflect ECC or its client's views. The environmental report's information is based on the best available data and professional judgment at the time of writing. However, please note that environmental conditions can change rapidly, and the accuracy, completeness, or currency of the information cannot be guaranteed.

EXECUTIVE SUMMARY

Sorexa Sun Energy (hereto referred to as “Sorexa or the Proponent”), a subsidiary of InnoSun Energy Holding Namibia (InnoSun), have approval to construct and operate a (fifty) 50 megawatt (MW) photovoltaic (PV) solar plant, referred to as the Project, of which 9.8 megawatt has successfully been constructed and is operational, located approximately 25 km northwest (NW) of Arandis and adjacent to the Trekkopje Uranium Mine. The Project’s Phase One’s construction phase commenced in August 2023 and was completed in August 2025. Ondengu Construction (Ondengu) was contracted to undertake the site preparation work of Phase 1 (i.e. construction of a 9.8 megawatt (MW) solar power plant) while Namibian Engineering Corporation (NEC) was contracted to conduct the mechanical and electrical scope phase of the Project. The remainder of the Project development will take place in the future.

Environmental compliance is governed by the Project’s construction environmental plan (CEMP), approved under an environmental clearance certificate (ECC-2200030), and issued by the Ministry of Environment, Forestry and Tourism (MEFT), valid from 12 December 2022 to 12 December 2025 (Appendix B). This report, submitted as part of the clearance renewal application, summarises environmental performance based on monthly, quarterly and bi-annual audits and reports from 2023 to 2025, compiled by Environmental Compliance Consultancy (Pty) Ltd (ECC), a third-party consultant ensuring compliance with the CEMP.

The Proponent completed construction in August 2025 and proceeded into the operational phase. As such, the existing environmental management plan (EMP), with construction management measures has been updated into an operational environmental management plan (OEMP) (Appendix E) and is submitted along with this report for approval by the Ministry of Environment, Forestry and Tourism (MEFT) Department of Environmental Affairs and Forestry (DEAF), along with the environmental clearance certificate renewal application. An additional site-specific biodiversity sensitivity survey was conducted by ECC as part of the progress from construction to operations (Appendix D). Recommendations made have been included in the updated OEMP.

Non-conformances identified during the period under review include the lack of drip trays to prevent hydrocarbon leaks and spills from contaminating soil. Upon completion of construction activities, all equipment was removed from the Project site and all contaminated soils were cleaned and removed to the hazardous waste facility in Walvis Bay. Refuse bags were provided to construction workers daily and waste was removed at the end of each working day during construction activities. General waste was disposed of at the Arandis landfill, recyclable waste was transported to Swakopmund and hazardous waste was sent to Walvis Bay for appropriate handling. Since operations started, the Proponent is disposing of their waste in the Trekkopje Mine waste skip. Based on the monthly inspection conducted by the asset management (InnoSun) in November 2025, waste bins were available on-site and waste bins have been labelled since the previous finding.

It is thus recommended that the inspection checklist be revised to align with compliance aspects of the updated OEMP. Overall, the Proponent has shown commendable efforts to improve the site and correct non-conformances identified during inspections and audits of the reporting period.

TABLE OF CONTENTS

1	Introduction	8
1.1	Background.....	8
1.2	Operations overview	8
1.3	Purpose of the report.....	11
1.4	Onsite information collection.....	11
1.5	Environmental Compliance Consultancy (ECO).....	11
1.6	The Proponent of the Project.....	11
2	Project overview	12
3	Renewal activities	13
4	Environmental compliance audit	14
4.1	Activities conducted for the period under review.....	14
4.2	Bi-annual compliance audits and reporting.....	14
4.3	Biodiversity survey.....	14
4.4	Environmental compliance audit findings.....	16
5	Conclusion and recommendations.....	40

LIST OF TABLES

Table 1 – Proponent’s details.....	11
Table 2 - ESMP compliance audit	16

LIST OF FIGURES

Figure 1 – Sorexsa PV power plant location	9
Figure 2 - Sensitive vegetation and lithops risk area in relation to the overall Project footprint (150 ha)	10

APPENDICES

Appendix A – Environmental management plan (EMP).....	41
Appendix B – Environmental clearance certificate (ECC-2200030)	42
Appendix C – Bi-annual reports August 2023 to September 2025.....	43
Appendix D – Operational environmental management plan (OEMP)	44
Appendix E – Biodiversity Survey report.....	45

ABBREVIATIONS

Abbreviation	Description
AIDS	acquired immunodeficiency syndrome
ATC	Arandis Town Council
BESS	battery energy storage system
CCTV	closed-circuit television
DEAF	Department of Environmental Affairs and Forestry
ECC	Environmental Compliance Consultancy (Pty) Ltd
ECO	environmental control officer
EMA	Environmental Management Act, No. 7 of 2007
EMP	environmental management plan
ESIA	environmental and social impact assessment
ER	employee respective
GIS	geographic information system
GPS	global positioning system
ha	hectare
HIV	human immunodeficiency virus
InnoSun	InnoSun Energy Holding Namibia (Pty) Ltd
kV	kilovolt
Ltd	limited
MBF	Modified Buyer Framework
MEFT	Ministry of Environment, Forestry and Tourism
m	metre
MoHSS	Ministry of Health and Social Services
MSDS	material safety data sheet
MW	megawatt
NHC	National Heritage Council
NEC	Namibian Engineering Corporation
NIMT	Namibian Institute of Mining Technology
O&M	operations and maintenance team
OEMP	operational environmental management plan
PPE	personal protective equipment
Pty	proprietary
PV	photovoltaic
SAPP	Southern Africa Power Pool
SCADA	supervisory control and data acquisition
SMEs	small and medium enterprises
Sorex/Proponent	Sorex Sun Energy (Pty) Ltd
TB	tuberculosis

1 INTRODUCTION

1.1 BACKGROUND

Sorex Sun Energy (Sorex or Proponent), a subsidiary of InnoSun Energy Holding Namibia (InnoSun), contracted Ondengu Construction (Ondengu) for the site preparation work, and Namibian Engineering Corporation (NEC) for the mechanical and electrical installation, for the Phase 1 development (i.e. 9.8 MW) of a fifty (50) megawatt (MW) photovoltaic (PV) solar power plant, located adjacent to Trekkopje Uranium Mine in the Erongo Region, Namibia (Figure 1). Phase 1 occupies approximately 20 hectares (ha) of the total proposed 150 ha Project footprint, as shown in Figure 2.

Activities associated with the construction and operational phase of the solar power plant trigger the Environmental Management Act, No. 7 of 2007 (EMA) and specifically listed activities within the Act's associated Regulations of 2012. For this reason, an environmental management plan (EMP) (Appendix A), with numerous construction management measures was developed to support the issuance of the environmental clearance certificate (ECC-220030) (Appendix B). It is thus a legal requirement for all contractors involved in the Project to comply with the EMP criteria and the construction management measures (as listed in Appendix A and Appendix B). The EMP has been updated into an OEMP (Appendix D) for operational activities and will be submitted for approval by (MEFT) (the competent authority) along with the environmental clearance certificate renewal application.

The Project is closely located in a sensitive area where lithops can be found. Lithops are a protected plant species that is very difficult to see. Due to these factors, it is the responsibility of the Proponent to ensure that construction activities are kept at a safe distance to avoid any damage (Figure 2).

Phase 1 of the Project is fully constructed. A 5MW/10MWh battery energy storage system (BESS) will be installed, commissioning is planned for June 2026. The overall environmental impacts of the passive operating site are extremely low. Renewal of this environmental clearance certificate should be granted to ensure continued operation of the site. However, the Proponent does envision utilising the remainder of the approved site to construct future phases of the PV plant.

1.2 OPERATIONS OVERVIEW

Listed below are the main Project infrastructure components:

- Pile foundations;
- Solar panels and support structures;
- Inverters and step-up transformers; and

33 kilovolt (kV) underground cable.

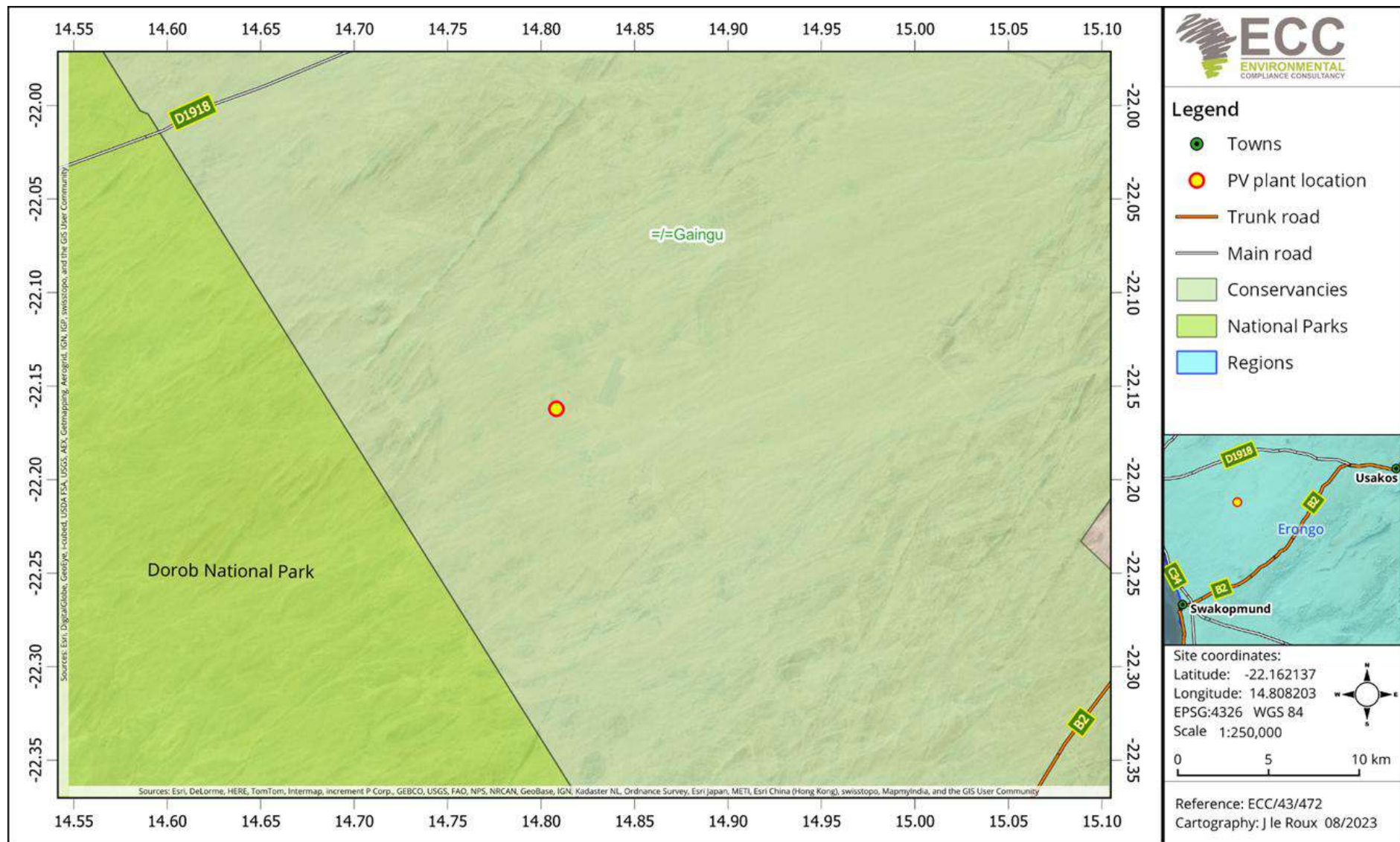


Figure 1 – Sorex PV power plant location

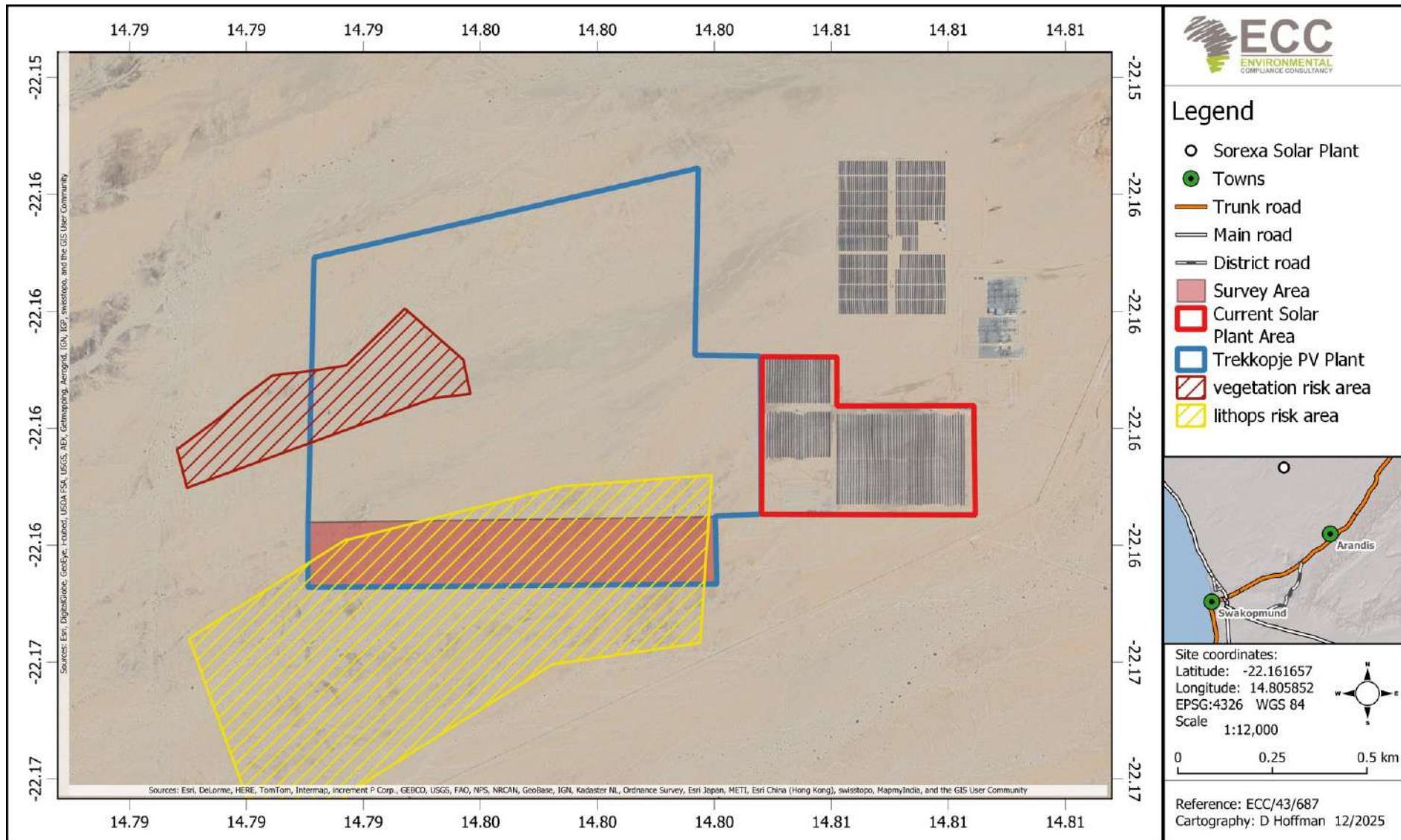


Figure 2 - Sensitive vegetation and lithops risk area in relation to the overall Project footprint (150 ha)

1.3 PURPOSE OF THE REPORT

Environmental Compliance Consultancy (Pty) Ltd (ECC) was engaged by the Proponent to prepare the environmental clearance certificate renewal application for the operation of a fifty (50) MW PV solar plant, located close to Trekkopje Uramium Mine, Erongo Region, Namibia.

The purpose of this environmental compliance report is to document findings and implementation of the site environmental management plans and compliance with the EMP. This report also reports on environmental performance and/or concerns that occurred during the Project implementation (construction) phase and to note any required changes or updates to the EMP requirements and conditions as the Project evolves. This is in line with the conditions of the approved environmental clearance certificate, specifically condition No. 3, which states that MEFT reserves the right to attach further legislative and regulatory conditions during the operational phase of the Project (Appendix B).

1.4 ONSITE INFORMATION COLLECTION

ECC made use of an online data collection software, IAuditor, which allows the users to build a customised site-specific template according to the Proponent's EMP. Users of the template can add notes, take and annotate photos of the inspection / audit, or actions to be considered.

1.5 ENVIRONMENTAL COMPLIANCE CONSULTANCY (ECO)

Sorexa Sun Energy (Pty) Ltd has appointed Environmental Compliance Consultancy (Pty) Ltd (ECC) for the provision of environmental control officer (ECO) services for the duration of the Project. This includes drafting this environmental clearance certificate renewal application.

1.6 THE PROPONENT OF THE PROJECT

Sorexa Sun Energy (Pty) Ltd is the Proponent for the Project. The Proponent's contact information can be found Table 1.

Table 1 – Proponent's details

Company representative:	Contact details:
Mr Israel Shihepo Asset Manager	Innosun Energy Holdings (Pty) Ltd.: P O Box 27527, Windhoek ishihepo@innosun.org +264 (61) 254 700

2 PROJECT OVERVIEW

Sorex Sun Energy (Pty) Ltd, a subsidiary of InnoSun Energy Holdings, supplies electricity through renewable energy sources. Power generated at the facility is supplied to customers within and outside Namibia through the Modified Buyer Framework (MBF) and the Southern Africa Power Pool (SAPP). The Project plays an important role in strengthening Namibia's energy security and supporting the country's transition to sustainable and renewable green energy. It contributes to reducing the national carbon footprint and create opportunities for carbon credit generation and trading.

During the construction phase, the Project created approximately 80 job opportunities, many of which were filled by local community members. Construction of Phase 1 (i.e. 9.8 MW) of the solar power plant was completed in August 2025, after which the Project successfully progressed into the operational phase.

The fifty (50) MW photovoltaic (PV) solar energy facility is located on land adjacent to the Trekkopje Uranium Mine in the Erongo Region and covers an area of approximately 150 ha. A land lease agreement was granted by !Oe-#Gan traditional authority.

The Sorex solar power plant falls within the schedule of listed activities requiring a full environmental assessment (EA), including a scoping, an environmental and social impact assessment (ESIA) and an environmental management plan (EMP), in accordance with the national environmental assessment process, as outlined in the EMA and its 2012 Regulations. The EMP forms the binding management document upon which an environmental clearance certificate is issued, and it is subject to periodic auditing as the Project transitions from construction to operation. These audits monitor compliance with the EMP and ensure that all stipulated measures are implemented effectively, as required by the Department of Environmental Affairs and Forestry (DEAF). Should Project activities change, the EMP must be updated accordingly. The Project was granted environmental approval, valid for three (3) years from 12 December 2022 until 12 December 2025 (Appendix B).

The following section (section 3) provides a summary of the activities associated with the operational and decommissioning/rehabilitation phases of the solar power plant that may potentially impact both people and the environment.

3 RENEWAL ACTIVITIES

The Proponent has completed Phase 1 of the construction phase of the Project and has entered into the operational phase. The new activities include:

- Routine cleaning of solar panels;
- Water consumption monitoring and record keeping;
- Daily/remote monitoring of generation output.
- Inverter room inspections and thermal checks.
- Power system balancing and supervisory control and data acquisition (SCADA) oversight;
- Servicing of inverters, transformers, trackers;
- Lubrication of moving parts;
- Replacement of faulty modules, fuses, cables or connectors;
- 24/7 site monitoring (closed-circuit television (CCTV) and gate control) and night patrols;
- Inspection to ensure OEMP compliance; and
- Recording and reporting incidents.

4 ENVIRONMENTAL COMPLIANCE AUDIT

4.1 ACTIVITIES CONDUCTED FOR THE PERIOD UNDER REVIEW

During the construction phase, initial inspections were conducted monthly by ECC. Due to the lack of non-conformances, inspections were reduced to quarterly as of August 2024. The last inspection undertaken by ECC was in March 2025. Therefore, the period under review spans from December 2022 to December 2025 (corresponding with the validity period of the environmental clearance certificate). The compliance audit findings are summarised in section 4.4. Below is a list of activities undertaken during the reporting period:

- Installing boundary fences;
- Constructing a storage area and bathrooms;
- Providing inductions and continuous toolbox talks to contractors and employees;
- Installing solar panels;
- Connecting electrical cables;
- Installing septic tanks;
- Waste management; and
- Biodiversity survey to include a 23 ha area which was part of the original impact assessment but not previously utilised.

4.2 BI-ANNUAL COMPLIANCE AUDITS AND REPORTING

During the reporting period of December 2022 to December 2025, the Project transitioned from the pre-construction phase, construction phase into the operational phase. Activities conducted on-site are reported to DEAF:MEFT bi-annually to review compliance with the EMP and report on environmental monitoring observations made during the monthly and quarterly audit campaigns (bi-annual reports are attached in Appendix C). The Project activities have been carried out in compliance with the approved ESMP granted in terms of the EMA.

The EMP has been revised to address the identified gaps and recommend additional best practice measures for the operational and decommissioning phases and has been transitioned to an OEMP (Appendix E).

4.3 BIODIVERSITY SURVEY

A site-specific biodiversity survey was conducted by ECC on 28 October 2025. This biodiversity survey aimed at identifying the plant species (specifically the spatial extent of the lithops species) as they are present in the immediate Project area (refer to survey area in Figure 2). The survey was conducted by using random walks and spot checks and transect sampling. Four (4) transects were surveyed to determine species richness, abundance and distribution. The biodiversity survey report is provided in Appendix D and recommendations have been included in the OEMP.

The results indicated a generally consistent species composition when evaluating species overlap between transects and the Shannon Diversity Index results. The absence of species such as lithops, which was recorded in previous studies within the wider area, emphasises that this survey should not be viewed as a standalone species list or sole reference. Instead, it should be considered together with the study by Mannheimer (2022). The lithops risk zone should be carefully evaluated during any expansion activities and ecological walkdowns are recommended to ensure the detection and protection of any species of conservation importance.

Within and surrounding the survey area, there are various endemic and near-endemic species, as well as protected species and species of conservation concern, such as *Lithops* species, *Commiphora* sp. and *Larryleachia marlothii*.

Overall, the findings of the biodiversity survey provided a reliable indication of plant diversity and composition within the survey area.

4.4 ENVIRONMENTAL COMPLIANCE AUDIT FINDINGS

This section (Table 2) provides an overview of compliance with the requirements as prescribed in the approved EMP for the solar power plant from August 2023 to December 2025.

Table 2 - ESMP compliance audit

Aspect	Management requirements	Compliance	Comments
Planning and design phase			
Cleaning of PV tables	- Investigations regarding water conserving designs should be carried out and consider as a minimum, the following alternative/supplementary cleaning methods: - Options for using recycled water; - Use of industrial leaf blowers; - Use of self-cleaning methods; - Use of electrostatic charge to repel dust and force it to the edges of the panels; and - Use of vibrations to shake dust off of panels. - The tarring of service roads should be considered as an additional dust suppression method. - Vegetation on site is very sparse. Annual grasses should be kept intact as this will assist in lowering dust on site.	- Compliant	- The Project progressed from construction to operational phase in August 2025. - Cleaning of PV panels was conducted using a pressure pump with water supplied by the Trekkopje Uranium Mine. - Recycling of water does not take place. - No bulk water is required or used during the cleaning of the solar plant. - It is recommended to consider recycling water used on site to reduce the amount of water used throughout the operational phase, or any other methods to clean the panels without using water.

Aspect	Management requirements	Compliance	Comments
Borrow pit investigation	- Borrow pit investigations need to include environmental considerations and requirements: - o As first option investigate/explore the use of local building sand suppliers to supply the Project's building sand requirements. - o Ensure that all borrow pits utilised, commercial or private, have environmental clearance and environmental management plans in place, which are being implemented. - o Avoid sensitive areas (e.g. areas with high biodiversity, protected archaeological sites, rivers or drainage lines).	- Not applicable	- Aspect not triggered. Borrow pits were not required during the construction phase and will not be required for the operational phase.
Erosion and preservation of gypsum crust	- Consideration should be given to the erosion control design. The existing drainage lines should be kept intact as far as possible, using natural methods for embankments, water flow diversion such as gabions, only where necessary. The design needs to consider the following: - o The operations of the construction team needs to be organised in such a way that the sensitive gypsum crust in the area is avoided and that the area of impact is limited as far as possible.	- Compliant	- Only designated roads were developed and used throughout the construction phase to prevent damage to the gypsum crust. - The area itself was void of vegetation, not including surrounding spaces. - ECC was appointed as the Project ECO during the construction phase and construction activities were

Aspect	Management requirements	Compliance	Comments
	No mechanical equipment will be allowed to remove vegetation on site. All vegetation clearance works will be done manually.		audited on a monthly to quarterly basis. - Sorex engaged InnoSun to conduct further internal weekly and monthly inspections since construction was finalised. - It is recommended that the operational inspection checklist be reviewed to include erosion control monitoring.
Construction tender preparation phase management requirements			
EMP Implementation	Sorex needs to appoint an employer's representative (ER) to act as the Employer's on-site implementing agent. This person will be responsible to ensure that OPE's responsibilities are executed in compliance with relevant legislation and this EMP.	- Compliant	This function was fulfilled by the main contractor on site (NEC) during Phase 1 of the Project.
Workforce accommodation	Consideration should be given to the accommodation of the workforce, who are not from Arandis (on-site accommodation is prohibited). It is preferred that workers from Arandis be appointed who are already residing there. For those not from Arandis, consultation is to take place with the Arandis Town Council (ATC), to find suitable accommodation or to	- Compliant	- During the construction phase, the Proponent made every effort to make use of local labourers. - Permanent structures were not erected for accommodation purposes. When required, tents were set up and taken down

Aspect	Management requirements	Compliance	Comments
	create a temporary site with suitable infrastructure for this purpose.		once construction was complete.
Vegetation study	Employ a vegetation specialist to identify any potential plants of conservation concern in the areas indicated on the map in Figure 2. The green zone could be used on condition that a vegetation specialist investigates the occurrence of <i>Lithops</i> species and provides recommendations of how they should be preserved/removed prior to construction. The blue area is to remain free of development, since it is also an important drainage line.	- Compliant	- A vegetation specialist study was conducted during the scoping phase of the Project approval. Since the start and completion of the construction phase, personnel and contractors have not disturbed the biodiversity hotspot or sensitive zones / areas. - An additional biodiversity survey was conducted by ECC in October 2025 (Appendix E).
EMP implementation	Relevant sections of this EMP should be included in the tender documents for all development so that tenderers can make provision for the implementation of the EMP.	- Compliant	- This was done for construction. - The Proponent shall continue to ensure that mitigation measures are in place as per the EMP for the operational phase.
Financial provision	Financial provision for the compilation of a waste management plan should be included as a cost item within tenders concerning the operation and maintenance of service infrastructure.	- Compliant	- Borrow pits were not required during the construction phase. Therefore, rehabilitation was not required. - MoHSS was contacted multiple times regarding HIV/AIDS and

Aspect	Management requirements	Compliance	Comments
	- Financial provision for topsoil management and the rehabilitation of borrow pits should be included as a cost item within construction tender documents. - Financial provision for the co-opting of a health officer from the Ministry of Health and Social Services (MoHSS) to facilitate human immunodeficiency virus, acquired immunodeficiency (HIV/AIDS) and tuberculosis (TB) education programmes periodically on-site during the construction phase should be included as a cost item within construction tender documents. - Financial provision for the facilitation of an induction programme for both senior, casual construction personnel as well as subcontractors and associated personnel should be included as a cost item within tenders concerning the construction and/or maintenance of services infrastructure. - Financial provision for the implementation of a labour-intensive Project should be made in the tender documents. - Financial provision for the accommodation of the workforce in Arandis, for those not accommodated there, and for the provision		TB training, but MoHSS never provided the training. Alternative organisations should be contacted to provide the training. Workforce was provided with a camp site during the construction phase.

Aspect	Management requirements	Compliance	Comments
	- of meals and cooking facilities (no wood is to be removed from site) on site. - Financial provision for the drafting of a communication plan should be included as a cost item within construction tender documents.		
Recruitment	- Provisions designed to maximise the use of local labour should be included within tenders concerning the construction and/or maintenance of services infrastructure. - A provision stating that all unskilled labour should be sourced from local communities should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Specific recruitment procedures ensuring local firms receive preference during tender adjudication should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Provisions promoting gender equality pertaining to recruitment should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Women should be given preference for jobs, which are less toil-intensive.	- Compliant	- All tenders maximised the use of local labour. - Prioritising gender equality was promoted and women were employed in less labour-intensive positions.
Waste management			

Aspect	Management requirements	Compliance	Comments
Waste management plan	- The contractor should compile a waste management plan which should address as a minimum the mitigation measures included below. - "Waste" is defined as any matter, whether gaseous, liquid or solid or any combination thereof, which is an undesirable or superfluous by-product, emission, residue or remainder of any process or activity.	- Compliant	- During construction, waste was removed daily. As construction was completed, there were less activity and less waste produced. Therefore, waste was removed to Trekkopje Uranium Mine skip. - Waste is routinely removed by the operations and maintenance team during inspections.
Hazardous waste	- All heavy construction vehicles and equipment on site should be provided with a drip tray. - o Drip trays are to be transported with vehicles wherever they go. - o Drip trays should be cleaned daily and spillage handled, stored and disposed of as hazardous waste. - All heavy construction vehicles should be maintained regularly to prevent oil leakages. - Maintenance and washing of construction vehicles should take place only at a designated workshop area. - o The workshop area should be lined with concrete.	- Compliant	- A damaged spill kit with contaminated soil was observed during the March 2025 site visit. This was rectified during rehabilitation of the site. - Lining was used to prevent spills and leaks from equipment and vehicles contaminating soil. In cases where contamination was observed, contaminated soil was removed from site during rehabilitation after construction was completed. - Drip trays were cleaned on Fridays of every week.

Aspect	Management requirements	Compliance	Comments
	○ The workshop should be contoured so that run-off from the servicing and washing of vehicles and equipment drains into an oil-water separator, silt trap or lined pit (which should also be installed). - Spilled concrete (wet or dry) should be treated as hazardous waste and disposed of by the end of each shift in the appropriate hazardous waste containers. - All hazardous substances (e.g. fuel etc.) or chemicals should be stored temporarily in labelled, safe and sealable containers at a specific location on an impermeable surface, which is bunded. The bunded area should be able to contain 1.5 times the volume of the hazardous material to be stored in the bunded area. - Battery systems should be sealed and not opened or serviced on site.		- Workshops were not constructed, only a storage area (laydown area) was established. The area was kept neat throughout the construction phase.
Sewage and grey water	- Do not allow sewage (black water) to be discharged directly onto open soil along drainage lines or any unspecified area. - All sewage must be removed regularly and disposed of at a recognised (municipal) sewage treatment facility. - The water collected from equipment cleaning areas (grey water), should not be left standing	- Compliant	- Sewage discharge (spills) has not occurred during construction or operations. The mobile toilets were cleaned twice a week to prevent this and spread of disease. Septic tanks were cleaned every (six) 6

Aspect	Management requirements	Compliance	Comments
	for long periods of time as this promotes parasite and bacterial proliferation. Grey water should, if practicable, be recycled: ○ Used for dust suppression; and ○ Used to clean equipment. - If grey water will not be recycled it should be removed along with the black water on a regular basis.		weeks by Elite services (contractor).
General waste	- The construction site should be kept tidy at all times. All domestic and general construction waste produced on a daily basis should be cleaned and contained daily. - No waste may be burned. - Waste containers (bins) should be emptied regularly and removed from site to a recognised (municipality) waste disposal site. All recyclable waste needs to be taken to the nearest cycling depot. - A sufficient number of separate waste containers for hazardous and domestic/general waste must be provided on site. These should be clearly marked as such. - Construction labourers should be sensitised to dispose of waste in a responsible manner and not to litter. - No waste may remain on site after the completion of the Project.	- Compliant	- Contractors practised good housekeeping. - No evidence of waste burning was observed during the construction phase or the commencement of the operational phase. - Waste bins previously not labelled were rectified. - Initial waste is disposed of in the skip of Trekkopje Uranium Mine after which it's removed to the Arandis landfill. Hazardous waste is transported to Walvis Bay for disposal. Recyclable waste is removed to Swakopmund.

Aspect	Management requirements	Compliance	Comments
Borrow pits			
Topsoil	- The contractor should adhere to prescribed measures emanating from the borrow-pit investigation and the design for excavations and disposal of spoil material.	- Not applicable	- Aspect not triggered. Borrow pits were not created during the construction phase.
Rehabilitation	- Upon completion of the construction phase, consultations should be held with the local community regarding the post-construction use of the borrow pit(s). - In the event that no post-construction uses are requested, all borrow pits need to be rehabilitated as follows: - o Borrow pits may only be backfilled with clean or inert fill. No material of hazardous nature (e.g. sand removed with an oil spill) may be dumped as backfill. - o Rehabilitated borrow pits need to match the contours of the existing landscape. - o Take note of drainage channels in the vicinity of the borrow pit. The rehabilitated area should not be higher (or lower) than a drainage channel. This ensures the efficiency of revegetation and reduces the chances of potential erosion.	- Not applicable	- Aspect not triggered. Borrow pits were not created during the construction period and therefore rehabilitation thereof was not required.

Aspect	Management requirements	Compliance	Comments
	○ Topsoil is to be spread across borrow pit areas evenly. ○ Deep ripping is required, not just simple scarification, so as to enable rip lines to hold water after heavy rainfall. ○ Ripping should be done along contour lines, not up and down a slope, which could lead to enhanced erosion. ○ Rehabilitated borrow pits need to remain fenced-off after they have been decommissioned to prevent livestock from removing the newly established vegetation on the area.		
Health and safety			
HIV/AIDS and TB training	- The contractor should approach the MoHSS to co-opt a health officer to facilitate HIV/AIDS and TB education programmes periodically on site during the construction phase.	- Compliant	- A meeting was arranged however; the MoHSS did not conduct the training. - This should be revisited for operations. If MoHSS is not available, alternative training providers should be considered, or training materials such as health posters and pamphlets must be developed.

Aspect	Management requirements	Compliance	Comments
Road safety	- Demarcate roads clearly. - Provide warning signage where appropriate. - Off-road driving should not be allowed. - All vehicles that transport materials to and from the site must be road-worthy. - Drivers that transport materials should have a valid driver's licence and should adhere to all traffic rules. - Loads upon vehicles should be properly secured to avoid items falling off the vehicle.	- Compliant	- Roads are demarcated to ensure off-road driving does not take place. - All vehicles were roadworthy and drivers had valid driver's licences.
Safety around excavated and work areas	- Excavations should be left open for an absolute minimum time. - Excavate short lengths of trenches and box areas for services or foundations in such a way that the trench will not be left unattended for more than twenty-four (24) hours. - Demarcate the following areas with danger tape: - o All excavation works; - o Soil and other building material stockpiles; and - o Temporary waste stockpiles - Provide additional warning signage in areas of movement and in "no personnel" areas where workers are not active. - Borrow pits are to be fenced off with steel wire fencing.	- Compliant	- Excavation activities were completed and no longer applicable. - Warning signs and demarcation of construction areas/materials were implemented. - Borrow pits were not created during the construction phase of the Project. - Building materials and equipment were removed from site upon completion of construction activities. - Security is available on site at all times and works in shifts. - The fire extinguishers passed the service date in June 2024.

Aspect	Management requirements	Compliance	Comments
	- Work areas must be set out and isolated with danger tape on a daily basis with additional warning signage where appropriate. - All building materials and equipment are to be stored only within set-out and demarcated work areas. - Only construction personnel will be allowed within these work areas. - Two (2) fire extinguishers should be available at the fuel storage area. - Comply with all mitigation measures laid out in waste management mitigation measures.		Correction of this was only noted during the March 2025 audit. Fire extinguishers are available, but additional fire extinguishers were recommended by InnoSun technicians based on the latest inspection. Inspections are done weekly.
Toilets	- Separate toilets should be available for men and women and should clearly be indicated as such. - Portable toilets (i.e. easily transportable) should be available at every construction site: - o One (1) toilet for every twenty-five (25) females. - o One (1) for every fifty (50) males. - Toilets should be no further than 250 m from any worker. - Sewage waste needs to be removed on a regular basis to an official (municipal) sewage disposal site. Alternatively, pump sewage into sealable containers and store it until it can be removed.	- Compliant	- One (1) female was employed during the construction phase. She did have access to a designated toilet for females only. - A total of thirty-six (36) NEC employees and fifteen (15) additional contractors were on site during the construction phase. One toilet for males was sufficient. - Toilets were serviced and cleaned twice a week.

Aspect	Management requirements	Compliance	Comments
	- It is important that the adequacy of the number of toilets on sites be monitored. Construction workers should not be allowed to roam off-site to relieve themselves. Should this start to happen, corrective measures are needed, including training and communication to test the adequacy of the number of and distance to toilets. Rectify as necessary. - Workers responsible for cleaning the toilets should be provided with latex gloves and masks.		- Since the completion of construction, mobile toilets were removed. - There are only permanent staff on site and security. - Septic tanks are cleaned every six (6) weeks or as required to prevent overflows. - Application for the septic tanks should be submitted to the Department of Water Affairs.
Open fires	- No open fires may be made anywhere on site.	- Compliant	- Aspect not triggered as no open fires were created on-site. - The Proponent shall continue to ensure that mitigation measures are in place as per the OEMP.
General	- All workers should have appropriate personal protective equipment (PPE) and records of the distribution of PPE should be kept/maintained. - Dust protection masks should be provided to workers if they complain about dust. - Potable water should be provided to workers. - No person should be allowed to smoke close to fuel storage facilities or portable toilet (if toilets are chemical toilets).	- Compliant	- Lack of relevant PPE was noted in August 2023. The finding was corrected by September 2023. - The Proponent shall continue to ensure that mitigation measures are in place as per the OEMP.

Aspect	Management requirements	Compliance	Comments
	- No workers should be allowed to drink alcohol during work hours. - No workers should be allowed on site under the influence of alcohol.		
Dust and noise			
Dust	- A watering truck should be used on gravel roads with the heaviest vehicle movement especially during dry and windy conditions. However, due consideration should be given to water restriction during times of drought. - Ensure that adequate ventilation is available in the event of sanding or grinding work. - Stockpiles of building materials and earth materials to be kept moist or the surfaces stabilised. - Limit the size of stockpiles of large quantities of soil, topsoil and other fine material. - Improve awareness of ambient air quality and consideration regarding wind speed and direction when undertaking dust generating activities.	- Compliant	- Minor civil works were conducted during the construction phase (no major dust-generating activities were conducted). - No stockpiles were established. - The Proponent shall continue to ensure that mitigation measures are in place as per the OEMP.
Noise	Work hours should be restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles is less than (<) 500 m from residential areas.	- Compliant	- Construction activities were conducted during the prescribed times (07:00 – 17:00). - Residential areas are not within 500 m of the solar power plant site.

Aspect	Management requirements	Compliance	Comments
	- In the event that work is necessary outside the designated working hours, all receptors (residents or businesses within 500 m from the work areas) will need to be notified at least two (2) days in advance.		- Construction activities are completed. Most aspects are not triggered as the Project has transitioned into the operational phase.
Environmental training and awareness			
Environmental induction	- All construction workers are to undergo environmental induction which should include as a minimum the following: - o Explanation of the importance of complying with the ESMP; - o Discussion of the potential environmental impacts of construction activities; - o Employees' roles and responsibilities, including emergency preparedness; - o Explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities; and - o Explanation of the specific mitigation measures within this ESMP especially unfamiliar provisions.	- Compliant	- Induction was provided to all personnel new to site. - It is recommended that induction refreshers be provided to the operational workforce and visitors to the site.
Environmental conservation			
Conservation of vegetation	- No driving beyond demarcated areas and off established roads.	- Compliant	- Driving was limited to the roads created for construction purposes.

Aspect	Management requirements	Compliance	Comments
	- No movement of staff or visitors beyond the Project site. - The collection of plants or wood for cooking beyond the Project site should be strictly prohibited.		- All staff and visitors stayed within the boundaries of the Project. - There have not been instances of wood collection for cooking beyond the Project site.
Conservation of water	- Water effective equipment should be used. - All leaking fittings need to be repaired or replaced timeously. - Brooms should be used to clean floors rather than hosing them down with a pipe. - Use buckets or high-pressure hoses to clean areas, equipment or vehicles instead of a regular hose pipe.	- Compliant	- The Proponent shall continue to ensure effective water use and conservation where possible.
Materials camp and lay-down areas	- Suitable locations for the materials camp and lay-down areas should be identified with the assistance of the ER and the following should be considered in selecting these sites: - o Avoid sensitive areas; - o The areas designated for the proposed services infrastructure should be used as far possible; and - o Second choice should be degraded land.	- Compliant	- Material and lay down areas were limited to the fenced areas, not disturbing protected and sensitive vegetation areas. - Service infrastructure was limited to designated areas.
Conservation of vegetation	- No construction or movement should take place beyond the site boundaries or in the	- Compliant	- All construction and movement took place at a safe distance

Aspect	Management requirements	Compliance	Comments
	demarcated area, unless conducted in consultation with the specialist.		from sensitive and protected vegetation zones.
Birds	Consult an avifauna specialist for practical advice on how to protect birds from collision and electrocution on the transmission line before construction.	- Compliant	- An avifauna study has not been conducted due to apparent low impacts as identified in the ESIA. If the need arises this will be reconsidered. - Construction activities have been completed. - Should conditions change, or there's evidence of damage to avifauna, a specialist should be consulted.
Conservation of water	The provisions contained in the water management plan should be implemented.	- Compliant	Water supply is connected to the water system of Trekkopje Uranium Mine. An agreement was reached regarding the amount of water required by the plant.
Employment/recruitment			
Legislation	Adhere to the legal provisions in the Labour Act for the recruitment of labour (target percentage for gender balance, optimal use of local labour and small and medium enterprises (SME's) etc.) in the contract.	- Compliant	Compliance with the requirements of the Labour Act is adhered to.

Aspect	Management requirements	Compliance	Comments
Recruitment	- The contractor should compile a document to be used as a guide for the recruitment process, which should include the following provisions as a minimum: - o The local authority (Town Council, local headman etc.) should assist with the recruitment process. - o Recruitment should not take place at construction sites. - o Ensure that all sub-contractors are aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process. - o Contractors should give preference in terms of recruitment of sub-contractors and individual labourers to those from the Project area and only then look to surrounding towns. - o Clearly explain to all jobseekers the terms and conditions of their respective employment contract (e.g. period of employment etc.) – make use of interpreters when necessary.	- Compliant	- The Namibian Institute of Mining Technology (NIMT) was used for recruitment through means of the local authority.
Stakeholder communication			
Communication plan	- The contractor should draft a communication plan, which should outline, as a minimum the following:	- Compliant	- The closest receptor to the Proponent is Trekoppje Uranium Mine. The Proponent

Aspect	Management requirements	Compliance	Comments
	- How stakeholders, who require ongoing communication for the duration of the construction period, will be identified and recorded and who will manage and update these records; - How these stakeholders will be consulted on an ongoing basis; and - Make provision for the grievance mechanisms-i.e. how concerns can/will be lodged/recorded and how feedback will be delivered as well as further steps of arbitration in the event feedback is deemed unsatisfactory.		is in direct communication with the mine. The signed water supply agreement demonstrate good working relations between the two (2) parties.
General communication matters	- The ER should appoint an ECO to liaise with the contractor, stakeholders, developer and consultants. The appointed contractor shall appoint a person from the construction team to take responsibility for the implementation for all provisions of this ESMP. - The contractor shall at every site meeting report on the status of the implementation of all provisions of the ESMP; - The contractor should implement the environmental awareness training; - The contractor must list the stakeholders of the Project and their contact details with whom ongoing communication would be	- Compliant	- ECC was the contracted ECO for the Project during construction phase. Since the Project transitioned into the operational phase, InnoSun has been conducting weekly and monthly internal inspections. - A copy of the current EMP is available on-site.

Aspect	Management requirements	Compliance	Comments
	required for duration of the contract. This list, together with the communication plan must be agreed upon and given to the ER before construction commences; ○ The communication plan, once agreed upon by the developer, shall be binding; ○ All communication with the stakeholders must take place through the ECO; ○ A copy of the ESMP must be available at the site office and should be accessible to all stakeholders; ○ Key representatives from the above-mentioned list need to be invited to attend monthly site meetings to raise any concerns and issues regarding Project progress; ○ The contractor should liaise with the Developer regarding all issues related to community consultation and negotiation before construction commences; ○ A procedure should be put in place to ensure that concerns raised have been followed-up and addressed; ○ All people on the stakeholders list should be informed about the availability of the complaints register in writing by the ER prior to the commencement of construction activities.		

Aspect	Management requirements	Compliance	Comments
Communication with property owners	- At the outset of the construction programme, all residents along the route will have to be informed about construction activities within the reserve in front of their property. This should be done in cooperation with the applicable constituency councillors.	- Compliant	- Construction activities did not take place in residential or close to residential areas.
Socio-economic and miscellaneous			
Archaeology and heritage resources	- Should a heritage site or archaeological site be uncovered or discovered during the construction phase of the Project, a "chance find" procedure should be applied in the order they appear below: - o If operating machinery or equipment stop work; - o Demarcate the site with danger tape; - o Determine GPS (global positioning system) position if possible; - o Report findings to foreman. - Action taken by foreman: - o Report findings, site location and actions taken to superintendent; - o Cease any works in immediate vicinity; - Action taken by superintendent:	- Compliant	- No chance finds discovered to date.

Aspect	Management requirements	Compliance	Comments
	○ Visit site and determine whether work can proceed without damage to findings; ○ Determine and demarcate exclusion boundary; ○ Site location and details to be added to the project's geographic information system (GIS) for field confirmation by archaeologist; - Action taken by archaeologist: ○ Inspect site and confirm addition to project GIS; ○ Advise the National Heritage Council (NHC) and request written permission to remove findings from work area; and ○ Recovery, packaging and labelling of findings for transfer to National Museum. - Should human remains be found, the following actions will be required: ○ Apply the chance find procedure as described above; ○ Scheduled a field inspection with an archaeologist to confirm that remains are human; ○ Advise and liaise with the NHC and Police; and		

Aspect	Management requirements	Compliance	Comments
	Remains will be recovered and removed either to the National Museum or the National Forensic Laboratory as directed.		
Decommissioning			
Dismantling of all Project components and associated waste	All material produced from the dismantling of Project components (which will not be sold) should be sorted into recyclable and non-recyclable mater.	- Not applicable	Decommissioning has not started as the Project has moved into the operational phase.

5 CONCLUSION AND RECOMMENDATIONS

The construction of Phase 1 (i.e. 9.8 MW) of the fifty (50) MW photovoltaic power plant was carried out in compliance with the relevant requirements of the granted environmental clearance certificate in accordance with the approved EMP. To date, there have not been significant environmental impacts or social issues resulting from the Project activities. The EMP has been updated to an OEMP to reflect operational and decommissioning phases of the Project. The OEMP is therefore submitted as part of the environmental clearance renewal application for approval by MEFT. It is recommended that the Proponent continue to adhere to all environmental legislation and company standards to ensure that the best practical environmental protection continues as the project activities progress.

On this basis, ECC is of the professional opinion that the Proponent has been able to demonstrate compliance with the approved EMP and that the renewal for the environmental clearance certificate should be granted to the Proponent to continue with the operational activities at the 50 MW photovoltaic power plant and any future construction phases.

APPENDIX A – ENVIRONMENTAL MANAGEMENT PLAN (EMP)

APPENDIX B – ENVIRONMENTAL CLEARANCE CERTIFICATE (ECC-2200030)

APPENDIX C – BI-ANNUAL REPORTS AUGUST 2023 TO SEPTEMBER 2025

APPENDIX D – OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN (OEMP)

APPENDIX E – BIODIVERSITY SURVEY REPORT

APPENDIX A

PROPOSED 50MW SOLAR PHOTOVOLTAIC PLANT ON A 150HA SITE NORTH WEST OF ARANDIS, ERONGO REGION

ENVIRONMENTAL MANAGEMENT PLAN



Table of Contents

1	INTRODUCTION	1
2	RESPONSIBILITIES	3
2.1	EMPLOYERS REPRESENTATIVE (ER)	3
2.2	ENVIRONMENTAL CONTROL OFFICER (ECO)	4
2.3	CONTRACTOR.....	5
3	MANAGEMENT REQUIREMENTS.....	6
3.1	PERMITS AND RELEVANT LEGAL PROVISIONS.....	6
3.2	PLANNING AND DESIGN PHASE	7
3.3	CONSTRUCTION TENDER PREPARATION PHASE.....	8
3.4	CONSTRUCTION MITIGATION DETAILS.....	10
3.5	OPERATION AND MAINTENANCE PHASE.....	23
3.6	DECOMMISSIONING	23

TABLES AND FIGURES

Table 1:	Relevant legislated permit requirements.....	6
Table 2:	Management requirements for the Planning and Design phase	7
Table 3:	Construction tender preparation phase management requirements	9
Table 4:	Generic and site-specific environmental management actions for the construction phase	10
Table 5:	Operation and maintenance phase mitigation measures.....	23
Figure 1:	Proposed project site and transmission line route	1

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
DEA	Directorate of Environmental Affairs
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EA	Environmental Assessment
EMP	Environmental Management Plan
ER	Employer's Representative
GG	Government Gazette
GN	Government Notice
HIV	Human Immunodeficiency Virus
I&APs	Interested and Affected Parties
MVA	Mega Volt-Ampere
NHC	National Heritage Council
PPE	Personal Protective Equipment
PV	Photovoltaic
TB	Tuberculosis

1 INTRODUCTION

Sorex Energy plans to establish a 50MW photovoltaic (PV) solar plant at Trekkopje. This document details the Environmental Management Plan (EMP) as informed by the Environmental Scoping Report conducted for this project.

The proposed site is approximately 150 ha in size. The following are the main project components:

- The solar panels and support structures;
- Inverters and step-up transformers; and
- 11 kV transmission line supported by monopole structures.



Figure 1: Proposed project site and transmission line route

An EMP is one of the most important products of an Environmental Assessment (EA) process. An EMP synthesises all recommended mitigation and monitoring measures, laid out according to the various stages of a project life cycle, with clearly defined follow-up actions and responsibility assigned to specific actors. This EMP has been drafted in accordance with the Namibian Environmental Management Act (No. 7 of 2007) and its Environmental Impact Assessment Regulations (2012). This plan describes the mitigation and monitoring measures to be implemented during the following phases of the development:

- Planning and design;
- Construction tender preparation; and
- Operation and maintenance.

The explicit decommissioning of this project is not foreseen, however some mitigation measures will be provided for, in the event that decommissioning takes place.

The commitments described here form part of the Environmental Clearance Certificate (ECC) between Sorex and the state, as represented by the Ministry of Environment, Forestry and Tourism. Non-compliance is considered illegal and may have legal consequences. The amendment, transfer or renewal of the ECC for this project, as well as any changes to this EMP, should be communicated to the Environmental Commissioner as stipulated in the Environmental Management Act of 2007 (§ 39-42).

2 RESPONSIBILITIES

The responsibility for the implementation of the EMP ultimately lies with the Sorex, who is also responsible for the eventual operation of the project. The implementation of this EMP requires the involvement of several stakeholders, each fulfilling a different but vital role to ensure sound environmental management during each phase of this project.

The Developer should appoint an Employer's Representative (ER) to oversee all aspects of this project (including all contracts for work outsourced) – one for the construction phase and one for the operational phases (both of these positions may be assigned to one person). The ER will in turn appoint an Environmental Control Officer (ECO) to oversee the implementation of the whole EMP (if no ECO is appointed this responsibility remains with the ER). The following positions and their respective responsibilities will be outlined below:

- Employer's Representative;
- Environmental Control Officer; and
- Contractor (Construction and Operations and Maintenance).

2.1 EMPLOYERS REPRESENTATIVE (ER)

The ER is appointed by the Developer to manage all contracts for work/services that are outsourced during the construction, operations and maintenance and decommissioning phases. This position may be filled by any competent OPE employee. Any official communication regarding work agreements is delivered through this person. The ER should with the commencement of the project appoint a competent ECO who will represent the Developer on-site.

The ER shall assist the ECO where necessary and will have the following responsibilities regarding the implementation of this EMP:

- Ensuring that the necessary legal authorisations and permits (see **Table 1**) have been obtained by the Contractor;
- Assisting the Contractor in finding environmentally responsible solutions to problems with input from the ECO where necessary;
- Ordering the removal of person(s) and/or equipment not complying with the EMP;
- Issuing fines for transgression of site rules and penalties for contravention of the EMP; and

- Providing input into the ECO's ongoing internal review of the EMP. This review report is submitted on a monthly basis to the Developer.

2.2 ENVIRONMENTAL CONTROL OFFICER (ECO)

The ECO should be a competent person appointed by the ER. The ECO is the Developer's on-site representative primarily responsible for the monitoring and review of on-site environmental management and implementation of the EMP by the Contractor. If no ECO is appointed the duties of the ECO fall upon the ER.

The ECO's duties include the following:

- Assisting the ER in ensuring that the necessary environmental authorisations and permits have been obtained;
- Maintaining open and direct lines of communication between the ER, Developer, Contractor, and Interested and Affected Parties (I&APs) with regard to this EMP and matters incidental thereto;
- Monthly site inspection of all construction areas with regard to compliance with this EMP;
- Physical presence during crucial times of the implementation of this EMP, such as during site establishment (clearance of vegetation) and during site clean-up.
- Monitor and verify adherence to the EMP (audit the implementation of the EMP) and verify that environmental impacts are kept to a minimum;
- Taking appropriate action if the specifications of the EMP are not adhered to;
- Assisting the Contractor in finding environmentally responsible solutions to problems;
- Monthly inspection to verify whether or not new personnel have received environmental awareness training;
- Advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER;
- Recommending the issuing of fines for transgressions of site rules and penalties for contraventions of the EMP; and
- Undertaking a continual review of the EMP and recommending additions and/or changes to the document.

2.3 CONTRACTOR

The Contractor is responsible for the implementation, onsite monitoring and evaluation of the EMP. It is envisaged that various contractors will be appointed at various times and for various tasks throughout the life cycle (construction through to decommissioning phase) of this project. These can be broadly grouped into Construction Contractors and Operations and Service Contractors. In order to ensure sound environmental management, the relevant sections of this EMP should be included in all contracts of work outsourced, thus legally binding all appointed contractors. All contractors shall ensure that adequate environmental awareness training (see **Section E**) of senior site personnel takes place and that all construction workers and newcomers receive an induction presentation on the importance and implications of this EMP. The presentation shall be conducted, as far as is possible, in the employees' language of choice.

The Contractor should keep records of all environmental training sessions, including names, dates and the information presented.

3 MANAGEMENT REQUIREMENTS

This EMP has been structured so as to provide its various intended recipients (Developer, ER, consulting engineers and contractors) with mitigation measures immediately applicable to their respective scopes of work. The management requirements for the various recipients carrying out work for this project are divided according to the main project phases:

- Permit and relevant legal requirements (**Table 1**);
- Planning and Design Phase requirements (**Table 2**);
- Construction Tender Preparation Phase requirements (**Table 3**);
- Construction Phase management requirements (**Table 4**); and
- Operation and Maintenance Phase management requirements (**Table 5**).

3.1 PERMITS AND RELEVANT LEGAL PROVISIONS

Table 1: Relevant legislated permit requirements

THEME	LEGISLATIVE INSTRUMENT	MANAGEMENT REQUIREMENTS
Archaeology	National Heritage Act 27 of 2004	All protected heritage resources (e.g. human remains etc.) discovered, need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before they may be relocated.
Electricity	Electricity Act 4 of 2007	Licences are required for the generation and trading of electricity.
Environmental	EIA Regulations GN 57/2007 (GG 3812)	The amendment, transfer or renewal of the Environmental Clearance Certificate (S19 & 20).
Forestry	Forest Act 12 of 2001 Nature Conservation Ordinance 4 of 1975	• Protected tree species and any vegetation within 100 m from a watercourse may not be removed without a permit. • A Harvesting Permit is required if wood is to be collected (harvested) for use as fuel.
Labour	Labour Act 11 of 2007 Health and Safety Regulations (HSR) GN 156/1997 (GG 1617).	Adhere to all applicable provisions of the Labour Act and the Health and Safety regulations.
Land lease	Communal Land Reform Act (2003)	Land Lease Agreement in place.
Water	Water Act 54 of 1956	A permit is required for the purification of effluent (Section 21)

3.2 PLANNING AND DESIGN PHASE

The management requirements detailed in the table below need to be carried out before any tender documents are drafted for the construction of various aspects of this project. These management requirements are also applicable for the period during which detailed engineering designs/drawings are carried out.

Table 2: Management requirements for the Planning and Design phase

ASPECT	MANAGEMENT REQUIREMENT
Cleaning of PV tables	Investigations regarding water conserving designs should be carried out and consider as a minimum the following alternative/supplementary cleaning methods: • Options for using recycled water; • Use of industrial leaf blowers; • Use of self-cleaning methods: – Use of electrostatic charge to repel dust and force it to the edges of the panels; – Use of vibrations to shake dust off of panels. The tarring of service roads should be considered as an additional dust suppression method. Vegetation on site is very sparse. Annual grasses should be kept intact as this will assist in lowering dust on site.
Borrow pit investigation	Borrow pit investigations need to include environmental considerations and requirements: • As first option investigate/explore the use of local building sand suppliers to supply the project's building sand requirements. • Ensure that all borrow pits utilised, commercial or private, have environmental clearance and Environmental Management Plans in place, which are being implemented. • Avoid sensitive areas (e.g. areas with high biodiversity, protected archaeological sites, rivers or drainage lines).
Erosion and preservation of gypsum crust	Consideration should be given to the erosion control design. The existing drainage lines should be kept intact as far as possible, using natural methods for embankments, water flow diversion such as gabions, only where necessary. The design needs to consider the following: The operations of the construction team needs to be organised in such a way that the sensitive gypsum crust in the area is avoided and that the area of impact is limited as far as possible. No mechanical equipment will be allowed to remove vegetation on site. All vegetation clearance works will be done manually.
EMP Implementation	Sorexsa needs to appoint an Employer's Representative (ER) to act as the Employer's on-site implementing agent. This person will be responsible to ensure that OPE's responsibilities are executed in compliance with relevant legislation and this EMP.

ASPECT	MANAGEMENT REQUIREMENT
Workforce accommodation	Consideration should be given to the accommodation of the workforce, which will not in Arandis (prohibited on site). It is preferred that workers from Arandis be appointed who are already residing there. For those not from Arandis, consultation is to take place with the Arandis Town Council, to find suitable accommodation or to create a temporary site with suitable infrastructure for this purpose.
Vegetation study	Employ a vegetation specialist to identify any potential plants of conservation concern in the areas indicated on the map below (Figure 2) The Green zone could be used on condition that a vegetation specialist investigates the occurrence of <i>Lithops</i> species and provides recommendations of how they should be preserved/removed prior to construction. The Blue area is to remain free of development, since it is also an important drainage line.

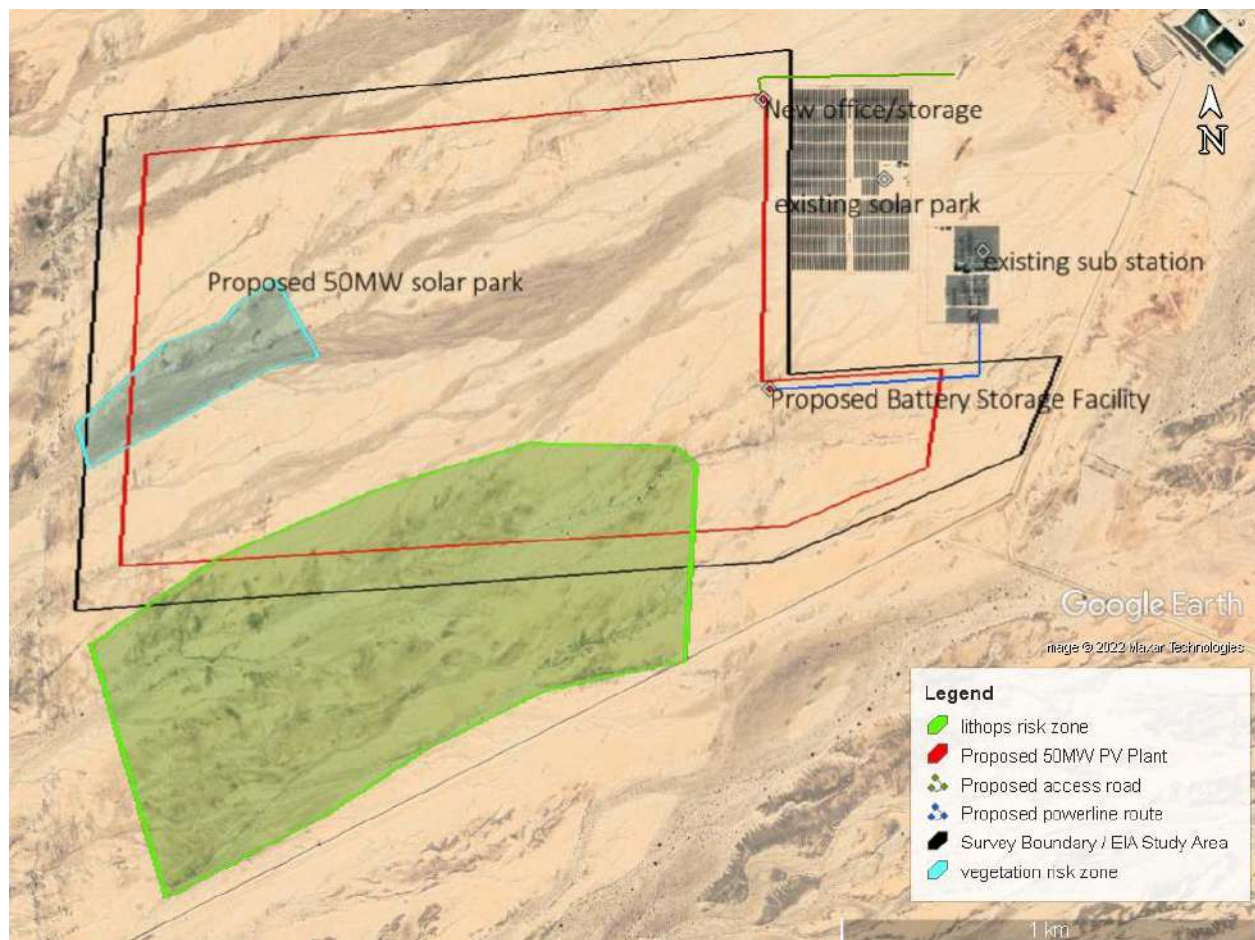


Figure 2: Blue area: important drainage line and potential area of vegetation concern, green area: potential area of vegetation concern.

3.3 CONSTRUCTION TENDER PREPARATION PHASE

The management requirements described below should be consulted and carried out whenever a construction tender document is prepared.

Table 3: Construction tender preparation phase management requirements

ASPECT	MANAGEMENT REQUIREMENTS
EMP implementation	Relevant sections of this EMP should be included in the tender documents for all development so that tenderers can make provision for implementation of the EMP.
Financial provision	- Financial provision for the compilation of a Waste Management Plan should be included as a cost item within tenders concerning the operation and maintenance of services infrastructure. - Financial provision for topsoil management and the rehabilitation of borrow pits should be included as a cost item within construction tender documents. - Financial provision for the co-opting of a health officer from the Ministry of Health and Social Services to facilitate HIV/AIDS and TB education programmes periodically on-site during the construction phase should be included as a cost item within construction tender documents. - Financial provision for the facilitation of an induction programme for both senior, casual construction personnel as well as subcontractors and associated personnel should be included as a cost item within tenders concerning the construction and/or maintenance of services infrastructure. - Financial provision for the implementation of a labour intensive project should be made in the tender documents. - Financial provision for the accommodation of the workforce in Arandis, for those not accommodated there, and for the provision of meals and cooking facilities (no wood is to be removed from site) on site. - Financial provision for the drafting of a Communication Plan should be included as a cost item within construction tender documents.
Recruitment	- Provisions designed to maximise the use of local labour should be included within tenders concerning the construction and/or maintenance of services infrastructure. - A provision stating that all unskilled labour should be sourced from local communities should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Specific recruitment procedures ensuring local firms receive preference during tender adjudication should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Provisions promoting gender equality pertaining to recruitment should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Women should be given preference for jobs, which are less toil-intensive.

3.4 CONSTRUCTION MITIGATION DETAILS

The following table provides a large scale overview of all the major environmental management themes pertaining to both generic and site specific construction mitigation details. This table serves to act as quick reference, for the detailed mitigation details that follow below, for the implementation of the construction component of this EMP.

Table 4: Generic and site-specific environmental management actions for the construction phase

THEME	OBJECTIVE	MITIGATION DETAIL	
		GENERIC	SITE-SPECIFIC
Waste management	Avoid and where not possible minimise all pollution associated with construction.	Section A	N/A
Borrow pits	Ensure topsoil protection and post-construction rehabilitation.	Section B	N/A
Health and safety	Safeguard health and safety of labourers and general public.	Section C	N/A
Dust and noise	Avoid and where not possible minimise dust and noise associated with construction.	Section D	N/A
Environmental training and awareness	Awareness creation regarding the provisions of the EMP as well as importance of safeguarding environmental resources.	Section E	N/A
Environmental conservation	Minimise construction activity footprint and safeguard biodiversity in ecologically sensitive areas.	Section F	Section F
Employment/ Recruitment	Minimise negative conflict through legal and fair recruitment practices.	Section G	N/A
Stakeholder communication	Provide a platform for stakeholders to raise grievances and receive feedback and hence minimise negative conflict	Section H	Section H
Socio-economic and Miscellaneous	Ensure due consideration is given to matters regarding the cultural and general wellbeing of the affected community and matters incidental thereto.	Section I	N/A

SECTION A: WASTE MANAGEMENT

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Waste management plan	- The Contractor should compile a Waste Management Plan which should address as a minimum the mitigation measures included below. "Waste" is defined as any matter, whether gaseous, liquid or solid or any combination thereof, which is an undesirable or superfluous by-product, emission, residue or remainder of any process or activity.
Hazardous waste	- All heavy construction vehicles and equipment on site should be provided with a drip tray. - Drip trays are to be transported with vehicles wherever they go. - Drip trays should be cleaned daily and spillage handled, stored and disposed of as hazardous waste. - All heavy construction vehicles should be maintained regularly to prevent oil leakages. - Maintenance and washing of construction vehicles should be take place only at a designated workshop area. - The workshop area should be lined with concrete. - The workshop should be contoured so that run-off from the servicing and washing of vehicles and equipment drains into an oil-water separator, silt trap or lined pit (which should also be installed). - Spilled concrete (wet or dry) should be treated as hazardous waste and disposed of by the end of each day in the appropriate hazardous waste containers. - All hazardous substances (e.g. fuel etc.) or chemicals should be stored temporarily in labelled, safe and sealable containers at a specific location on an impermeable surface, which is bunded. The bunded area should be able to contain 1.5 times the volume of the hazardous material to be stored in the bunded area. - Battery systems should be sealed and not opened or serviced on site.
Sewage and grey water	- Do not allow sewage (black water) to be discharged directly onto open soil along drainage lines, or any unspecified area. - All sewage must be removed regularly and disposed of at a recognised (municipal) sewage treatment facility. - The water collected from equipment cleaning areas (grey water), should not be left standing for long periods of time as this promotes parasite and bacterial proliferation. Grey water should, if practicable, be recycled: - Used for dust suppression; - Used to clean equipment. - If grey water will not be recycled it should be removed along with the black water on a regular basis.

ASPECT	MITIGATION MEASURE
General waste	• The construction site should be kept tidy at all times. All domestic and general construction waste produced on a daily basis should be cleaned and contained daily. • No waste may be buried or burned. • Waste containers (bins) should be emptied regularly and removed from site to a recognised (municipal) waste disposal site. All recyclable waste needs to be taken to the nearest recycling depot. • A sufficient number of separate waste containers for hazardous and domestic/general waste must be provided on site. These should be clearly marked as such. • Construction labourers should be sensitised to dispose of waste in a responsible manner and not to litter. • No waste may remain on site after the completion of the project

SECTION B: BORROW PITS

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Topsoil	The Contractor should adhere to prescribed measures emanating from the borrow-pit investigation (see Table 2) and the design for excavations and disposal of spoil material.
Rehabilitation	• Upon completion of the construction phase consultations should be held with the local community regarding the post-construction use of the borrow pit(s). • In the event that no post-construction uses are requested, all borrow pits need to be rehabilitated as follows: – Borrow pits may only be backfilled with clean or inert fill. No material of hazardous nature (e.g. sand removed with an oil spill) may be dumped as backfill. – Rehabilitated borrow pits need to match the contours of the existing landscape. – Take note of drainage channels in the vicinity of the borrow pit. The rehabilitated area should not be higher (or lower) than a drainage channel. This ensures the efficiency of revegetation and reduces the chances of potential erosion. – Topsoil is to be spread across borrow pit areas evenly. – Deep ripping is required, not just simple scarification, so as to enable rip lines to hold water after heavy rainfall. – Ripping should be done along contour lines, not up and down a slope, which could lead to enhanced erosion. – Rehabilitated borrow pits need to remain fenced-off after they have been decommissioned to prevent livestock from removing the newly established vegetation on the area.

APPENDIX C: HEALTH AND SAFETY

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION MEASURES	
HIV/AIDS and TB training	The Contractor should approach the Ministry of Health and Social Services to co-opt a health officer to facilitate HIV/AIDS and TB education programmes periodically on site during the construction phase.
Road Safety	• Demarcate roads clearly. • Provide warning signage where appropriate. • Off-road driving should not be allowed. • All vehicles that transport materials to and from the site must be road-worthy. • Drivers that transport materials should have a valid driver's license and should adhere to all traffic rules. • Loads upon vehicles should be properly secured to avoid items falling off the vehicle.
Safety Around Excavated and Work Areas	• Excavations should be left open for an absolute minimum time. • Excavate short lengths of trenches and box areas for services or foundations in such a way that the trench will not be left unattended for more than 24 hours. • Demarcate the following areas with danger tape: – All excavation works; – Soil and other building material stockpiles; and – Temporary waste stockpiles • Provide additional warning signage in areas of movement and in "no personnel" areas where workers are not active. • Borrow pits are to be fenced off with steel wire fencing. • Work areas must be set out and isolated with danger tape on a daily basis with additional warning signage where appropriate. • All building materials and equipment are to be stored only within set-out and demarcated work areas. • Only construction personnel will be allowed within these work areas. • 2 fire extinguishers should be available at the fuel storage area • Comply with all mitigation measures laid out in Section A (Waste Management mitigation measures)
Toilets	• Separate toilets should be available for men and women and should clearly be indicated as such. • Portable toilets (i.e. easily transportable) should be available at every construction site: – 1 toilet for every 25 females. – 1 toilet for every 50 males.

ASPECT	MITIGATION MEASURE
	– Toilets should be no further than 250m from any worker. – Sewage waste needs to be removed on a regular basis to an official (municipal) sewage disposal site. Alternatively, pump sewage into sealable containers and store it until it can be removed. – Its important that the adequacy of the number of toilets on sites be monitored. Construction workers should not be allowed to roam off site to relieve themselves. Should this start to happen, corrective measures are needed, including training and communication to test the adequacy of the number of and distance to toilets. Rectify as necessary. – Workers responsible for cleaning the toilets should be provided with latex gloves and masks.
Open fires	No open fires may be made anywhere on site.
General	• All workers should have appropriate Personal Protective Equipment (PPE) and records of the distribution of PPE should be kept/maintained • Dust protection masks should be provided to workers if they complain about dust. • Potable water should be provided to workers. • No person should be allowed to smoke close to fuel storage facilities or portable toilets (if toilets are chemical toilets – the chemicals are flammable). • No workers should be allowed to drink alcohol during work hours. • No workers should be allowed on site if under the influence of alcohol.

SECTION D: DUST AND NOISE

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Dust	• A watering truck should be used on gravel roads with the most heavy vehicle movement especially during dry and windy conditions. However, due consideration should be given to water restrictions during times of drought. • Ensure that adequate ventilation is available in the event of sanding or grinding work. • Stockpiles of building materials and earth material to be kept moist or the surfaces stabilised • Limit the size of stockpiles of large quantities of soil, topsoil and other fine material. • Improve awareness of ambient air quality and consideration regarding wind speed and direction when undertaking dust generating activities
Noise	• Work hours should be restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles is less than 500 m from residential areas. • In the event that work is necessary outside the designated working hours, all receptors (residents or businesses within 500 m from the work areas) will need to be notified at least 2 days in advance.

SECTION E: ENVIRONMENTAL TRAINING AND AWARENESS

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Environmental Induction (Training)	All construction workers are to undergo environmental induction (training) which should include as a minimum the following: • Explanation of the importance of complying with the EMP. • Discussion of the potential environmental impacts of construction activities. • Employees' roles and responsibilities, including emergency preparedness. • Explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities. • Explanation of the specific mitigation measures within this EMP especially unfamiliar provisions.

SECTION F: ENVIRONMENTAL CONSERVATION

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Conservation of vegetation	• No driving beyond demarcated areas and off established roads. • No movement of staff or visitors beyond the project site. • The collection of plants or wood for cooking beyond the project site should be strictly prohibited.
Conservation of water	• Water effective equipment should be used. • All leaking fittings need to be repaired or replaced timeously. • Brooms should be used to clean floors rather than hosing them down with a pipe. • Use buckets or high pressure hoses to clean areas, equipment or vehicles instead of a regular hose pipe.
Materials camp and lay-down areas	Suitable locations for the materials camp and lay-down areas should be identified with the assistance of the ER and the following should be considered in selecting these sites: • Avoid sensitive areas (see Figure 2). • The areas designated for the proposed services infrastructure should be used as far possible as lay-down areas. • Second choice should be degraded land.
SPECIFIC MITIGATION DETAILS	
Conservation of vegetation	• No construction or movement should take place beyond the site boundaries or in the demarcated area unless approved by a specialist (Figure 2).
Birds	• Consult an avifauna specialist for practical advice how to protect birds from collision and electrocution on the transmission line before construction.
Conservation of water	The provisions contained in the Water Management Plan (see Table 2) should be implemented.

SECTION G: EMPLOYMENT/RECRUITMENT

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Legislation	Adhere to the legal provisions in the Labour Act (see Table 1) for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.) in the Contract.
Recruitment	The Contractor should compile a document to be used as a guide for the recruitment process, which should include the following provisions as a minimum: • The local authority (town council, local headman etc.) should assist with the recruitment process. • Recruitment should not take place at construction sites. • Ensure that all sub-contractors are aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process. • Contractors should give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns. • Clearly explain to all job-seekers the terms and conditions of their respective employment contract (e.g. period of employment etc.) – make use of interpreters when necessary.

SECTION H: STAKEHOLDER COMMUNICATION

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Communication plan	The Contractor should draft a Communication Plan, which should outline as a minimum the following: • How stakeholders, who require ongoing communication for the duration of the construction period, will be identified and recorded and who will manage and update these records; • How these stakeholders will be consulted on an ongoing basis; • Make provision for grievance mechanisms – i.e. how concerns can/ will be lodged/ recorded and how feedback will be delivered as well as further steps of arbitration in the event feedback is deemed unsatisfactory.
General communication matters	• The ER should appoint an ECO to liaise between the Contractor, stakeholders, Developer, and consultants. The appointed Contractor shall appoint a person from the construction team to take responsibility for the implementation for all provisions of this EMP. • The Contractor shall at every site meeting report on the status of the implementation of all provisions of the EMP. • The Contractor should implement the environmental awareness training as stipulated in Section E. • The Contractor must list the stakeholders of the project and their contact details with whom ongoing communication would be required for duration of the contract. This list, together with the Communication Plan must be agreed upon and given to the ER before construction commences. • The Communication Plan, once agreed upon by the Developer, shall be binding. • All communication with the stakeholders must take place through the ECO. • A copy of the EMP must be available at the site office and should be accessible to all stakeholders • Key representatives from the above mentioned list need to be invited to attend monthly site meetings to raise any concerns and issues regarding project progress. • The Contractor should liaise with the Developer regarding all issues related to community consultation and negotiation before construction commences. • A procedure should be put in place to ensure that concerns raised have been followed-up and addressed. • All people on the stakeholders list should be informed about the availability of the complaints register in writing by the ER prior to the commencement of construction activities.
SPECIFIC MITIGATION DETAILS	
Communication with property owners	At the outset (i.e. before commencement) of the construction programme, all residents along the route will have to be informed about construction activities within the reserve

	in front of their property. This should be done in cooperation with the applicable constituency councillors.
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SECTION I: SOCIO-ECONOMIC AND MISCELLANEOUS

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Archaeology and Heritage Resources	• Should a heritage site or archaeological site be uncovered or discovered during the construction phase of the project, a "chance find" procedure should be applied in the order they appear below: – If operating machinery or equipment stop work; – Demarcate the site with danger tape; – Determine GPS position if possible; – Report findings to foreman; • Action taken by foreman: – Report findings, site location and actions taken to superintendent; – Cease any works in immediate vicinity; • Action taken by Superintendent: – Visit site and determine whether work can proceed without damage to findings; – Determine and demarcate exclusion boundary; – Site location and details to be added to the project's Geographic Information System (GIS) for field confirmation by archaeologist; • Action taken by archaeologist – Inspect site and confirm addition to project GIS; – Advise the National Heritage Council (NHC) and request written permission to remove findings from work area; and – Recovery, packaging and labelling of findings for transfer to National Museum. • Should human remains be found, the following actions will be required: – Apply the chance find procedure as described above; – Schedule a field inspection with an archaeologist to confirm that remains are human; – Advise and liaise with the NHC and Police; and – Remains will be recovered and removed either to the National Museum or the National Forensic Laboratory as directed.

3.5 OPERATION AND MAINTENANCE PHASE

The following mitigation measures should be complied with and carried out during any operation and maintenance works associated with the project facilities and services infrastructure for the proposed project.

Table 5: Operation and maintenance phase mitigation measures

ASPECT	MITIGATION MEASURE
Maintenance of associated infrastructure	Maintenance works for the associated infrastructure within the project area should adhere to all provisions contained in Sections A to G of the construction mitigation measures of this EMP (Chapter 3.4).
Post-construction borrow pit usage	Borrow pits to be utilised post-construction should adhere to the same topsoil and rehabilitation measures outlined within construction mitigation measures of this EMP (Chapter 3.4) above.
Post-construction environmental training and awareness	All contractors appointed for maintenance work on the respective services infrastructure must ensure that all personnel are aware of necessary health, safety and environmental considerations applicable to their respective work.
Cleaning of PV tables	• A Water Management Plan should be compiled by the Developer and should include as a minimum the following: – All measures emanating from the Investigations regarding water conserving designs (see Table 2); and – Water effective equipment should be used (i.e. high-pressure hoses instead of regular hose pipes).

3.6 DECOMMISSIONING

ASPECT	MITIGATION MEASURE
Dismantling of project components and associated waste	• All materials produced from the dismantling of project components (which will not be sold) should be sorted into recyclable and non-recyclable materials. Recyclable material should be transported to the nearest recycling depot. • No waste should be left on site after the project has been decommissioned
Construction-like activities	Many of the activities involved in decommissioning a large project have considerable overlap with the activities for which mitigation measures have been provided for in Chapter 3.4 . Where applicable these should be complied with



REPUBLIC OF NAMIBIA
MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM

OFFICE OF THE ENVIRONMENTAL COMMISSIONER

ENVIRONMENTAL CLEARANCE CERTIFICATE

ISSUED

In accordance with Section 37(2) of the Environmental
Management Act (Act No. 7 of 2007)

TO

Sorexa Sun Energy (PTY) LTD
P O Box 27527, Windhoek

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY

**Proposed 50MW Photovoltaic Solar Power Plan with power line near
Trekopje, Erongo region**

Issued on the date: 2022-12-12
Expires on this date: 2025-12-12

ENVIRONMENTAL COMMISSIONER

(See conditions printed over leaf)

This certificate is printed without erasures or alterations

Reduce
Reuse
Recycle



CONDITIONS OF APPROVAL

1. This environmental clearance is valid for a period of 3 (three) years, from the date of issue unless withdrawn by this office
2. This certificate does not in any way hold the Ministry of Environment, Forestry and Tourism accountable for misleading information, nor any adverse effects that may arise from these activities. Instead, full accountability rests with the proponent and its consultants
3. This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project



Submitted to: Sorexa Sun Energy (Pty) Ltd
Attention: Mr. Alex Delle Donne
2 Schutzen street
P O Box 27527
Windhoek, Namibia.

REPORT:

ENVIRONMENTAL BI-ANNUAL REPORT – AUGUST 2023 – FEBRUARY 2024

PROJECT NUMBER: ECC-43-472-REP-10-D

REPORT VERSION: REV 01

DATE: 10 JULY 2024

TITLE AND APPROVAL PAGE

Project Name: Environmental bi-annual report – August 2023 – February 2024
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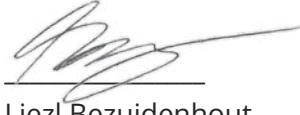
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DISCLAIMER

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EXECUTIVE SUMMARY

Construction of a new solar plant close to Trekkopje Mine commenced in August 2023. The Project is managed by Sorex Sun Energy, a subsidiary of Innosun Energy Holding Namibia. Ondengu Construction was contracted to undertake the site preparation work of Phase 1 (9.8MW) and NEC (Namibian Engineering Corporation) were contracted to conduct the mechanical and electrical scope for this phase of the Project.

This report summarises the findings of the monthly audits undertaken to evaluate compliance to the Environmental Management Plan (EMP) and offers comment on overall performance in adhering to the EMP requirements for the period August 2023 to February 2024.

The following non-conformances were identified over the audited period. These were communicated and, in most cases, rectified or actions amended toward achieving compliance:

- i) a waste management procedure not developed,
- ii) a chance find procedure not developed,
- iii) insufficient measures to address the prevention and management of hazardous spills, and
- iv) material stockpiles were not appropriately demarcated.

The non-conformances were rectified, and no further non-conformances identified in the monitored period. It is however, noted that a large amount of dust is generated during construction and while it is acknowledged that dust suppression cannot readily be increased, strict implementation of dust masks and other PPE should be encouraged for all personnel on site.

TABLE OF CONTENTS

1	Introduction	7
1.1	Background.....	7
1.2	Purpose of the report.....	7
1.3	Onsite information collection.....	8
1.4	Environmental Compliance Consultancy.....	8
2	EMP compliance summary	12
2.1	Summary of audit findings and corrective actions	12
2.2	Rehabilitation.....	16
3	Conclusion and recommendations.....	17
	Appendix A – Environmental clearance certificate	18
	Appendix B - Environmental management plan	20
	Appendix C- IAuditor report August 2023	21
	Appendix D – IAuditor report September 2023.....	22
	Appendix E - IAuditor report October 2023.....	23
	Appendix F – IAuditor report November 2023	24
	Appendix G – IAuditor report December 2023.....	25
	Appendix H – IAuditor report January 2024	26
	Appendix I – IAuditor report February 2024	27

LIST OF FIGURES

Figure 1 - Sorex Sun Energy 50 MW solar power plant to be constructed	9
Figure 2 - Phase 1 of the Trekkopje PV plant.....	10
Figure 3 - Sensitive vegetation and lithops in relation to the total 150Ha site area.....	11

ABBREVIATIONS

Abbreviation	Description
ECC	Environmental Compliance Consultancy (Pty) Ltd
ESIA	environmental and social impact assessment
EMP	environmental management plan
ha	hectare
kV	kilovolt
MEFT	Ministry of Environment, Forestry and Tourism
MSDS	material safety data sheet
MW	megawatt
NEC	Namibian Engineering Corporation
PPE	personal protective equipment
PV	photovoltaic

1 INTRODUCTION

1.1 BACKGROUND

Sorex Sun Energy, a subsidiary of Innosun Energy Holding Namibia, contracted Ondengu Construction for the site preparation work, and Namibian Engineering Corporation (NEC), the main contractor, for the mechanical and electrical installation, for the Phase 1 development of a 50 megawatt (MW) photovoltaic (PV) solar plant located close to Trekkopje Mine (see Figure 1).

Activities associated with the construction phase of the solar plant trigger the Environmental Management Act, No. 7 of 2007 and thereby specific listed activities within the Act's associated Regulations. For this reason, an environmental management plan (EMP), with numerous compliance criteria, was developed to support the issuance of the environmental clearance certificate (ECC). It is thus a legal requirement for all contractors involved in the project to comply to the EMP criteria as listed in Appendix A and Appendix B. The Project is closely located to a sensitive area where lithops can be found. Lithops are a protected plant species that are very difficult to see. Due to these factors, it is important to ensure that construction activities are kept at a safe distance to avoid any damage (see Figure 3).

The Project is located in the Erongo Region, close to Trekkopje Uranium Mine, Phase 1 will occupy ~20 ha as shown in Figure 2, with a total proposed Project area footprint of ~150 ha for the 50 MW solar plant development (Figure 3). Listed below are the main Project components:

- Pile foundations;
- Solar panels and support structures;
- Inverters and step-up transformers; and
- 33 kV underground cable.

1.2 PURPOSE OF THE REPORT

The purpose of this report is to provide feedback on the environmental performance of the Project, with regard to the requirements of the EMP, through monthly environmental audits of the construction activities. Attached in Appendix C is the IAuditor report based on the aspects from the EMP.

The compliance audit conducted from 11/08/2023 to 13/02/2024 was based on the main criteria of the EMP which include:

1. Legal compliance;
2. Working arrangement;
3. Communication and training;
4. Reporting, compliance, and enforcement;

5. Environmental and social management; and
6. Environmental aspect and potential impacts.

1.3 ONSITE INFORMATION COLLECTION

ECC makes use of an online data collection software, IAuditor. It allows the users to build a customised site-specific template according to the EMP. Users of the template can add notes, take and annotate photos, assign follow-up actions and reminders or share reports in various ways when and where needed. It also allows users to complete the checklist during site inspections and add any relevant information like notes, photos of the inspection, or actions to be considered. The inspection report is included in Appendix C.

1.4 ENVIRONMENTAL COMPLIANCE CONSULTANCY

Sorex Sun Energy (Pty) Ltd has appointed a local company, Environmental Compliance Consultancy (Pty) Ltd (ECC) for the provision of environmental control officer (ECO) services for the duration of the project.

ECC, a Namibian company (registration number 2022/0593), has prepared this report for the client. ECC is an independent consultancy that operates exclusively in the environmental, social, health and safety fields for clients across Southern Africa in the public and private sectors. ECC has no vested or financial interest in the proposed project, except for fair remuneration for professional services rendered. All compliance and regulatory requirements regarding this assessment document should be forwarded by email or posted to the following address:

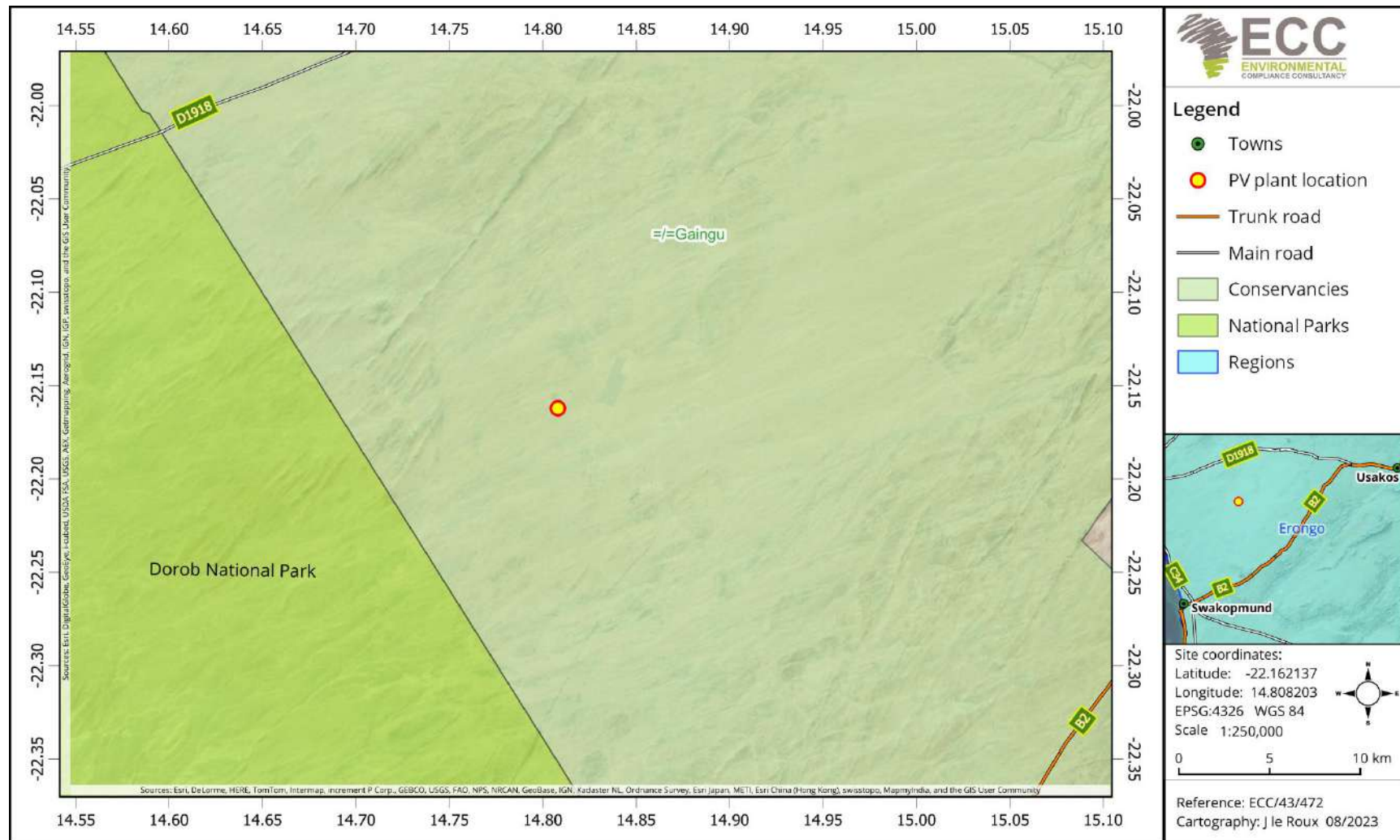
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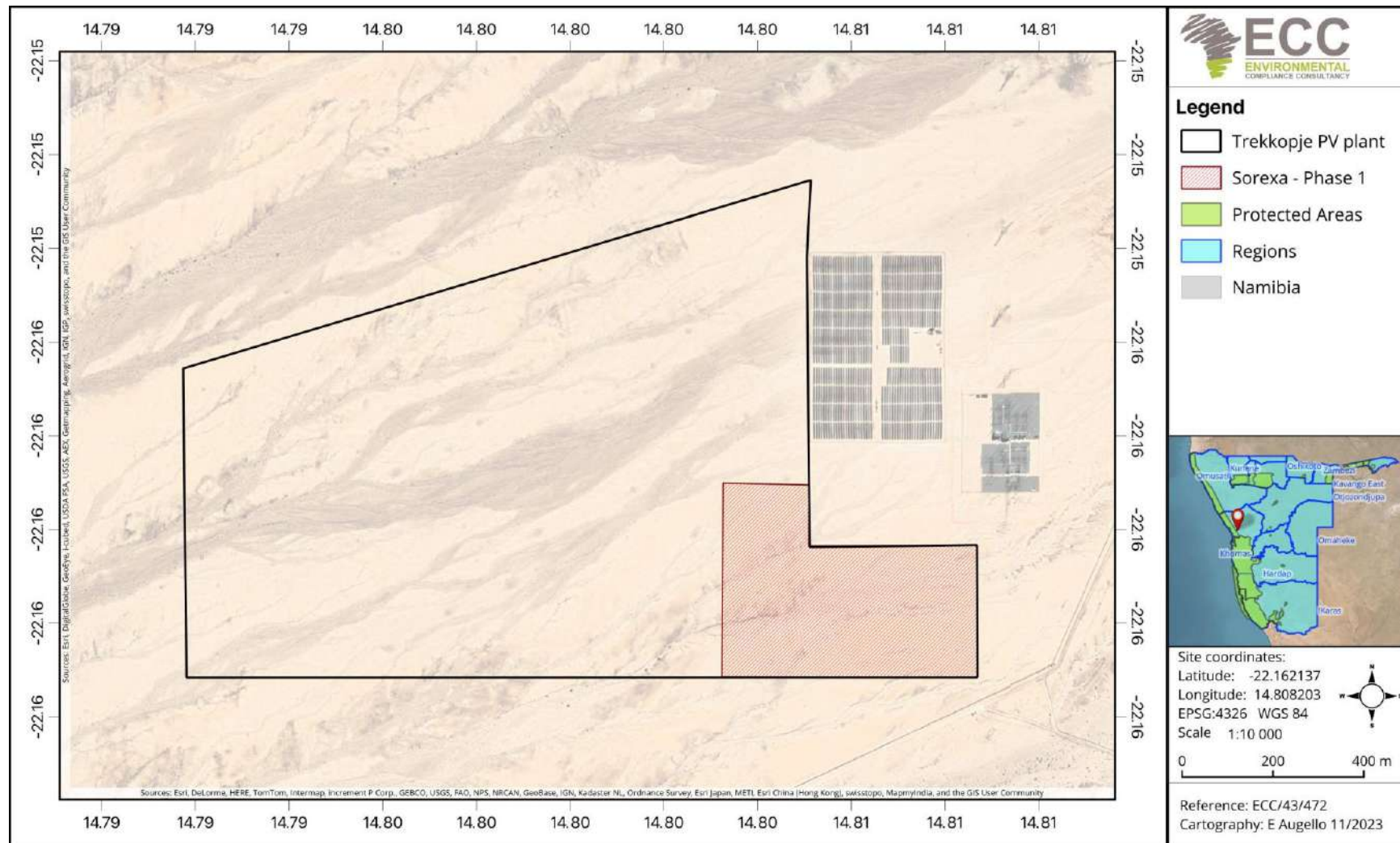


Figure 2 - Phase 1 of the Trekkopje PV plant

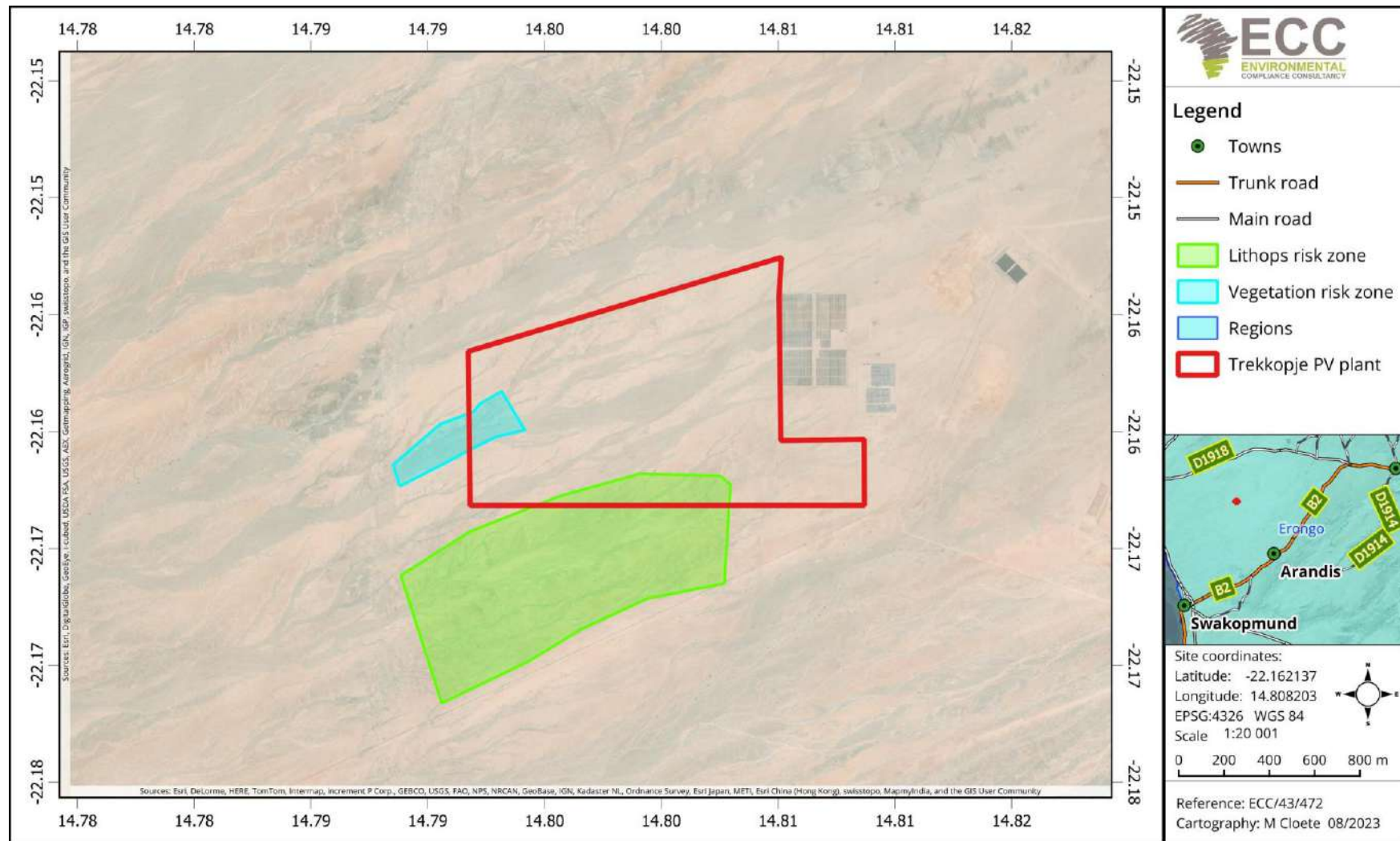


Figure 3 - Sensitive vegetation and lithops in relation to the total 150Ha site area.

2 EMP COMPLIANCE SUMMARY

2.1 SUMMARY OF AUDIT FINDINGS AND CORRECTIVE ACTIONS

The findings and corrective actions are in Table 1 as per monthly inspections:

Table 1 - Activity summary from August 2023 to February 2024

Site Visit	Activities	Non - conformance	Corrective actions
11 Aug 2023	- The sub-contractor was in the process of laying the foundations for the workshop. - Drilling holes for the placement of the solar panels. - Setting up the needed documentation according to the EMP.	- A waste management plan has not been developed. - Spill prevention methods are not in place. - A small animal was found stuck in one of the holes created for construction. - Not all employees had the proper personal protective equipment (PPE) for the activities at hand.	- A waste management plan must be developed. - Spill preventative measures such as drip trays should be put into place to avoid soil contamination. - Holes created for construction purposes should not be left uncovered for extended periods of time to prevent small animals for falling in. - Personnel and contractors onsite must all be provided with the proper PPE (safety glasses, safety boots, overalls, gloves and a hard hat.
12 Sept 2023	- The workshop and storage areas were in the process of being constructed. - EMP training was provided to the employees during the site visit.	- A waste management and chance find procedure has not been developed. - A chance find procedure has not been developed. - Spill prevention methods have improved but are not fully up to standard as a generator was found without a drip tray.	- A waste management plan must be developed. - A chance find procedure must developed. - An extraction tool was created to remove small animals from the holes and trenches.

Site Visit	Activities	Non - conformance	Corrective actions
12 Oct 2023	- Permanent structure ablution facilities were built. - Water tanks were installed.	- Building material stockpiles were not demarcated as stipulated in the EMP.	- A waste management procedure was developed by the sub-contractor. - The chance find procedure will be developed by the main contractor once they arrive on site. - An oil spill kit was obtained.
10 Nov 2023	- NEC was employed to install the solar panels arrived on site.	- The waste management plan has not been developed by NEC. - The chance find procedures must be developed by NEC.	- NEC must still create a waste management procedure. - NEC should develop a chance find procedure. - Stockpiled building materials are now properly demarcated.
13 Dec 2023	- EMP compliance training was conducted. - Drilling points for the solar panels continue.	- Non-conformances were not identified during the site visit.	- Material stockpiles have been demarcated. - The waste management and chance find procedure has been developed and is currently in review.

Site Visit	Activities	Non - conformance	Corrective actions
18 Jan 2024	- Construction on site is currently on hold due to a difference in backfilling techniques between Innosun and NEC. - Although dust suppression is conducted, some tracks produce a large amount of dust.	- Non-conformances were not identified during the site visit.	- The amount of dust suppression conducted should increase. Should this not be possible it's important to ensure that the required PPE (dust masks and safety glasses) are readily available to personnel and contractors.
13 Feb 2024	- The engineers are set to arrive on site in March 2024. - EMP training was provided. - A scorpion was found inside one of the drill holes.	- Non-conformances were not identified during the site visit.	- The scorpion was caught and relocated away from the construction site.

Further non-conformances have not been identified from December 2023 to February 2024. For the full IAuditor report see Appendix C to Appendix I.

2.2 REHABILITATION

The Project falls within the Gaingu Conservancy and is in proximity to the Dorob National Park (Figure 1). Therefore, rehabilitation should be conducted concurrently during the construction phase to prevent extra costs and to reduce the negative effect on the environment. Moreover, sensitive areas must be avoided (see Figure 3).

3 CONCLUSION AND RECOMMENDATIONS

Construction activities are ongoing, however as is the nature of construction, not all components of the project (and therefore the EMP) are relevant for the evaluated period. EMP compliance is thus based on activities underway at the time of the site visit.

Overall, the majority of activities were found to be compliant with the EMP criteria however, a number of non-conformances were identified, namely: insufficient spill prevention methods, outstanding waste management and chance find procedures, inadequately demarcated material stockpiles and small animals trapped in the construction holes. Corrective action implemented by the responsible parties ensured the non-conformances were rectified by the end of November 2023 with no further non-conformances identified to date.

The next bi-annual audit findings will be focused on the activities between March and August 2024.

APPENDIX A – ENVIRONMENTAL CLEARANCE CERTIFICATE

ECC – 2200030 Serial:221yXV830



REPUBLIC OF NAMIBIA
MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM
OFFICE OF THE ENVIRONMENTAL COMMISSIONER

ENVIRONMENTAL CLEARANCE CERTIFICATE
ISSUED

In accordance with Section 37(2) of the Environmental
Management Act (Act No. 7 of 2007)

TO
Sorexa Sun Energy (PTY) LTD
P O Box 27527, Windhoek

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY
Proposed 50MW Photovoltaic Solar Power Plan with power line near
Trekkojie, Erongo region

Issued on the date: 2022-12-12
Expires on this date: 2025-12-12

(See conditions printed over leaf)

This certificate is printed without erasures or alterations



28 MAR 2023
ENVIRONMENTAL COMMISSIONER



Reduce
Reuse
Recycle

ECC –

CONDITIONS OF APPROVAL

1. This environmental clearance is valid for a period of 3 (three) years, from the date of issue unless withdrawn by this office
2. This certificate does not in any way hold the Ministry of Environment, Forestry and Tourism accountable for misleading information, nor any adverse effects that may arise from these activities. Instead, full accountability rests with the proponent and its consultants
3. This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project

APPENDIX B - ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX C- IAUDITOR REPORT AUGUST 2023

APPENDIX D – IAUDITOR REPORT SEPTEMBER 2023

APPENDIX E - IAUDITOR REPORT OCTOBER 2023

APPENDIX F – IAUDITOR REPORT NOVEMBER 2023

APPENDIX G – IAUDITOR REPORT DECEMBER 2023

APPENDIX H – IAUDITOR REPORT JANUARY 2024

APPENDIX I – IAUDITOR REPORT FEBRUARY 2024

APPENDIX A

PROPOSED 50MW SOLAR PHOTOVOLTAIC PLANT ON A 150HA SITE NORTH WEST OF ARANDIS, ERONGO REGION

ENVIRONMENTAL MANAGEMENT PLAN



Table of Contents

1	INTRODUCTION	1
2	RESPONSIBILITIES	3
2.1	EMPLOYERS REPRESENTATIVE (ER)	3
2.2	ENVIRONMENTAL CONTROL OFFICER (ECO)	4
2.3	CONTRACTOR.....	5
3	MANAGEMENT REQUIREMENTS.....	6
3.1	PERMITS AND RELEVANT LEGAL PROVISIONS.....	6
3.2	PLANNING AND DESIGN PHASE	7
3.3	CONSTRUCTION TENDER PREPARATION PHASE.....	8
3.4	CONSTRUCTION MITIGATION DETAILS.....	10
3.5	OPERATION AND MAINTENANCE PHASE.....	23
3.6	DECOMMISSIONING	23

TABLES AND FIGURES

Table 1:	Relevant legislated permit requirements.....	6
Table 2:	Management requirements for the Planning and Design phase	7
Table 3:	Construction tender preparation phase management requirements	9
Table 4:	Generic and site-specific environmental management actions for the construction phase	10
Table 5:	Operation and maintenance phase mitigation measures.....	23
Figure 1:	Proposed project site and transmission line route	1

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
DEA	Directorate of Environmental Affairs
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EA	Environmental Assessment
EMP	Environmental Management Plan
ER	Employer's Representative
GG	Government Gazette
GN	Government Notice
HIV	Human Immunodeficiency Virus
I&APs	Interested and Affected Parties
MVA	Mega Volt-Ampere
NHC	National Heritage Council
PPE	Personal Protective Equipment
PV	Photovoltaic
TB	Tuberculosis

1 INTRODUCTION

Sorex Energy plans to establish a 50MW photovoltaic (PV) solar plant at Trekkopje. This document details the Environmental Management Plan (EMP) as informed by the Environmental Scoping Report conducted for this project.

The proposed site is approximately 150 ha in size. The following are the main project components:

- The solar panels and support structures;
- Inverters and step-up transformers; and
- 11 kV transmission line supported by monopole structures.



Figure 1: Proposed project site and transmission line route

An EMP is one of the most important products of an Environmental Assessment (EA) process. An EMP synthesises all recommended mitigation and monitoring measures, laid out according to the various stages of a project life cycle, with clearly defined follow-up actions and responsibility assigned to specific actors. This EMP has been drafted in accordance with the Namibian Environmental Management Act (No. 7 of 2007) and its Environmental Impact Assessment Regulations (2012). This plan describes the mitigation and monitoring measures to be implemented during the following phases of the development:

- Planning and design;
- Construction tender preparation; and
- Operation and maintenance.

The explicit decommissioning of this project is not foreseen, however some mitigation measures will be provided for, in the event that decommissioning takes place.

The commitments described here form part of the Environmental Clearance Certificate (ECC) between Sorex and the state, as represented by the Ministry of Environment, Forestry and Tourism. Non-compliance is considered illegal and may have legal consequences. The amendment, transfer or renewal of the ECC for this project, as well as any changes to this EMP, should be communicated to the Environmental Commissioner as stipulated in the Environmental Management Act of 2007 (§ 39-42).

2 RESPONSIBILITIES

The responsibility for the implementation of the EMP ultimately lies with the Sorexsa, who is also responsible for the eventual operation of the project. The implementation of this EMP requires the involvement of several stakeholders, each fulfilling a different but vital role to ensure sound environmental management during each phase of this project.

The Developer should appoint an Employer's Representative (ER) to oversee all aspects of this project (including all contracts for work outsourced) – one for the construction phase and one for the operational phases (both of these positions may be assigned to one person). The ER will in turn appoint an Environmental Control Officer (ECO) to oversee the implementation of the whole EMP (if no ECO is appointed this responsibility remains with the ER). The following positions and their respective responsibilities will be outlined below:

- Employer's Representative;
- Environmental Control Officer; and
- Contractor (Construction and Operations and Maintenance).

2.1 EMPLOYERS REPRESENTATIVE (ER)

The ER is appointed by the Developer to manage all contracts for work/services that are outsourced during the construction, operations and maintenance and decommissioning phases. This position may be filled by any competent OPE employee. Any official communication regarding work agreements is delivered through this person. The ER should with the commencement of the project appoint a competent ECO who will represent the Developer on-site.

The ER shall assist the ECO where necessary and will have the following responsibilities regarding the implementation of this EMP:

- Ensuring that the necessary legal authorisations and permits (see **Table 1**) have been obtained by the Contractor;
- Assisting the Contractor in finding environmentally responsible solutions to problems with input from the ECO where necessary;
- Ordering the removal of person(s) and/or equipment not complying with the EMP;
- Issuing fines for transgression of site rules and penalties for contravention of the EMP; and

- Providing input into the ECO's ongoing internal review of the EMP. This review report is submitted on a monthly basis to the Developer.

2.2 ENVIRONMENTAL CONTROL OFFICER (ECO)

The ECO should be a competent person appointed by the ER. The ECO is the Developer's on-site representative primarily responsible for the monitoring and review of on-site environmental management and implementation of the EMP by the Contractor. If no ECO is appointed the duties of the ECO fall upon the ER.

The ECO's duties include the following:

- Assisting the ER in ensuring that the necessary environmental authorisations and permits have been obtained;
- Maintaining open and direct lines of communication between the ER, Developer, Contractor, and Interested and Affected Parties (I&APs) with regard to this EMP and matters incidental thereto;
- Monthly site inspection of all construction areas with regard to compliance with this EMP;
- Physical presence during crucial times of the implementation of this EMP, such as during site establishment (clearance of vegetation) and during site clean-up.
- Monitor and verify adherence to the EMP (audit the implementation of the EMP) and verify that environmental impacts are kept to a minimum;
- Taking appropriate action if the specifications of the EMP are not adhered to;
- Assisting the Contractor in finding environmentally responsible solutions to problems;
- Monthly inspection to verify whether or not new personnel have received environmental awareness training;
- Advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER;
- Recommending the issuing of fines for transgressions of site rules and penalties for contraventions of the EMP; and
- Undertaking a continual review of the EMP and recommending additions and/or changes to the document.

2.3 CONTRACTOR

The Contractor is responsible for the implementation, onsite monitoring and evaluation of the EMP. It is envisaged that various contractors will be appointed at various times and for various tasks throughout the life cycle (construction through to decommissioning phase) of this project. These can be broadly grouped into Construction Contractors and Operations and Service Contractors. In order to ensure sound environmental management, the relevant sections of this EMP should be included in all contracts of work outsourced, thus legally binding all appointed contractors. All contractors shall ensure that adequate environmental awareness training (see **Section E**) of senior site personnel takes place and that all construction workers and newcomers receive an induction presentation on the importance and implications of this EMP. The presentation shall be conducted, as far as is possible, in the employees' language of choice.

The Contractor should keep records of all environmental training sessions, including names, dates and the information presented.

3 MANAGEMENT REQUIREMENTS

This EMP has been structured so as to provide its various intended recipients (Developer, ER, consulting engineers and contractors) with mitigation measures immediately applicable to their respective scopes of work. The management requirements for the various recipients carrying out work for this project are divided according to the main project phases:

- Permit and relevant legal requirements (**Table 1**);
- Planning and Design Phase requirements (**Table 2**);
- Construction Tender Preparation Phase requirements (**Table 3**);
- Construction Phase management requirements (**Table 4**); and
- Operation and Maintenance Phase management requirements (**Table 5**).

3.1 PERMITS AND RELEVANT LEGAL PROVISIONS

Table 1: Relevant legislated permit requirements

THEME	LEGISLATIVE INSTRUMENT	MANAGEMENT REQUIREMENTS
Archaeology	National Heritage Act 27 of 2004	All protected heritage resources (e.g. human remains etc.) discovered, need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before they may be relocated.
Electricity	Electricity Act 4 of 2007	Licences are required for the generation and trading of electricity.
Environmental	EIA Regulations GN 57/2007 (GG 3812)	The amendment, transfer or renewal of the Environmental Clearance Certificate (S19 & 20).
Forestry	Forest Act 12 of 2001 Nature Conservation Ordinance 4 of 1975	• Protected tree species and any vegetation within 100 m from a watercourse may not be removed without a permit. • A Harvesting Permit is required if wood is to be collected (harvested) for use as fuel.
Labour	Labour Act 11 of 2007 Health and Safety Regulations (HSR) GN 156/1997 (GG 1617).	Adhere to all applicable provisions of the Labour Act and the Health and Safety regulations.
Land lease	Communal Land Reform Act (2003)	Land Lease Agreement in place.
Water	Water Act 54 of 1956	A permit is required for the purification of effluent (Section 21)

3.2 PLANNING AND DESIGN PHASE

The management requirements detailed in the table below need to be carried out before any tender documents are drafted for the construction of various aspects of this project. These management requirements are also applicable for the period during which detailed engineering designs/drawings are carried out.

Table 2: Management requirements for the Planning and Design phase

ASPECT	MANAGEMENT REQUIREMENT
Cleaning of PV tables	Investigations regarding water conserving designs should be carried out and consider as a minimum the following alternative/supplementary cleaning methods: • Options for using recycled water; • Use of industrial leaf blowers; • Use of self-cleaning methods: – Use of electrostatic charge to repel dust and force it to the edges of the panels; – Use of vibrations to shake dust off of panels. The tarring of service roads should be considered as an additional dust suppression method. Vegetation on site is very sparse. Annual grasses should be kept intact as this will assist in lowering dust on site.
Borrow pit investigation	Borrow pit investigations need to include environmental considerations and requirements: • As first option investigate/explore the use of local building sand suppliers to supply the project's building sand requirements. • Ensure that all borrow pits utilised, commercial or private, have environmental clearance and Environmental Management Plans in place, which are being implemented. • Avoid sensitive areas (e.g. areas with high biodiversity, protected archaeological sites, rivers or drainage lines).
Erosion and preservation of gypsum crust	Consideration should be given to the erosion control design. The existing drainage lines should be kept intact as far as possible, using natural methods for embankments, water flow diversion such as gabions, only where necessary. The design needs to consider the following: The operations of the construction team needs to be organised in such a way that the sensitive gypsum crust in the area is avoided and that the area of impact is limited as far as possible. No mechanical equipment will be allowed to remove vegetation on site. All vegetation clearance works will be done manually.
EMP Implementation	Sorexsa needs to appoint an Employer's Representative (ER) to act as the Employer's on-site implementing agent. This person will be responsible to ensure that OPE's responsibilities are executed in compliance with relevant legislation and this EMP.

ASPECT	MANAGEMENT REQUIREMENT
Workforce accommodation	Consideration should be given to the accommodation of the workforce, which will not in Arandis (prohibited on site). It is preferred that workers from Arandis be appointed who are already residing there. For those not from Arandis, consultation is to take place with the Arandis Town Council, to find suitable accommodation or to create a temporary site with suitable infrastructure for this purpose.
Vegetation study	Employ a vegetation specialist to identify any potential plants of conservation concern in the areas indicated on the map below (Figure 2) The Green zone could be used on condition that a vegetation specialist investigates the occurrence of <i>Lithops</i> species and provides recommendations of how they should be preserved/removed prior to construction. The Blue area is to remain free of development, since it is also an important drainage line.

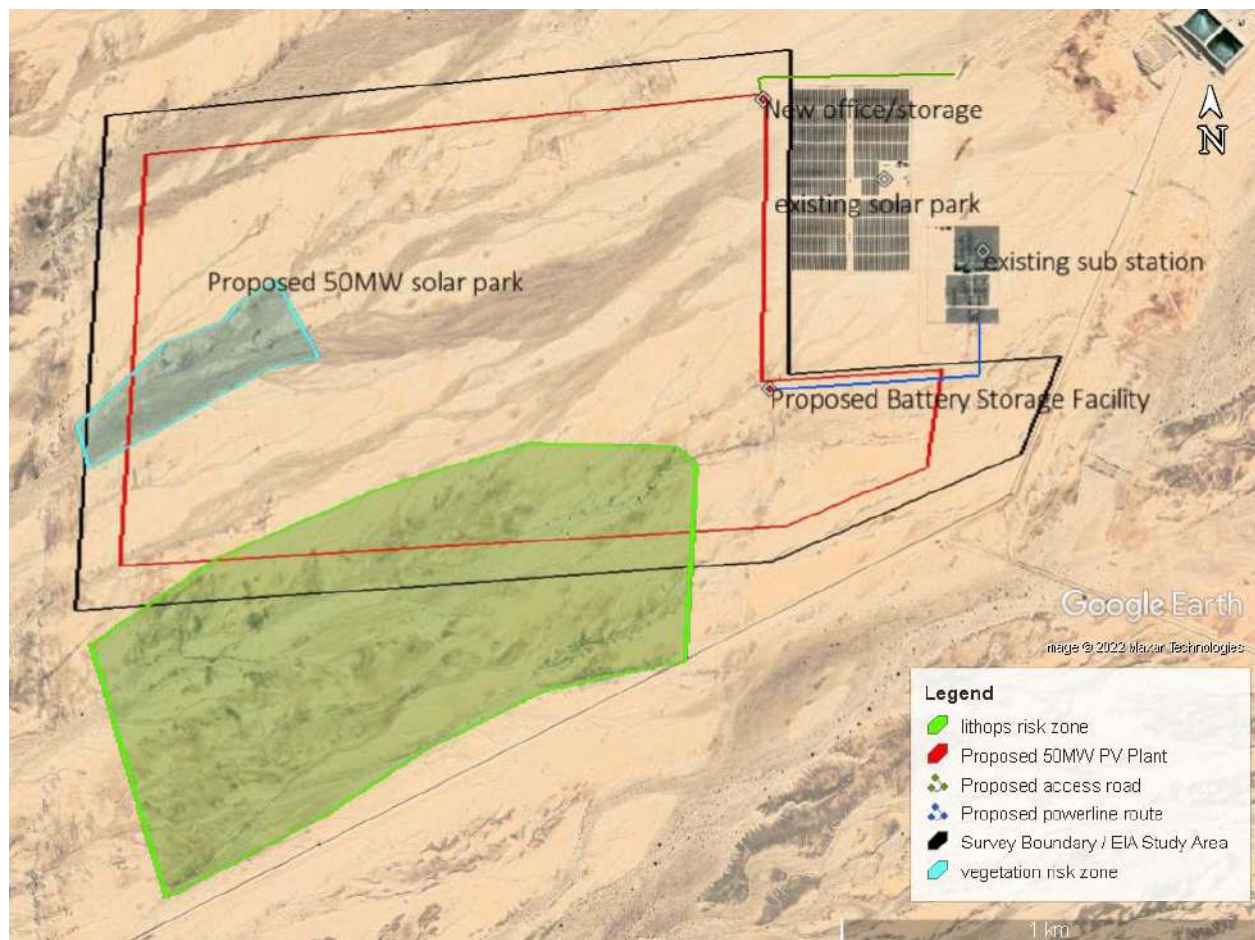


Figure 2: Blue area: important drainage line and potential area of vegetation concern, green area: potential area of vegetation concern.

3.3 CONSTRUCTION TENDER PREPARATION PHASE

The management requirements described below should be consulted and carried out whenever a construction tender document is prepared.

Table 3: Construction tender preparation phase management requirements

ASPECT	MANAGEMENT REQUIREMENTS
EMP implementation	Relevant sections of this EMP should be included in the tender documents for all development so that tenderers can make provision for implementation of the EMP.
Financial provision	- Financial provision for the compilation of a Waste Management Plan should be included as a cost item within tenders concerning the operation and maintenance of services infrastructure. - Financial provision for topsoil management and the rehabilitation of borrow pits should be included as a cost item within construction tender documents. - Financial provision for the co-opting of a health officer from the Ministry of Health and Social Services to facilitate HIV/AIDS and TB education programmes periodically on-site during the construction phase should be included as a cost item within construction tender documents. - Financial provision for the facilitation of an induction programme for both senior, casual construction personnel as well as subcontractors and associated personnel should be included as a cost item within tenders concerning the construction and/or maintenance of services infrastructure. - Financial provision for the implementation of a labour intensive project should be made in the tender documents. - Financial provision for the accommodation of the workforce in Arandis, for those not accommodated there, and for the provision of meals and cooking facilities (no wood is to be removed from site) on site. - Financial provision for the drafting of a Communication Plan should be included as a cost item within construction tender documents.
Recruitment	- Provisions designed to maximise the use of local labour should be included within tenders concerning the construction and/or maintenance of services infrastructure. - A provision stating that all unskilled labour should be sourced from local communities should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Specific recruitment procedures ensuring local firms receive preference during tender adjudication should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Provisions promoting gender equality pertaining to recruitment should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Women should be given preference for jobs, which are less toil-intensive.

3.4 CONSTRUCTION MITIGATION DETAILS

The following table provides a large scale overview of all the major environmental management themes pertaining to both generic and site specific construction mitigation details. This table serves to act as quick reference, for the detailed mitigation details that follow below, for the implementation of the construction component of this EMP.

Table 4: Generic and site-specific environmental management actions for the construction phase

THEME	OBJECTIVE	MITIGATION DETAIL	
		GENERIC	SITE-SPECIFIC
Waste management	Avoid and where not possible minimise all pollution associated with construction.	Section A	N/A
Borrow pits	Ensure topsoil protection and post-construction rehabilitation.	Section B	N/A
Health and safety	Safeguard health and safety of labourers and general public.	Section C	N/A
Dust and noise	Avoid and where not possible minimise dust and noise associated with construction.	Section D	N/A
Environmental training and awareness	Awareness creation regarding the provisions of the EMP as well as importance of safeguarding environmental resources.	Section E	N/A
Environmental conservation	Minimise construction activity footprint and safeguard biodiversity in ecologically sensitive areas.	Section F	Section F
Employment/ Recruitment	Minimise negative conflict through legal and fair recruitment practices.	Section G	N/A
Stakeholder communication	Provide a platform for stakeholders to raise grievances and receive feedback and hence minimise negative conflict	Section H	Section H
Socio-economic and Miscellaneous	Ensure due consideration is given to matters regarding the cultural and general wellbeing of the affected community and matters incidental thereto.	Section I	N/A

SECTION A: WASTE MANAGEMENT

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Waste management plan	- The Contractor should compile a Waste Management Plan which should address as a minimum the mitigation measures included below. "Waste" is defined as any matter, whether gaseous, liquid or solid or any combination thereof, which is an undesirable or superfluous by-product, emission, residue or remainder of any process or activity.
Hazardous waste	- All heavy construction vehicles and equipment on site should be provided with a drip tray. - Drip trays are to be transported with vehicles wherever they go. - Drip trays should be cleaned daily and spillage handled, stored and disposed of as hazardous waste. - All heavy construction vehicles should be maintained regularly to prevent oil leakages. - Maintenance and washing of construction vehicles should be take place only at a designated workshop area. - The workshop area should be lined with concrete. - The workshop should be contoured so that run-off from the servicing and washing of vehicles and equipment drains into an oil-water separator, silt trap or lined pit (which should also be installed). - Spilled concrete (wet or dry) should be treated as hazardous waste and disposed of by the end of each day in the appropriate hazardous waste containers. - All hazardous substances (e.g. fuel etc.) or chemicals should be stored temporarily in labelled, safe and sealable containers at a specific location on an impermeable surface, which is bunded. The bunded area should be able to contain 1.5 times the volume of the hazardous material to be stored in the bunded area. - Battery systems should be sealed and not opened or serviced on site.
Sewage and grey water	- Do not allow sewage (black water) to be discharged directly onto open soil along drainage lines, or any unspecified area. - All sewage must be removed regularly and disposed of at a recognised (municipal) sewage treatment facility. - The water collected from equipment cleaning areas (grey water), should not be left standing for long periods of time as this promotes parasite and bacterial proliferation. Grey water should, if practicable, be recycled: - Used for dust suppression; - Used to clean equipment. - If grey water will not be recycled it should be removed along with the black water on a regular basis.

ASPECT	MITIGATION MEASURE
General waste	• The construction site should be kept tidy at all times. All domestic and general construction waste produced on a daily basis should be cleaned and contained daily. • No waste may be buried or burned. • Waste containers (bins) should be emptied regularly and removed from site to a recognised (municipal) waste disposal site. All recyclable waste needs to be taken to the nearest recycling depot. • A sufficient number of separate waste containers for hazardous and domestic/general waste must be provided on site. These should be clearly marked as such. • Construction labourers should be sensitised to dispose of waste in a responsible manner and not to litter. • No waste may remain on site after the completion of the project

SECTION B: BORROW PITS

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Topsoil	The Contractor should adhere to prescribed measures emanating from the borrow-pit investigation (see Table 2) and the design for excavations and disposal of spoil material.
Rehabilitation	• Upon completion of the construction phase consultations should be held with the local community regarding the post-construction use of the borrow pit(s). • In the event that no post-construction uses are requested, all borrow pits need to be rehabilitated as follows: – Borrow pits may only be backfilled with clean or inert fill. No material of hazardous nature (e.g. sand removed with an oil spill) may be dumped as backfill. – Rehabilitated borrow pits need to match the contours of the existing landscape. – Take note of drainage channels in the vicinity of the borrow pit. The rehabilitated area should not be higher (or lower) than a drainage channel. This ensures the efficiency of revegetation and reduces the chances of potential erosion. – Topsoil is to be spread across borrow pit areas evenly. – Deep ripping is required, not just simple scarification, so as to enable rip lines to hold water after heavy rainfall. – Ripping should be done along contour lines, not up and down a slope, which could lead to enhanced erosion. – Rehabilitated borrow pits need to remain fenced-off after they have been decommissioned to prevent livestock from removing the newly established vegetation on the area.

APPENDIX C: HEALTH AND SAFETY

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION MEASURES	
HIV/AIDS and TB training	The Contractor should approach the Ministry of Health and Social Services to co-opt a health officer to facilitate HIV/AIDS and TB education programmes periodically on site during the construction phase.
Road Safety	• Demarcate roads clearly. • Provide warning signage where appropriate. • Off-road driving should not be allowed. • All vehicles that transport materials to and from the site must be road-worthy. • Drivers that transport materials should have a valid driver's license and should adhere to all traffic rules. • Loads upon vehicles should be properly secured to avoid items falling off the vehicle.
Safety Around Excavated and Work Areas	• Excavations should be left open for an absolute minimum time. • Excavate short lengths of trenches and box areas for services or foundations in such a way that the trench will not be left unattended for more than 24 hours. • Demarcate the following areas with danger tape: – All excavation works; – Soil and other building material stockpiles; and – Temporary waste stockpiles • Provide additional warning signage in areas of movement and in "no personnel" areas where workers are not active. • Borrow pits are to be fenced off with steel wire fencing. • Work areas must be set out and isolated with danger tape on a daily basis with additional warning signage where appropriate. • All building materials and equipment are to be stored only within set-out and demarcated work areas. • Only construction personnel will be allowed within these work areas. • 2 fire extinguishers should be available at the fuel storage area • Comply with all mitigation measures laid out in Section A (Waste Management mitigation measures)
Toilets	• Separate toilets should be available for men and women and should clearly be indicated as such. • Portable toilets (i.e. easily transportable) should be available at every construction site: – 1 toilet for every 25 females. – 1 toilet for every 50 males.

ASPECT	MITIGATION MEASURE
	– Toilets should be no further than 250m from any worker. – Sewage waste needs to be removed on a regular basis to an official (municipal) sewage disposal site. Alternatively, pump sewage into sealable containers and store it until it can be removed. – Its important that the adequacy of the number of toilets on sites be monitored. Construction workers should not be allowed to roam off site to relieve themselves. Should this start to happen, corrective measures are needed, including training and communication to test the adequacy of the number of and distance to toilets. Rectify as necessary. – Workers responsible for cleaning the toilets should be provided with latex gloves and masks.
Open fires	No open fires may be made anywhere on site.
General	• All workers should have appropriate Personal Protective Equipment (PPE) and records of the distribution of PPE should be kept/maintained • Dust protection masks should be provided to workers if they complain about dust. • Potable water should be provided to workers. • No person should be allowed to smoke close to fuel storage facilities or portable toilets (if toilets are chemical toilets – the chemicals are flammable). • No workers should be allowed to drink alcohol during work hours. • No workers should be allowed on site if under the influence of alcohol.

SECTION D: DUST AND NOISE

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Dust	• A watering truck should be used on gravel roads with the most heavy vehicle movement especially during dry and windy conditions. However, due consideration should be given to water restrictions during times of drought. • Ensure that adequate ventilation is available in the event of sanding or grinding work. • Stockpiles of building materials and earth material to be kept moist or the surfaces stabilised • Limit the size of stockpiles of large quantities of soil, topsoil and other fine material. • Improve awareness of ambient air quality and consideration regarding wind speed and direction when undertaking dust generating activities
Noise	• Work hours should be restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles is less than 500 m from residential areas. • In the event that work is necessary outside the designated working hours, all receptors (residents or businesses within 500 m from the work areas) will need to be notified at least 2 days in advance.

SECTION E: ENVIRONMENTAL TRAINING AND AWARENESS

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Environmental Induction (Training)	All construction workers are to undergo environmental induction (training) which should include as a minimum the following: • Explanation of the importance of complying with the EMP. • Discussion of the potential environmental impacts of construction activities. • Employees' roles and responsibilities, including emergency preparedness. • Explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities. • Explanation of the specific mitigation measures within this EMP especially unfamiliar provisions.

SECTION F: ENVIRONMENTAL CONSERVATION

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Conservation of vegetation	• No driving beyond demarcated areas and off established roads. • No movement of staff or visitors beyond the project site. • The collection of plants or wood for cooking beyond the project site should be strictly prohibited.
Conservation of water	• Water effective equipment should be used. • All leaking fittings need to be repaired or replaced timeously. • Brooms should be used to clean floors rather than hosing them down with a pipe. • Use buckets or high pressure hoses to clean areas, equipment or vehicles instead of a regular hose pipe.
Materials camp and lay-down areas	Suitable locations for the materials camp and lay-down areas should be identified with the assistance of the ER and the following should be considered in selecting these sites: • Avoid sensitive areas (see Figure 2). • The areas designated for the proposed services infrastructure should be used as far possible as lay-down areas. • Second choice should be degraded land.
SPECIFIC MITIGATION DETAILS	
Conservation of vegetation	• No construction or movement should take place beyond the site boundaries or in the demarcated area unless approved by a specialist (Figure 2).
Birds	• Consult an avifauna specialist for practical advice how to protect birds from collision and electrocution on the transmission line before construction.
Conservation of water	The provisions contained in the Water Management Plan (see Table 2) should be implemented.

SECTION G: EMPLOYMENT/RECRUITMENT

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Legislation	Adhere to the legal provisions in the Labour Act (see Table 1) for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.) in the Contract.
Recruitment	The Contractor should compile a document to be used as a guide for the recruitment process, which should include the following provisions as a minimum: • The local authority (town council, local headman etc.) should assist with the recruitment process. • Recruitment should not take place at construction sites. • Ensure that all sub-contractors are aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process. • Contractors should give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns. • Clearly explain to all job-seekers the terms and conditions of their respective employment contract (e.g. period of employment etc.) – make use of interpreters when necessary.

SECTION H: STAKEHOLDER COMMUNICATION

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Communication plan	The Contractor should draft a Communication Plan, which should outline as a minimum the following: • How stakeholders, who require ongoing communication for the duration of the construction period, will be identified and recorded and who will manage and update these records; • How these stakeholders will be consulted on an ongoing basis; • Make provision for grievance mechanisms – i.e. how concerns can/ will be lodged/ recorded and how feedback will be delivered as well as further steps of arbitration in the event feedback is deemed unsatisfactory.
General communication matters	• The ER should appoint an ECO to liaise between the Contractor, stakeholders, Developer, and consultants. The appointed Contractor shall appoint a person from the construction team to take responsibility for the implementation for all provisions of this EMP. • The Contractor shall at every site meeting report on the status of the implementation of all provisions of the EMP. • The Contractor should implement the environmental awareness training as stipulated in Section E. • The Contractor must list the stakeholders of the project and their contact details with whom ongoing communication would be required for duration of the contract. This list, together with the Communication Plan must be agreed upon and given to the ER before construction commences. • The Communication Plan, once agreed upon by the Developer, shall be binding. • All communication with the stakeholders must take place through the ECO. • A copy of the EMP must be available at the site office and should be accessible to all stakeholders • Key representatives from the above mentioned list need to be invited to attend monthly site meetings to raise any concerns and issues regarding project progress. • The Contractor should liaise with the Developer regarding all issues related to community consultation and negotiation before construction commences. • A procedure should be put in place to ensure that concerns raised have been followed-up and addressed. • All people on the stakeholders list should be informed about the availability of the complaints register in writing by the ER prior to the commencement of construction activities.
SPECIFIC MITIGATION DETAILS	
Communication with property owners	At the outset (i.e. before commencement) of the construction programme, all residents along the route will have to be informed about construction activities within the reserve

	in front of their property. This should be done in cooperation with the applicable constituency councillors.
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SECTION I: SOCIO-ECONOMIC AND MISCELLANEOUS

ASPECT	MITIGATION MEASURE
GENERIC MITIGATION DETAILS	
Archaeology and Heritage Resources	• Should a heritage site or archaeological site be uncovered or discovered during the construction phase of the project, a "chance find" procedure should be applied in the order they appear below: – If operating machinery or equipment stop work; – Demarcate the site with danger tape; – Determine GPS position if possible; – Report findings to foreman; • Action taken by foreman: – Report findings, site location and actions taken to superintendent; – Cease any works in immediate vicinity; • Action taken by Superintendent: – Visit site and determine whether work can proceed without damage to findings; – Determine and demarcate exclusion boundary; – Site location and details to be added to the project's Geographic Information System (GIS) for field confirmation by archaeologist; • Action taken by archaeologist – Inspect site and confirm addition to project GIS; – Advise the National Heritage Council (NHC) and request written permission to remove findings from work area; and – Recovery, packaging and labelling of findings for transfer to National Museum. • Should human remains be found, the following actions will be required: – Apply the chance find procedure as described above; – Schedule a field inspection with an archaeologist to confirm that remains are human; – Advise and liaise with the NHC and Police; and – Remains will be recovered and removed either to the National Museum or the National Forensic Laboratory as directed.

3.5 OPERATION AND MAINTENANCE PHASE

The following mitigation measures should be complied with and carried out during any operation and maintenance works associated with the project facilities and services infrastructure for the proposed project.

Table 5: Operation and maintenance phase mitigation measures

ASPECT	MITIGATION MEASURE
Maintenance of associated infrastructure	Maintenance works for the associated infrastructure within the project area should adhere to all provisions contained in Sections A to G of the construction mitigation measures of this EMP (Chapter 3.4).
Post-construction borrow pit usage	Borrow pits to be utilised post-construction should adhere to the same topsoil and rehabilitation measures outlined within construction mitigation measures of this EMP (Chapter 3.4) above.
Post-construction environmental training and awareness	All contractors appointed for maintenance work on the respective services infrastructure must ensure that all personnel are aware of necessary health, safety and environmental considerations applicable to their respective work.
Cleaning of PV tables	• A Water Management Plan should be compiled by the Developer and should include as a minimum the following: – All measures emanating from the Investigations regarding water conserving designs (see Table 2); and – Water effective equipment should be used (i.e. high-pressure hoses instead of regular hose pipes).

3.6 DECOMMISSIONING

ASPECT	MITIGATION MEASURE
Dismantling of project components and associated waste	• All materials produced from the dismantling of project components (which will not be sold) should be sorted into recyclable and non-recyclable materials. Recyclable material should be transported to the nearest recycling depot. • No waste should be left on site after the project has been decommissioned
Construction-like activities	Many of the activities involved in decommissioning a large project have considerable overlap with the activities for which mitigation measures have been provided for in Chapter 3.4 . Where applicable these should be complied with



Sorex Solar PV Plant, Trekkopje - EMP Compliance

11 Aug 2023 / ECC Info

Incomplete

Sorex Sun Energy, Trekkopje
Mine

Conducted on

11 Aug 2023 10:30 CAT

Prepared by

ECC Info

SECTION A: WASTE MANAGEMENT

Waste Management Plan

Has a waste management plan been created?

No

Hazardous Waste

Are all heavy construction vehicles and equipment on site in possession of a drip tray?

No



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5

Is all spilled concrete (wet or dry), treated as hazardous waste and disposed of by the end of each day, in the appropriate hazardous waste containers?

Yes

Are all hazardous substances like fuel or chemicals stored in containers which are stored on an impermeable surface that is bunded?

No



Photo 6



Photo 7

Sewage and Grey Water

Is there evidence of sewage (black water) discharged directly onto open soil along drainage lines, or any other unspecified areas?

No

General Waste

Is the construction site kept tidy at all times?

Yes



Photo 8



Photo 9

Are all domestic and general construction waste produced on a daily basis cleaned and contained daily?

Yes

Is waste buried or burned on site?

No

Are waste containers emptied regularly and removed from site to a recognised (municipal) waste disposal site?

Yes

Currently, refuse bags are supplied to the employees and then taken to the Walvis Bay landfill.

Is there a sufficient number of separate waste containers for hazardous and domestic/general waste provided on site and clearly marked as such?

No

The employees are supplied with refuse bags in which they place their waste and are removed from the site daily. Hazardous waste is placed in a separate container.

Are construction labourers sensitised to dispose of waste in a responsible manner and to not litter?

Yes

Safety Around Excavated and Work Areas

Are short lengths of trenches and box areas for services or foundations excavated so as to not allow trenches to be left unattended for more than 24 hours?

Yes

However, they are left for longer than 24 hours which causes smaller animals to fall in.



Photo 10



Photo 11



Photo 12

Toilets

Is there 1 toilet for every 50 males?

Yes



Photo 13



Photo 14

Are the toilets no further than 250m from the workers?

Yes

General

Do all employees have the needed PPE (hard hat, gloves, overalls, safety shoes and protective glasses)?

No

Is potable water provided to employees on site?

Yes

Is there evidence that persons smoke close to fuel storage facilities or portable chemical toilets?

No



Photo 15

SECTION D: DUST AND NOISE

Dust

Is a watering truck used on gravel roads with the most heavy vehicle movement, especially during dry and windy conditions?

Yes



Photo 16

SECTION I: SOCIO-ECONOMIC AND MISCELLANEOUS

Archaeology and Heritage Resources

Has a chance find procedure been developed according to the requirements set out in the EMP?

No



Sorex Solar PV Plant, Trekkopje - EMP Compliance

12 Sep 2023 / ECC Info

Incomplete

Actions	2
Sorex Solar PV Plant, Trekkopje	
Conducted on	12 Sep 2023 09:25 CAT
Prepared by	ECC Info

Waste Management Plan

Has a waste management plan been created?

Presently the contractor removes waste from the site daily and once the main contractor starts a waste management plant will be created.

Hazardous Waste

1 action

Are all heavy construction vehicles and equipment on site in possession of a drip tray?

No



Photo 1

To do | Assignee ECC Info | Priority Low | Due 12 Oct 2023 12:03 CAT | Created by ECC Info

Hazardous spill prevention

All hazardous materials and equipment must be placed inside a drip tray or bunded area to prevent soil contamination.

Are all hazardous substances like fuel or chemicals stored in containers which are stored on an impermeable surface that is bunded?

Yes



Photo 2



Photo 3

Sewage and Grey Water

Is there evidence of sewage (black water) discharged directly onto open soil along drainage lines, or any other unspecified areas?

No



Photo 4



Photo 5



Photo 6



Photo 7

Is sewage removed from site on regularly and disposed of at a recognised (municipal) sewage treatment facility?

Yes

General Waste

Is the construction site kept tidy at all times?

Yes

Are all domestic and general construction waste produced on a daily basis cleaned and contained daily?

Yes

Is waste buried or burned on site?

No

Are waste containers emptied regularly and removed from site to a recognised (municipal) waste disposal site?

Yes

Are construction labourers sensitised to dispose of waste in a responsible manner and to not litter?

Yes

APPENDIX C: HEALTH AND SAFETY

Toilets

Are there separate toilets for males and females?

N/A

At this stage of project there are only males on site.

Is there 1 toilet for every 50 males?

Yes



Photo 8

Are the toilets no further than 250m from the workers?

Yes

General

Do all employees have the needed PPE (hard hat, gloves, overalls, safety shoes and protective glasses)?

Yes

PPE register



Photo 9



Photo 10

Is potable water provided to employees on site?

Yes

Is there evidence that persons smoke close to fuel storage facilities or portable chemical toilets?

No



Photo 11



Photo 12



Photo 13



Photo 14

Do workers drink alcohol during work hours?

No

SECTION D: DUST AND NOISE

Dust

Is a watering truck used on gravel roads with the most heavy vehicle movement, especially during dry and windy conditions?

Yes



Photo 15



Photo 16

Are the size of stockpiles of large quantities of soil, topsoil and other fine material limited?

Yes

Noise

Are work hours restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles are less than 500m from residential areas?

Yes

SECTION E: ENVIRONMENTAL TRAINING AND AWARENESS and SECTION F: ENVIRONMENTAL CONSERVATION

1 action

Environmental Induction (Training)

1 action

Is the importance of complying with the EMP explained to workers?

Yes

Are employees trained on their roles and responsibilities, including emergency preparedness?

No

To do | Assignee ECC Info | Priority Low | Due 12 Oct 2023 12:44 CAT | Created by ECC Info

Emergency preparedness

Fire extinguishers, first aid kit and equipment needed to clean hazardous spills were not found on site.

Conservation of Vegetation

Is there evidence of driving beyond demarcated areas and off established roads taking place?

No

Is there evidence of movement of staff or visitors beyond the project site?

No

Is the collection of plants or wood for cooking beyond the project site strictly prohibited?

Yes

Conservation of Water

Are brooms used to clean floors rather than hosing them down with a pipe?

Yes

Materials Camp and Lay-down Areas

Are the materials camp and lay-down areas a safe distance from sensitive areas?

Yes

Are the areas designated for the proposed services infrastructure used as lay-down areas as far as possible?

Yes



Photo 17



Photo 18

Conservation of Vegetation and Birds

Is construction or movement limited to the site boundaries and demarcated areas, unless approved by a specialist?

Yes

SECTION G: EMPLOYMENT/RECRUITMENT,

Legislation and Recruitment

Does the contractor adhere to the legal provisions in the Labour Act (see Table 1 in EMP) for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.) in the contract?

Yes

Are the terms and conditions of their respective employment contracts (e.g., period of employment etc.) clearly explained to all jobseekers?

Yes



Sorex Solar PV Plant, Trekkopje - EMP Compliance

12 Oct 2023 / ECC Info

Complete

Actions	1
	Sorex Solar PV Plant, Trekkopje
Conducted on	12 Oct 2023 08:07 CAT
Prepared by	ECC Info
Location	2F9J+P4M, Walvis Bay, Namibia (-22.9806596, 14.480295600000002)

SECTION A: WASTE MANAGEMENT

Waste Management Plan

Has a waste management plan been created?

Yes

Waste management plan

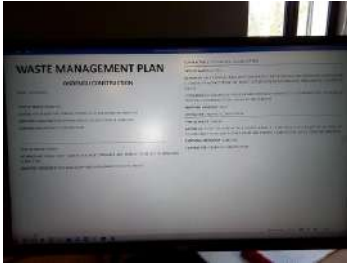


Photo 1

Hazardous Waste

Are all heavy construction vehicles and equipment on site in possession of a drip tray?

Yes



Photo 2

Are drip trays cleaned daily and spillage handled, stored and disposed of as hazardous waste?

N/A

Is all spilled concrete (wet or dry), treated as hazardous waste and disposed of by the end of each day, in the appropriate hazardous waste containers?

Yes



Photo 3

Are all hazardous substances like fuel or chemicals stored in containers which are stored on an impermeable surface that is bunded?

Yes



Photo 4



Photo 5

Is the workshop area lined with concrete?

Yes



Photo 6



Photo 7



Photo 8



Photo 9

Sewage and Grey Water

Is there evidence of sewage (black water) discharged directly onto open soil along drainage lines, or any other unspecified areas?

No



Photo 10



Photo 11

Is sewage removed from site on regularly and disposed of at a recognised (municipal) sewage treatment facility?

Yes

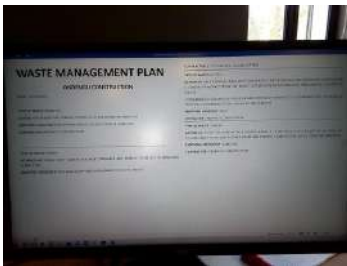


Photo 12

General Waste

Is the construction site kept tidy at all times?

Yes



Photo 13

Are all domestic and general construction waste produced on a daily basis cleaned and contained daily?

Yes

Is waste buried or burned on site?

No

Are waste containers emptied regularly and removed from site to a recognised (municipal) waste disposal site?

Yes

Are construction labourers sensitised to dispose of waste in a responsible manner and to not litter?

Yes



Photo 14

APPENDIX C: HEALTH AND SAFETY

1 action

Road Safety

Are all vehicles that transport materials to and from the site, road-worthy?

Yes

Do all drivers that transport materials have a valid driver's license and adhere to all traffic rules?

Yes

Safety Around Excavated and Work Areas

1 action

Are short lengths of trenches and box areas for services or foundations excavated so as to not allow trenches to be left unattended for more than 24 hours?

Yes

The holes dug for the fence is being closed up to set up of the fence.

Are soil and other building material stockpiles demarcated with danger tape?

No



Photo 15

To do | Assignee ECC Info | Priority Low | Due 10 Nov 2023 14:05 CAT | Created by ECC Info

Material stockpiles

All material stockpiles should be demarcated with danger tape.

Are only construction personnel allowed within these work areas?

Yes

Toilets

Are there separate toilets for males and females?

N/A

Is there 1 toilet for every 25 females?

N/A

Is there 1 toilet for every 50 males?

Yes



Photo 16



Photo 17



Photo 18



Photo 19



Photo 20



Photo 21



Photo 22



Photo 23

Are the toilets no further than 250m from the workers?

Yes



Photo 24

Is the adequacy of the number of toilets on sites closely monitored?

Yes



Photo 25



Photo 26



Photo 27

General

Are there open fires created anywhere on site?

No

Do all employees have the needed PPE (hard hat, gloves, overalls, safety shoes and protective glasses)?

Yes



Photo 28

Is potable water provided to employees on site?

Yes



Photo 29



Photo 30

Is there evidence that persons smoke close to fuel storage facilities or portable chemical toilets?

No



Photo 31



Photo 32



Photo 33



Photo 34



Photo 35



Photo 36

Do workers drink alcohol during work hours?

No

SECTION D: DUST AND NOISE

Dust

Is a watering truck used on gravel roads with the most heavy vehicle movement, especially during dry and windy conditions?

Yes

Are the size of stockpiles of large quantities of soil, topsoil and other fine material limited?

Yes



Photo 37

Noise

Are work hours restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles are less than 500m from residential areas?

Yes

SECTION E: ENVIRONMENTAL TRAINING AND AWARENESS and SECTION F: ENVIRONMENTAL CONSERVATION

Environmental Induction (Training)

Is the importance of complying with the EMP explained to workers?

Yes

Registers

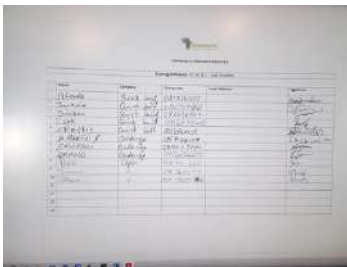


Photo 38

[Sorexa EMP training.pdf](#)

Conservation of Vegetation

Is there evidence of driving beyond demarcated areas and off established roads taking place?

No

Is there evidence of movement of staff or visitors beyond the project site?

No

Is the collection of plants or wood for cooking beyond the project site strictly prohibited?

Yes

Materials Camp and Lay-down Areas

Are the materials camp and lay-down areas a safe distance from sensitive areas?

Yes

Are the areas designated for the proposed services infrastructure used as lay-down areas as far as possible?

Yes



Sorex Solar PV Plant, Trekkopje - EMP Compliance

10 Nov 2023 / Michael Cloete

Incomplete

Flagged items	3	Actions	2
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Sorex Solar PV Plant, Trekkopje

Conducted on	10 Nov 2023 10:00 CAT
Prepared by	Michael Cloete

Flagged items

3 flagged

SECTION A: WASTE MANAGEMENT / Waste Management Plan

Has a waste management plan been created?

No

Waste management plan should be implemented by the next scheduled site visit.

APPENDIX C: HEALTH AND SAFETY / Safety Around Excavated and Work Areas

Are soil and other building material stockpiles demarcated with danger tape?

No

To do | Assignee **ECC Info** | Priority **Low** | Due **14 Dec 2023 07:38 CAT** | Created by **ECC Info**

Stockpile demarcation

Material stockpiles must be demarcated by the next site visit.

SECTION I: SOCIO-ECONOMIC AND MISCELLANEOUS / Archaeology and Heritage Resources

Has a chance find procedure been developed according to the requirements set out in the EMP?

No

To do | Assignee **ECC Info** | Priority **Low** | Due **13 Dec 2023 11:10 CAT** | Created by **ECC Info**

Chance find procedure

A chance find procedure must be developed.

2.2: ENVIRONMENTAL CONTROL OFFICER (ECO)

Are monthly inspection conducted?

Yes

Are all permits valid?

Yes

Are appropriate actions taken if the specifications of the EMP are not adhered to?

Yes

Is there advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER?

Yes

Are continuous reviews of the EMP and recommended additions and/or changes made to the document?

Yes

SECTION A: WASTE MANAGEMENT

1 flagged

Waste Management Plan

1 flagged

Has a waste management plan been created?

No

Waste management plan should be implemented by the next scheduled site visit.

Hazardous Waste

Are all heavy construction vehicles and equipment on site in possession of a drip tray?

Yes



Photo 1



Photo 2



Photo 3



Photo 4

Are drip trays cleaned daily and spillage handled, stored and disposed of as hazardous waste?

Yes

Is all spilled concrete (wet or dry), treated as hazardous waste and disposed of by the end of each day, in the appropriate hazardous waste containers?

Yes

Are all hazardous substances like fuel or chemicals stored in containers which are stored on an impermeable surface that is bunded?

Yes

Does the maintenance and washing of construction vehicles take place only at a designated workshop area?

Yes

Is the workshop area lined with concrete?	Yes
Sewage and Grey Water	
Is there evidence of sewage (black water) discharged directly onto open soil along drainage lines, or any other unspecified areas?	No
Is sewage removed from site on regularly and disposed of at a recognised (municipal) sewage treatment facility?	Yes
Is water collected from equipment cleaning areas (grey water), left standing for long periods of time (promoting parasite and bacterial proliferation)?	No
If practicable, is grey used for dust suppression or to clean equipment?	Yes
General Waste	
Is the construction site kept tidy at all times?	Yes
 Photo 5	 Photo 6
 Photo 7	
Is waste buried or burned on site?	No
Are waste containers emptied regularly and removed from site to a recognised (municipal) waste disposal site?	Yes
Taken off site to Arandis on vehicles daily	
Are construction labourers sensitised to dispose of waste in a responsible manner and to not litter?	Yes

APPENDIX C: HEALTH AND SAFETY

1 flagged, 1 action

Road Safety

Are all vehicles that transport materials to and from the site, road-worthy?

Yes

Photo 8

Do all drivers that transport materials have a valid driver's license and adhere to all traffic rules?

Yes

List of drivers, incident register

Foreman for NEC

Are loads upon vehicles properly secured to avoid items falling off the vehicle?

Yes**Safety Around Excavated and Work Areas**

1 flagged, 1 action

Are soil and other building material stockpiles demarcated with danger tape?

No

To do | Assignee **ECC Info** | Priority **Low** | Due **14 Dec 2023 07:38 CAT** | Created by **ECC Info**

Stockpile demarcation

Material stockpiles must be demarcated by the next site visit.

Are only construction personnel allowed within these work areas?

Yes

Are 2 fire extinguishers available at the fuel storage area and are they charged?

Yes



Photo 9



Photo 10



Photo 11



Photo 12

Toilets

Are there separate toilets for males and females?



Photo 13

Is there 1 toilet for every 50 males?

Yes



Photo 14

Are the toilets no further than 250m from the workers?

Yes



Photo 15



Photo 16

Is the adequacy of the number of toilets on sites closely monitored?

Yes

6 toilets on site, 4 portable, 2 indoor

General

Are there open fires created anywhere on site?

No

Do all employees have the needed PPE (hard hat, gloves, overalls, safety shoes and protective glasses)?

Yes

Is potable water provided to employees on site?

Yes

Is there evidence that persons smoke close to fuel storage facilities or portable chemical toilets?

No

Do workers drink alcohol during work hours?

No

SECTION D: DUST AND NOISE

Dust

Is a watering truck used on gravel roads with the most heavy vehicle movement, especially during dry and windy conditions?

Yes



Photo 17

Is there adequate ventilation available in the event of sanding or grinding work?

Yes

Outdoor

Are stockpiles of building materials and earth material kept moist or the surfaces stabilised?

Yes



Photo 18



Photo 19

Are the size of stockpiles of large quantities of soil, topsoil and other fine material limited?

Yes



Photo 20



Photo 21

Are awareness of ambient air quality and consideration regarding wind speed and direction taught for the undertaking of dust generating activities?

Yes

Noise

Are work hours restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles are less than 500m from residential areas?

Yes

SECTION E: ENVIRONMENTAL TRAINING AND AWARENESS and SECTION F: ENVIRONMENTAL CONSERVATION

Environmental Induction (Training)

Is the importance of complying with the EMP explained to workers?	Yes
Is the potential environmental impacts of construction activities discussed?	Yes
Are employees trained on their roles and responsibilities, including emergency preparedness?	Yes
Is there an explanation of the specific mitigation measures within this EMP, especially unfamiliar provisions?	Yes

Conservation of Vegetation

Is there evidence of driving beyond demarcated areas and off established roads taking place?	No
Is there evidence of movement of staff or visitors beyond the project site?	No
Is the collection of plants or wood for cooking beyond the project site strictly prohibited?	Yes

Conservation of Water

Are all leaking fittings repaired or replaced timeously?	Yes
Are brooms used to clean floors rather than hosing them down with a pipe?	Yes
Are buckets or high pressure hoses used to clean areas, equipment, or vehicles instead of a regular hose pipe?	Yes

Materials Camp and Lay-down Areas

Are the materials camp and lay-down areas a safe distance from sensitive areas?	Yes
---	-----

300m from the proposed lay down area



Photo 22

Are the areas designated for the proposed services infrastructure used as lay-down areas as far as possible?

Yes

Conservation of Vegetation and Birds

Is construction or movement limited to the site boundaries and demarcated areas, unless approved by a specialist?

Yes

SECTION G: EMPLOYMENT/RECRUITMENT,

Legislation and Recruitment

Does the contractor adhere to the legal provisions in the Labour Act (see Table 1 in EMP) for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.) in the contract?

Yes

Nimt and local authority such as Arandis town council used for recruitment

Has a recruitment process been developed?

Yes

Does the process include local authority (town council, local headman etc.) assistance with the recruitment process?

Yes

Are all sub-contractors aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process?

Yes

Does recruitment take place at construction sites?

No

Do contractors give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns?

Yes

From NIMT and Arandis Town council

Are the terms and conditions of their respective employment contracts (e.g., period of employment etc.) clearly explained to all jobseekers?

Yes

SECTION H: STAKEHOLDER COMMUNICATION

General Communication Matters and Communication with Property Owners

Has the ER appointed an ECO to liaise between the Contractor, stakeholders, Developer, and consultants?

Yes

Does the Contractor report on the status of the implementation of all provisions of the EMP during every site meeting?

Yes

Does the Contractor list the stakeholders of the project and their contact details with whom ongoing communication would be required for duration of the contract?

Yes

Are all people on the stakeholder list informed about the availability of the complaints register in writing by the ER, prior to the commencement of construction activities?

Yes

Is a copy of the EMP available at the site office and accessible to all stakeholders?

Yes

SECTION I: SOCIO-ECONOMIC AND MISCELLANEOUS

1 flagged, 1 action

Archaeology and Heritage Resources

1 flagged, 1 action

Has a chance find procedure been developed according to the requirements set out in the EMP?

No

To do | Assignee **ECC Info** | Priority **Low** | Due **13 Dec 2023 11:10 CAT** | Created by **ECC Info**

Chance find procedure

A chance find procedure must be developed.

PV Plant - EMP Compliance

13 Dec 2023 / Michael and Diaan

Incomplete

Actions	0
	Sorex Sun Energy
Conducted on	13 Dec 2023 10:33 AM CAT
Prepared by	Michael and Diaan
Location	Erongo Region, Namibia (-22.2565682, 15.4068079)

6.2.3: ENVIRONMENTAL CONTROL OFFICER (ECO)

Are adequate environmental awareness training for senior site personnel conducted?	Yes
Is there compliance with the relevant national legislation and the EMP?	Yes
Are appropriate actions taken if the specifications of the EMP are not adhered to?	Yes
Is there advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER?	Yes
Are continuous reviews of the EMP and recommended additions and/or changes made to the document?	Yes

WASTE MANAGEMENT

Waste Management Plan

Has a waste management plan been created?

Yes

Internal review

Hazardous Waste

Are all heavy construction vehicles and equipment on site in possession of a drip tray?

Yes



Photo 1



Photo 2

Are drip trays cleaned daily and spillage handled, stored and disposed of as hazardous waste?

Yes

Is all spilled concrete (wet or dry), treated as hazardous waste and disposed of by the end of each day, in the appropriate hazardous waste containers?

Yes

Are all hazardous substances like fuel or chemicals stored in containers which are stored on an impermeable surface that is bunded?

N/A

Fuel transported from arandis daily

Are battery systems sealed and not opened or serviced on site?

Yes



Photo 3



Photo 4

Does the maintenance and washing of construction vehicles

N/A

take place only at a designated workshop area?

No maintenance or washing on site

Is the workshop area lined with concrete?

N/A

No workshop, storage area only



Photo 5

Sewage and Grey Water

Is there evidence of sewage (black water) discharged directly onto open soil along drainage lines, or any other unspecified areas?

No

Is sewage removed from site on regularly and disposed of at a recognised (municipal) sewage treatment facility?

Yes

Elite services from Swakopmund, twice a week, Tuesdays and Thursdays



Photo 6

Is water collected from equipment cleaning areas (grey water), left standing for long periods of time (promoting parasite and bacterial proliferation)?

No

If practicable, is grey used for dust suppression or to clean equipment?

Yes

General Waste

Is the construction site kept tidy at all times?

Yes



Photo 7



Photo 8

Are all domestic and general construction waste produced on a daily basis cleaned and contained daily?

Yes

General waste taken to Arandis daily

Is waste buried or burned on site?

No

Are waste containers emptied regularly and removed from site to a recognised (municipal) waste disposal site?

Yes

Is recyclable waste taken to the nearest recycling depot?

Yes

Taken to arandis daily

Is there a sufficient number of separate waste containers for hazardous and domestic/general waste provided on site and clearly marked as such?

N/A

Are construction labourers sensitised to dispose of waste in a responsible manner and to not litter?

Yes

Housekeeping done daily

HEALTH AND SAFETY

HIV/AIDS and TB Training

Does the contractor approach the Ministry of Health and Social Services to co-opt a health officer, to facilitate HIV/AIDS and TB education programs periodically on site during the construction phase?

N/A

NEC employees covered by NAMED
Ministry to get involved in 2024

Road Safety

Are all vehicles that transport materials to and from the site, road-worthy?

Yes



Photo 9

Do all drivers that transport materials have a valid driver's license and adhere to all traffic rules?

Yes

List of drivers, incident register

NEC head contractor transport material to site

Are loads upon vehicles properly secured to avoid items falling off the vehicle?

Yes

Material arrived on site in containers

Safety Around Excavated and Work Areas

Are short lengths of trenches and box areas for services or foundations excavated so as to not allow trenches to be left unattended for more than 24 hours?

N/A

Trenches not yet commenced

Are all excavation works demarcated with danger tape?

N/A

Are soil and other building material stockpiles demarcated with danger tape?

Yes



Photo 10



Photo 11

Are temporary waste stockpiles demarcated with danger tape?

N/A

Are only construction personnel allowed within these work areas?

N/A

Are 2 fire extinguishers available at the fuel storage area and are they charged?

Yes



Photo 12



Photo 13

Toilets

Are there separate toilets for males and females?

Yes

5 portable and two built



Photo 14

Is there 1 toilet for every 25 females?

Yes

Is there 1 toilet for every 50 males?

Yes



Photo 15

Are the toilets no further than 250m from the workers?

Yes



Photo 16

Is the adequacy of the number of toilets on sites closely monitored?

Yes

General

Are there any trees or natural vegetation removed on-site to create open fires?

No

Do all employees have the needed PPE (hard hat, gloves, overalls, safety shoes and protective glasses)?

Yes

PPE register



Photo 17



Photo 18



Photo 19

Is potable water provided to employees on site?

Yes

80 litres



Photo 20

Is there evidence that persons smoke close to fuel storage facilities or portable chemical toilets?

No



Photo 21



Photo 22

Do workers drink alcohol during work hours?

No

Is unauthorized public access controlled?

Yes



Photo 23



Photo 24



Photo 25



Photo 26

DUST AND NOISE

Dust

Is a watering truck used on gravel roads with the most heavy vehicle movement, especially during dry and windy conditions?

Yes

Once a week or once every second week

Is there adequate ventilation available in the event of sanding or grinding work?

Yes

Outside

Are stockpiles of building materials and earth material kept moist or the surfaces stabilised?

N/A

Not advisable due to cement mixing requirements

Are the size of stockpiles of large quantities of soil, topsoil and other fine material limited?

Yes



Photo 27

Are awareness of ambient air quality and consideration regarding wind speed and direction taught for the undertaking of dust generating activities?

Yes

Noise

Are work hours restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles are less than 500m from residential areas?

Yes



Photo 28

Are all receptors (residents or businesses within 500m from the work areas) notified at least 2 days in advance in the event that work is necessary outside the designated working hours?

N/A

No neighbors, trekkopje regular communication

Do vehicles have regular engine maintenance programs, to control vehicle emissions?

Yes

ENVIRONMENTAL TRAINING AND AWARENESS, ENVIRONMENTAL CONSERVATION

Environmental Induction (Training)

Is the importance of complying with the EMP explained to workers?

Yes

Registers



Photo 29

Training material containing EMP details.



Photo 30



Photo 31

Is the potential environmental impacts of construction activities discussed?

Yes

Training material containing potential environmental impacts.



Photo 32

Are employees trained on their roles and responsibilities,

Yes

including emergency preparedness?	
Is there an explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities?	Yes
Is there an explanation of the specific mitigation measures within this EMP, especially unfamiliar provisions?	Yes
Conservation of Vegetation	
Is there evidence of driving beyond demarcated areas and off established roads taking place?	No
Is there evidence of movement of staff or visitors beyond the project site?	No
Is the collection of plants or wood for cooking beyond the project site strictly prohibited?	Yes
Conservation of Water	
Is water effective equipment used?	N/A
Are all leaking fittings repaired or replaced timeously?	N/A
Are brooms used to clean floors rather than hosing them down with a pipe?	Yes
 Photo 33	
Are buckets or high pressure hoses used to clean areas, equipment, or vehicles instead of a regular hose pipe?	N/A
Do not clean equipment on site	
Are the provisions contained in the Water Management Plan implemented?	N/A
Materials Camp and Lay-down Areas	
Are the materials camp and lay-down areas a safe distance	Yes

from sensitive areas?

More than 200m from sensitive areas



Photo 34

Are the areas designated for the proposed services infrastructure used as lay-down areas as far as possible?

N/A

Conservation of Vegetation, birds and bats

Is construction or movement limited to the site boundaries and demarcated areas, unless approved by a specialist?

Yes

Is there appropriate stormwater management in place?

Yes

Natural drainage being used

Are animals injured, fed, trapped, hunted or harmed in any way?

N/A

EMPLOYMENT/RECRUITMENT,

Legislation and Recruitment

Does the contractor adhere to the legal provisions in the Labour Act (see Table 1 in EMP) for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.) in the contract?

Yes

NIMT and Spitzkoppe conservancy used for recruitment

Has a recruitment process been developed?

Yes

Does the process include local authority (town council, local headman etc.) assistance with the recruitment process?

Yes

Are all sub-contractors aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process?

Yes

Does recruitment take place at construction sites?

No

Do contractors give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns?

Yes

Are the terms and conditions of their respective employment contracts (e.g., period of employment etc.) clearly explained to all jobseekers?

Yes

Are interpreters used when necessary?

N/A

STAKEHOLDER COMMUNICATION

Communication Plan

Has the contractor developed a Communication Plan?

N/A

General Communication Matters and Communication with Property Owners

Has the ER appointed an ECO to liaise between the Contractor, stakeholders, Developer, and consultants?

Yes

Has the appointed Contractor appointed a person from the construction team to take responsibility for the implementation of all provisions of this EMP?

Yes

Does the Contractor report on the status of the implementation of all provisions of the EMP during every site meeting?

Yes

Does all communication with the stakeholders take place through the ECO?

N/A

Is a copy of the EMP available at the site office and accessible to all stakeholders?

Yes



Photo 35

SOCIO-ECONOMIC AND MISCELLANEOUS

Archaeology and Heritage Resources

Has a chance find procedure been developed according to the requirements set out in the EMP?

Yes

Have there been any chance finds?

N/A

PV Plant - EMP Compliance

18 Jan 2024 / Diaan

Incomplete

Actions	0
Sorexsa Sun Energy	
Conducted on	18 Jan 2024 10:33 AM CAT
Prepared by	Diaan
Location	Sorexsa PV Plant

6.2.3: ENVIRONMENTAL CONTROL OFFICER (ECO)	
Are adequate environmental awareness training for senior site personnel conducted?	Yes
Is there compliance with the relevant national legislation and the EMP?	Yes
Are appropriate actions taken if the specifications of the EMP are not adhered to?	Yes
Is there advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER?	Yes
Are continuous reviews of the EMP and recommended additions and/or changes made to the document?	Yes

WASTE MANAGEMENT

Waste Management Plan

Has a waste management plan been created?

N/A

The waste management plan is currently being reviewed by Innosun.

Hazardous Waste

Are all heavy construction vehicles and equipment on site in possession of a drip tray?

Yes



Photo 1



Photo 2

Are drip trays cleaned daily and spillage handled, stored and disposed of as hazardous waste?

Yes

Is all spilled concrete (wet or dry), treated as hazardous waste and disposed of by the end of each day, in the appropriate hazardous waste containers?

Yes

Are all hazardous substances like fuel or chemicals stored in containers which are stored on an impermeable surface that is bunded?

N/A

Fuel is transported from Arandis to site daily.

Are battery systems sealed and not opened or serviced on site?

Yes



Photo 3



Photo 4

Does the maintenance and washing of construction vehicles

N/A

take place only at a designated workshop area?

No maintenance or washing takes place on-site.

Is the workshop area lined with concrete?

N/A

There is no workshop, only a storage area.



Photo 5

Sewage and Grey Water

Is there evidence of sewage (black water) discharged directly onto open soil along drainage lines, or any other unspecified areas?

No

Is sewage removed from site on regularly and disposed of at a recognised (municipal) sewage treatment facility?

Yes

Elite services in Swakopmund clean the mobile toilets twice a week, Tuesdays and Thursdays.



Photo 6

Is water collected from equipment cleaning areas (grey water), left standing for long periods of time (promoting parasite and bacterial proliferation)?

No

If practicable, is grey used for dust suppression or to clean equipment?

Yes

General Waste

Is the construction site kept tidy at all times?

Yes



Photo 7



Photo 8

Are all domestic and general construction waste produced on a daily basis cleaned and contained daily?

Yes

General waste is taken to Arandis daily.

Is waste buried or burned on site?

No

Are waste containers emptied regularly and removed from site to a recognised (municipal) waste disposal site?

Yes

Is recyclable waste taken to the nearest recycling depot?

Yes

General waste is taken to Arandis on a daily basis and the recyclable waste taken to Swakopmund weekly.



Photo 9



Photo 10

Is there a sufficient number of separate waste containers for hazardous and domestic/general waste provided on site and clearly marked as such?

N/A

Are construction labourers sensitised to dispose of waste in a responsible manner and to not litter?

Yes

Housekeeping is done everyday.

HEALTH AND SAFETY

HIV/AIDS and TB Training

Does the contractor approach the Ministry of Health and Social Services to co-opt a health officer, to facilitate HIV/AIDS and TB education programs periodically on site during the construction phase?

N/A

NEC employees are covered by NAMED.
Ministry will become involved in 2024.

Road Safety

Are all vehicles that transport materials to and from the site, road-worthy?

Yes



Photo 11

Do all drivers that transport materials have a valid driver's license and adhere to all traffic rules?

Yes

List of drivers, incident register

NEC head contractor transports material to site.

Are loads upon vehicles properly secured to avoid items falling off the vehicle?

Yes

Material arrived on site in containers.

Safety Around Excavated and Work Areas

Are short lengths of trenches and box areas for services or foundations excavated so as to not allow trenches to be left unattended for more than 24 hours?

N/A

The creation of trenches have not commenced.

Are all excavation works demarcated with danger tape?

N/A

Are soil and other building material stockpiles demarcated with danger tape?

Yes



Photo 12



Photo 13

Are temporary waste stockpiles demarcated with danger tape?

N/A

Are only construction personnel allowed within these work areas?

N/A

Are 2 fire extinguishers available at the fuel storage area and are they charged?

Yes



Photo 14



Photo 15

Toilets

Are there separate toilets for males and females?

Yes

5 portable and two built



Photo 16

Is there 1 toilet for every 25 females?

Yes

Currently, there is one female employee with her toilet.

Is there 1 toilet for every 50 males?

Yes

There are 17 employees and 4 toilets on site.



Photo 17

Are the toilets no further than 250m from the workers?

Yes



Photo 18

Is the adequacy of the number of toilets on sites closely monitored?

Yes

General

Are there any trees or natural vegetation removed on-site to create open fires?

No

Do all employees have the needed PPE (hard hat, gloves, overalls, safety shoes and protective glasses)?

Yes

PPE register



Photo 19



Photo 20



Photo 21

Is potable water provided to employees on site?

Yes

80 litres



Photo 22

Is there evidence that persons smoke close to fuel storage facilities or portable chemical toilets?

No



Photo 23



Photo 24

Do workers drink alcohol during work hours?

No

Is unauthorized public access controlled?

Yes



Photo 25



Photo 26



Photo 27



Photo 28

DUST AND NOISE

Dust

Is a watering truck used on gravel roads with the most heavy vehicle movement, especially during dry and windy conditions?

Yes

Once a week to once every second week.

Is there adequate ventilation available in the event of sanding or grinding work?

Yes

Outside

Are stockpiles of building materials and earth material kept moist or the surfaces stabilised?

N/A

Not advisable due to cement mixing requirements.

Are the size of stockpiles of large quantities of soil, topsoil and other fine material limited?

Yes



Photo 29

Are awareness of ambient air quality and consideration regarding wind speed and direction taught for the undertaking of dust generating activities?

Yes

Noise

Are work hours restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles are less than 500m from residential areas?

Yes



Photo 30

Are all receptors (residents or businesses within 500m from the work areas) notified at least 2 days in advance in the event that work is necessary outside the designated working hours?

N/A

There are no neighbours. Regular communication with Trekkopje Mine.

Do vehicles have regular engine maintenance programs, to control vehicle emissions?

Yes

ENVIRONMENTAL TRAINING AND AWARENESS, ENVIRONMENTAL CONSERVATION

Environmental Induction (Training)

Is the importance of complying with the EMP explained to workers?

Yes

Registers



Photo 31

Training material containing EMP details.



Photo 32



Photo 33

Is the potential environmental impacts of construction activities discussed?

Yes

Training material containing potential environmental impacts.



Photo 34

Are employees trained on their roles and responsibilities,

Yes

including emergency preparedness?	
Is there an explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities?	Yes
Is there an explanation of the specific mitigation measures within this EMP, especially unfamiliar provisions?	Yes
Conservation of Vegetation	
Is there evidence of driving beyond demarcated areas and off established roads taking place?	No
Is there evidence of movement of staff or visitors beyond the project site?	No
Is the collection of plants or wood for cooking beyond the project site strictly prohibited?	Yes
Conservation of Water	
Is water effective equipment used?	N/A
Are all leaking fittings repaired or replaced timeously?	N/A
Are brooms used to clean floors rather than hosing them down with a pipe?	Yes
 Photo 35	
Are buckets or high pressure hoses used to clean areas, equipment, or vehicles instead of a regular hose pipe?	N/A
Cleaning of equipment does not take place on site.	
Are the provisions contained in the Water Management Plan implemented?	N/A
Materials Camp and Lay-down Areas	
Are the materials camp and lay-down areas a safe distance	Yes

from sensitive areas?

More than 200m from sensitive areas.



Photo 36

Are the areas designated for the proposed services infrastructure used as lay-down areas as far as possible?

N/A

Conservation of Vegetation, birds and bats

Is construction or movement limited to the site boundaries and demarcated areas, unless approved by a specialist?

Yes

Is there appropriate stormwater management in place?

Yes

Natural drainage being used

Are animals injured, fed, trapped, hunted or harmed in any way?

N/A

EMPLOYMENT/RECRUITMENT,

Legislation and Recruitment

Does the contractor adhere to the legal provisions in the Labour Act (see Table 1 in EMP) for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.) in the contract?

Yes

NIMT and Spitzkoppe conservancy are used for recruitment.

Has a recruitment process been developed?

Yes

Does the process include local authority (town council, local headman etc.) assistance with the recruitment process?

Yes

Are all sub-contractors aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process?

Yes

Does recruitment take place at construction sites?

No

Do contractors give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns?

Yes

Are the terms and conditions of their respective employment contracts (e.g., period of employment etc.) clearly explained to all jobseekers?

Yes

Are interpreters used when necessary?

N/A

STAKEHOLDER COMMUNICATION

Communication Plan

Has the contractor developed a Communication Plan?

N/A

General Communication Matters and Communication with Property Owners

Has the ER appointed an ECO to liaise between the Contractor, stakeholders, Developer, and consultants?

Yes

Has the appointed Contractor appointed a person from the construction team to take responsibility for the implementation of all provisions of this EMP?

Yes

Does the Contractor report on the status of the implementation of all provisions of the EMP during every site meeting?

Yes

Does all communication with the stakeholders take place through the ECO?

N/A

Is a copy of the EMP available at the site office and accessible to all stakeholders?

Yes



Photo 37

SOCIO-ECONOMIC AND MISCELLANEOUS

Archaeology and Heritage Resources

Has a chance find procedure been developed according to the requirements set out in the EMP?

Yes

Have there been any chance finds?

N/A

PV Plant - EMP Compliance

13 Feb 2024 / Diaan Hoffman

Incomplete

Actions	0
Sorexasun Energy	
Conducted on	13 Feb 2024 8:00 AM CAT
Prepared by	Diaan Hoffman
Location	Sorexasun PV Plant

6.2.3: ENVIRONMENTAL CONTROL OFFICER (ECO)

Are adequate environmental awareness training for senior site personnel conducted?

Yes



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5

Is there compliance with the relevant national legislation and the EMP?

Yes

Are appropriate actions taken if the specifications of the EMP are not adhered to?

Yes

Is there advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER?

Yes

Are continuous reviews of the EMP and recommended additions and/or changes made to the document?

Yes

WASTE MANAGEMENT

Waste Management Plan

Has a waste management plan been created?

Yes

Hazardous Waste

Are all heavy construction vehicles and equipment on site in possession of a drip tray?

Yes



Photo 6



Photo 7

Are drip trays cleaned daily and spillage handled, stored and disposed of as hazardous waste?

Yes

Is all spilled concrete (wet or dry), treated as hazardous waste and disposed of by the end of each day, in the appropriate hazardous waste containers?

Yes

Are all hazardous substances like fuel or chemicals stored in containers which are stored on an impermeable surface that is bunded?

N/A

Fuel is transported from Arandis to site daily. They are in the process of setting up a Diesel tank on-site.

Are battery systems sealed and not opened or serviced on site?

Yes



Photo 8



Photo 9

Does the maintenance and washing of construction vehicles take place only at a designated workshop area?

N/A

No maintenance or washing takes place on-site.

Is the workshop area lined with concrete?

N/A

There is no workshop, only a storage area.



Photo 10

Sewage and Grey Water

Is there evidence of sewage (black water) discharged directly onto open soil along drainage lines, or any other unspecified areas?

No

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Elite services in Swakopmund clean the mobile toilets twice a week, Tuesdays and Thursdays.



Photo 11

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Photo 12



Photo 13

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HIV/AIDS and TB Training

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N/A

NEC employees are covered by NAMED.
Ministry will become involved in 2024.

Road Safety

Are all vehicles that transport materials to and from the site, road-worthy?

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Photo 16

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List of drivers, incident register

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Photo 17



Photo 18

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N/A

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Is there 1 toilet for every 50 males?

Yes

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Photo 22

Are the toilets no further than 250m from the workers?

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Photo 23

Is the adequacy of the number of toilets on sites closely monitored?

Yes

General

Are there any trees or natural vegetation removed on-site to create open fires?

No

Do all employees have the needed PPE (hard hat, gloves, overalls, safety shoes and protective glasses)?

Yes

PPE register



Photo 24



Photo 25



Photo 26

Is potable water provided to employees on site?

Yes

80 litres



Photo 27

Is there evidence that persons smoke close to fuel storage facilities or portable chemical toilets?

No



Photo 28



Photo 29

Do workers drink alcohol during work hours?

No

Is unauthorized public access controlled?

Yes



Photo 30



Photo 31



Photo 32



Photo 33

DUST AND NOISE

Dust

Is a watering truck used on gravel roads with the most heavy vehicle movement, especially during dry and windy conditions?

Yes

Once a week to once every second week.

Is there adequate ventilation available in the event of sanding or grinding work?

Yes

Outside

Are stockpiles of building materials and earth material kept moist or the surfaces stabilised?

N/A

Not advisable due to cement mixing requirements.

Are the size of stockpiles of large quantities of soil, topsoil and other fine material limited?

Yes



Photo 34

Are awareness of ambient air quality and consideration regarding wind speed and direction taught for the undertaking of dust generating activities?

Yes

Noise

Are work hours restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles are less than 500m from residential areas?

Yes



Photo 35

Are all receptors (residents or businesses within 500m from the work areas) notified at least 2 days in advance in the event that work is necessary outside the designated working hours?

N/A

There are no neighbours. Regular communication with Trekkopje Mine.

Do vehicles have regular engine maintenance programs, to control vehicle emissions?

Yes

ENVIRONMENTAL TRAINING AND AWARENESS, ENVIRONMENTAL CONSERVATION

Environmental Induction (Training)

Is the importance of complying with the EMP explained to workers?

Yes

Registers



Photo 36

Training material containing EMP details.



Photo 37



Photo 38

Is the potential environmental impacts of construction activities discussed?

Yes

Training material containing potential environmental impacts.



Photo 39

Are employees trained on their roles and responsibilities,

Yes

including emergency preparedness?	
Is there an explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities?	Yes
Is there an explanation of the specific mitigation measures within this EMP, especially unfamiliar provisions?	Yes
Conservation of Vegetation	
Is there evidence of driving beyond demarcated areas and off established roads taking place?	No
Is there evidence of movement of staff or visitors beyond the project site?	No
Is the collection of plants or wood for cooking beyond the project site strictly prohibited?	Yes
Conservation of Water	
Is water effective equipment used?	N/A
Are all leaking fittings repaired or replaced timeously?	N/A
Are brooms used to clean floors rather than hosing them down with a pipe?	Yes
 Photo 40	
Are buckets or high pressure hoses used to clean areas, equipment, or vehicles instead of a regular hose pipe?	N/A
Cleaning of equipment does not take place on site.	
Are the provisions contained in the Water Management Plan implemented?	N/A
Materials Camp and Lay-down Areas	
Are the materials camp and lay-down areas a safe distance	Yes

from sensitive areas?

More than 200m from sensitive areas.



Photo 41

Are the areas designated for the proposed services infrastructure used as lay-down areas as far as possible?

N/A

Conservation of Vegetation, birds and bats

Is construction or movement limited to the site boundaries and demarcated areas, unless approved by a specialist?

Yes

Is there appropriate stormwater management in place?

Yes

Natural drainage being used

Are animals injured, fed, trapped, hunted or harmed in any way?

N/A

EMPLOYMENT/RECRUITMENT,

Legislation and Recruitment

Does the contractor adhere to the legal provisions in the Labour Act (see Table 1 in EMP) for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.) in the contract?

Yes

NIMT and Spitzkoppe conservancy are used for recruitment.

Has a recruitment process been developed?

Yes

Does the process include local authority (town council, local headman etc.) assistance with the recruitment process?

Yes

Are all sub-contractors aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process?

Yes

Does recruitment take place at construction sites?

No

Do contractors give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns?

Yes

Are the terms and conditions of their respective employment contracts (e.g., period of employment etc.) clearly explained to all jobseekers?

Yes

Are interpreters used when necessary?

N/A

STAKEHOLDER COMMUNICATION

Communication Plan

Has the contractor developed a Communication Plan?

N/A

General Communication Matters and Communication with Property Owners

Has the ER appointed an ECO to liaise between the Contractor, stakeholders, Developer, and consultants?

Yes

Has the appointed Contractor appointed a person from the construction team to take responsibility for the implementation of all provisions of this EMP?

Yes

Does the Contractor report on the status of the implementation of all provisions of the EMP during every site meeting?

Yes

Does all communication with the stakeholders take place through the ECO?

N/A

Is a copy of the EMP available at the site office and accessible to all stakeholders?

Yes



Photo 42

SOCIO-ECONOMIC AND MISCELLANEOUS

Archaeology and Heritage Resources

Has a chance find procedure been developed according to the requirements set out in the EMP?

Yes

Have there been any chance finds?

N/A



sorexa

Submitted to: Sorexa Sun Energy (Pty)
Ltd.

Attention: Mr. Alex Delle Donne
2 Schutzen Street
PO Box 27527
Windhoek, Namibia.

REPORT:

ENVIRONMENTAL BI-ANNUAL REPORT – MARCH 2024 TO AUGUST 2024

PROJECT NUMBER: ECC-43-472-REP-13-A

REPORT VERSION: REV 01

DATE: 05 DECEMBER 2024



TITLE AND APPROVAL PAGE

Project Name: Environmental bi-annual report – March 2024 to August 2024
Client Company Name: Sorexa Sun Energy (Pty) Ltd.
Client Name: Mr. Alex Delle Donne
Status of Report: Final report for government submission
Project Number: ECC-43-472-REP-13-A
Date of issue: 05 December 2024
Review Period N/A

ENVIRONMENTAL COMPLIANCE CONSULTANCY CONTACT DETAILS:

We welcome any enquiries regarding this document and its content. Please contact:



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Email: info@eccenvironmental.com

Quality Assurance

Authors:

A handwritten signature in black ink, appearing to be 'L. Bezuidenhout', written over a horizontal line.

Liezl Bezuidenhout

Environmental Compliance Consultancy

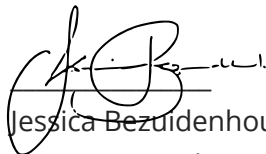
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DISCLAIMER

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EXECUTIVE SUMMARY

Construction of a new solar plant close to Trekkopje Mine commenced in August 2023. Sorex Sun Energy (Sorex or Proponent), a subsidiary of InnoSun Energy Holding Namibia (InnoSun), manages the Project. Ondengu Construction (Ondengu) was contracted to undertake the site preparation work of Phase 1 (9.8 Megawatt (MW) and Namibian Engineering Corporation (NEC) were contracted to conduct the mechanical and electrical scope for this phase of the Project.

This report serves as a six (6) monthly assessment (bi-annual report) of the implementation of the site environmental management plan (EMP) compliance, to report any other environmental performance and/or concerns that occurred during the Project implementation and to note any changes to the environmental certificate or EMP conditions, as required by the Ministry of Environment, Forestry and Tourism (MEFT) in line with the Environmental Management Act, No. 7 of 2007 and associated 2012 Regulations.

This bi-annual report summarises the findings and observations of the monthly and/or quarterly audits by Environmental Compliance Consultancy (ECC) to evaluate compliance with the site-specific environmental management plan (EMP) and offers comments on the overall performance in adhering to the EMP requirements for the period March 2024 to August 2024.

The following observations and non-conformances were identified over the audited period. These were communicated and, in most cases, rectified or actions amended toward achieving compliance:

- i) Increase in fine dust created by vehicles on the road;
- ii) Increase of chameleons and snake activities on site;
- iii) Overdue service(s) of fire extinguisher(s); and
- iv) A bunded area for the diesel tank has not been created.

Due to the overall improvements made on site, an executive decision was made to reduce the monthly inspections to quarterly inspections.

TABLE OF CONTENTS

1	Introduction	7
1.1	Background.....	7
1.2	Purpose of the report.....	11
1.3	Onsite information collection.....	11
1.4	Environmental Compliance Consultancy.....	11
1.5	The proponent of the proposed project	12
2	EMP Compliance summary.....	13
2.1	Summary of audit findings and corrective actions from March 2024 to August 2024 bi-annual reporting period	13
3	Environmental compliance audit.....	15
3.1	Rehabilitation	37
4	Conclusion.....	38

LIST OF TABLES

Table 1 – Proponent’s details.....	12
Table 2 - Activity summary from March 2024 to August 2024	14
Table 3 - EMP compliance audit	15

LIST OF FIGURES

Figure 1 – Sorex Sun Energy 50 MW solar power plant to be constructed.....	8
Figure 2 - Phase 1 of the Trekkopje PV plant.....	9
Figure 3 - Sensitive vegetation and lithops in relation to the total 150 hectare (ha) site area	10

APPENDICES

Appendix A – Environmental Management Plan	39
Appendix B – Environmental clearance certificate	40
Appendix C – auditor report March 2024	42
Appendix D - auditor report April 2024.....	43
Appendix E - auditor report May 2024	44
Appendix F – auditor report August 2024.....	45

ABBREVIATIONS

Abbreviation	Description
AIDS	acquired immunodeficiency syndrome
ECC	Environmental Compliance Consultancy (Pty) Ltd
ECO	environmental control officer
ESIA	environmental and social impact assessment
EMP	environmental management plan
ER	employee respective
GPS	Global positioning system
ha	hectare
HIV	human immunodeficiency virus
InnoSun	InnoSun Energy Holding Namibia (Pty) Ltd
kV	kilovolt
MEFT	Ministry of Environment, Forestry and Tourism
m	metre
MSDS	material safety data sheet
MW	megawatt
NHC	National Heritage Council
NEC	Namibia Engineering Corporation
PPE	personal protective equipment
PV	photovoltaic
Sorexa/Proponent	Sorexa Sun Energy (Pty) Ltd
TB	Tuberculosis

1 INTRODUCTION

1.1 BACKGROUND

Sorex Sun Energy (Sorex or Proponent), a subsidiary of InnoSun Energy Holding Namibia (InnoSun), contracted Ondengu Construction (Ondengu) for the site preparation work, and Namibian Engineering Corporation (NEC), the main contractor, for the mechanical and electrical installation, for the Phase 1 development of a 50 megawatt (MW) photovoltaic (PV) solar plant located close to Trekkopje Mine (Figure 1). The Project is located in the Erongo Region, close to Trekkopje Uranium Mine, Phase 1 will occupy ~20 ha as shown in Figure 2, with a total proposed Project area footprint of ~150 ha for the 50 MW solar plant development (Figure 3).

Activities associated with the construction phase of the solar plant trigger the Environmental Management Act, No. 7 of 2007 and thereby specific listed activities within the Act's associated Regulations. For this reason, an environmental management plan (EMP), with numerous compliance criteria, was developed to support the issuance of the environmental clearance certificate (ECC-220030) (Appendix B). It is thus a legal requirement for all contractors involved in the Project to comply with the EMP criteria as listed in Appendix A and Appendix B. The Project is closely located in a sensitive area where lithops can be found. Lithops are a protected plant species that are very difficult to see. Due to these factors, it is the responsibility of the Proponent to ensure that construction activities are kept at a safe distance to avoid any damage (Figure 3).

Listed below are the main Project components:

- Pile foundations;
- Solar panels and support structures;
- Inverters and step-up transformers; and
- 33 kilovolt (kV) underground cable.

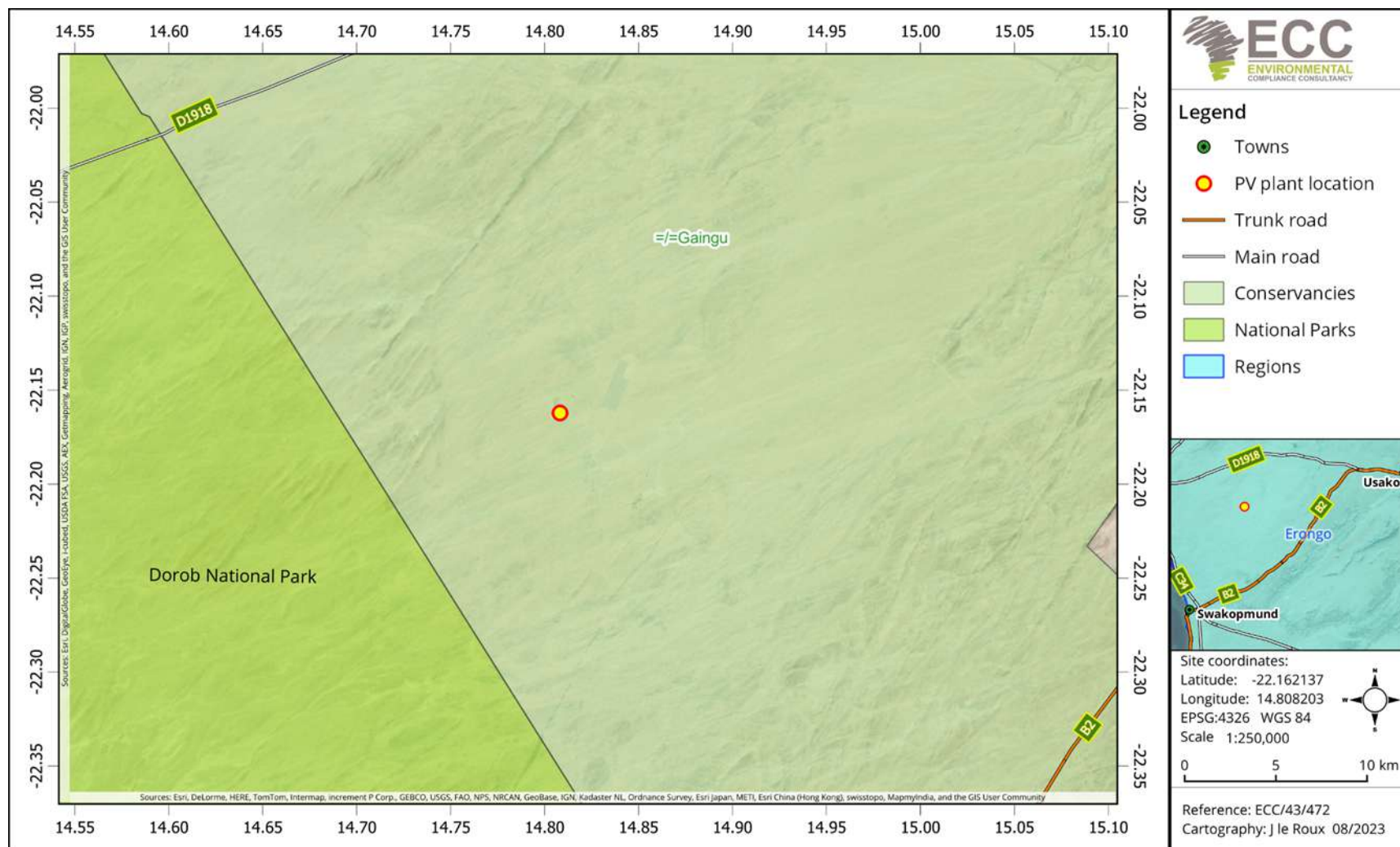


Figure 1 – Sorex Sun Energy 50 MW solar power plant to be constructed

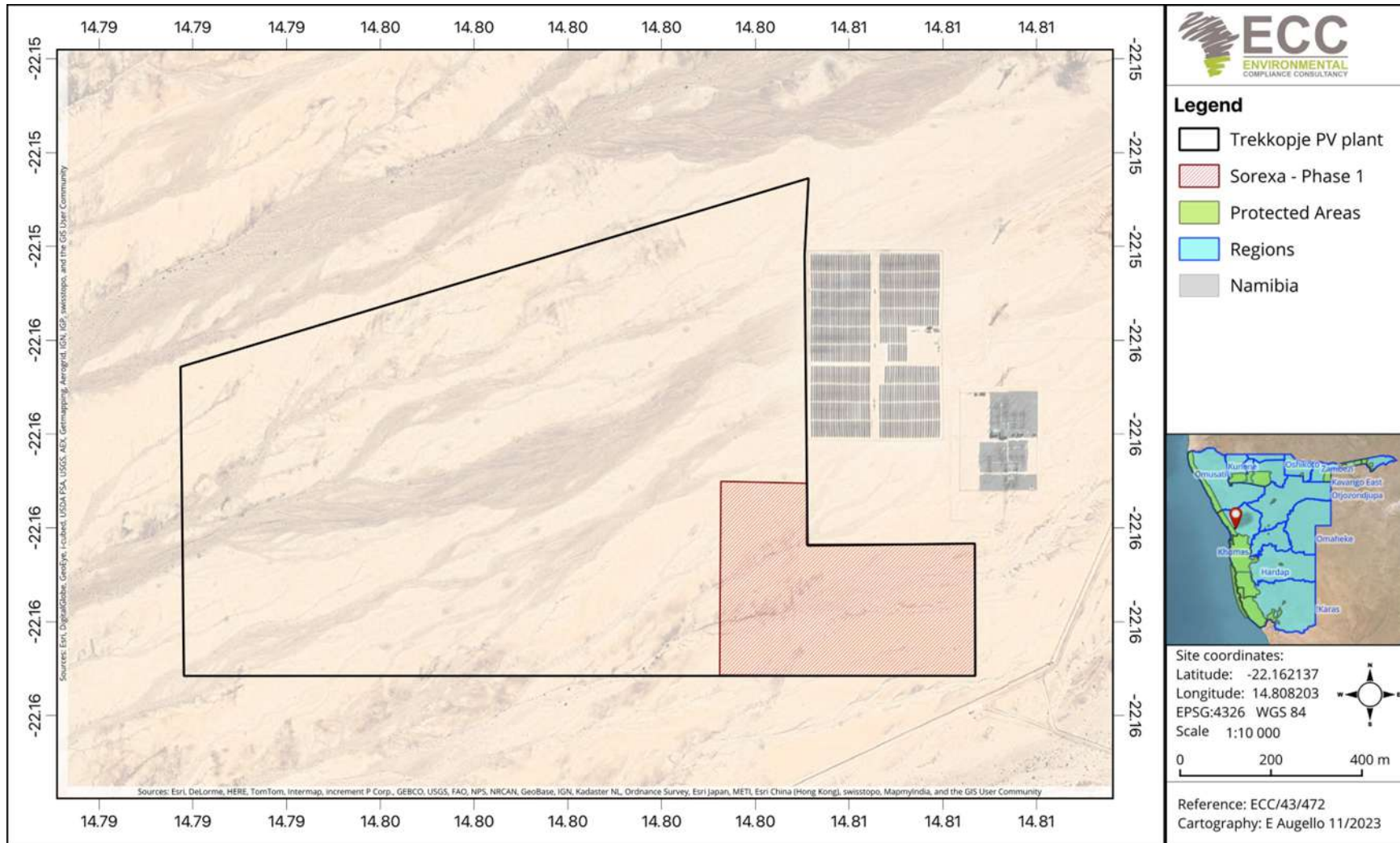


Figure 2 - Phase 1 of the Trekkopje PV plant

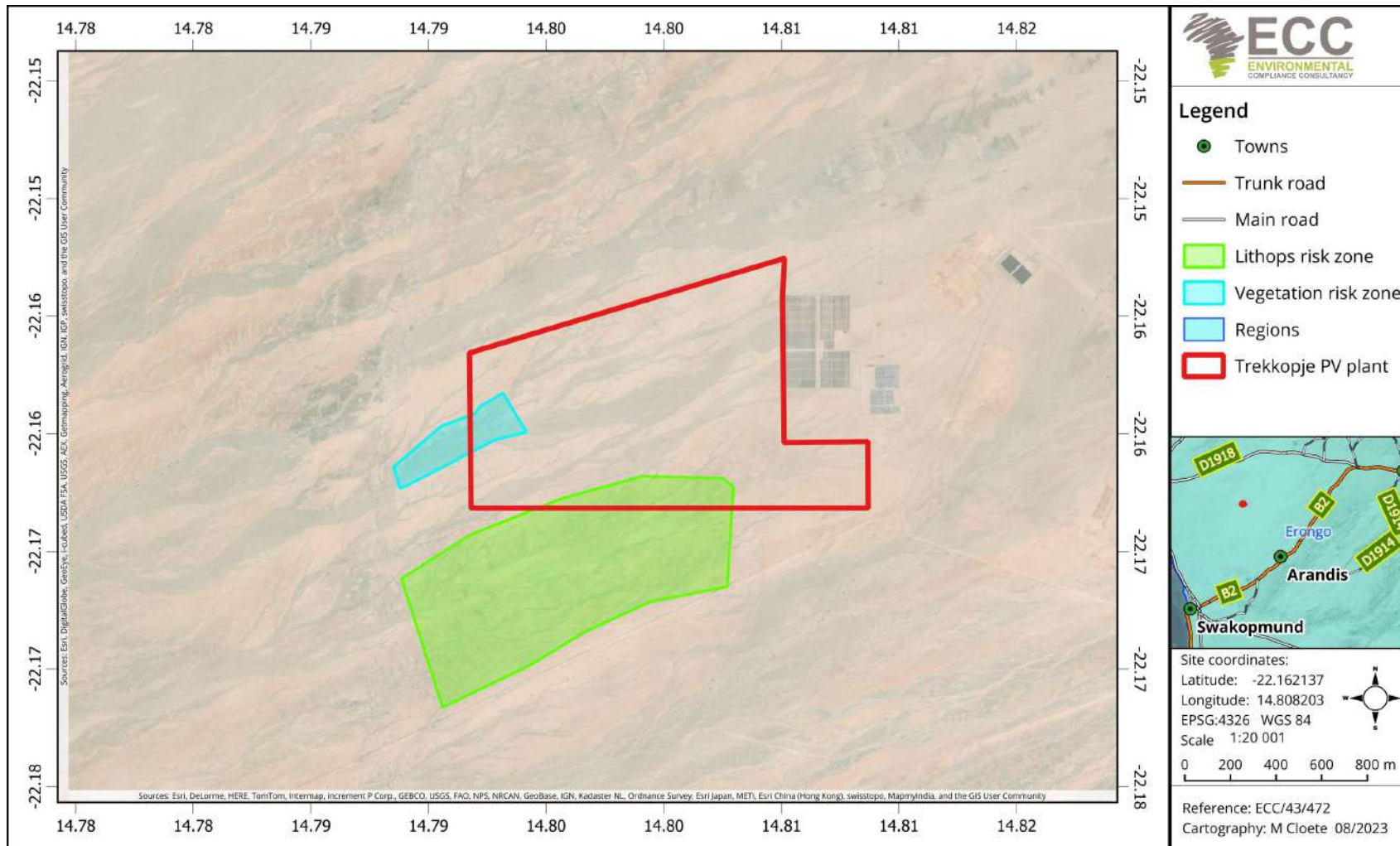


Figure 3 - Sensitive vegetation and lithops in relation to the total 150 hectare (ha) site area

1.2 PURPOSE OF THE REPORT

The purpose of this report is to provide a six (6) monthly assessment (bi-annual) of the implementation of the site environmental management plan (EMP) compliance, to report on environmental performance and/or concerns that occurred during the Project implementation and to note any changes to the environmental certificate or EMP conditions. This is in line with the approved environmental clearance certificate reporting requirements, as required by MEFT in line with the Environmental Management Act No. 7 of 2007 and associated 2012 Regulations legal requirements.

This bi-annual report summarises the findings and observations of the monthly and/or quarterly audits by Environmental Compliance Consultancy (ECC). Attached in Appendix C to Appendix F are the IAuditor reports for the reporting period (March 2024, April 2024, May 2024 and August 2024).

The compliance audit conducted from 08/03/2024 to 22/08/2024 was based on the main criteria of the EMP, which includes:

1. Legal compliance;
2. Working arrangements;
3. Communication and training;
4. Reporting, compliance and enforcement;
5. Environmental and social management; and
6. Environmental aspects and potential impacts.

1.3 ONSITE INFORMATION COLLECTION

ECC makes use of an online data collection software, IAuditor. It allows the users to build a customised site-specific template according to the Proponent's EMP. Users of the template can add notes, take and annotate photos, of the inspection, or actions to be considered. The inspection reports for the reporting period are included in Appendix C to Appendix F.

1.4 ENVIRONMENTAL COMPLIANCE CONSULTANCY

Sorex Sun Energy (Pty) Ltd has appointed a local company, Environmental Compliance Consultancy (Pty) Ltd (ECC) for the provision of environmental control officer (ECO) services for the duration of the Project.

1.5 THE PROPONENT OF THE PROPOSED PROJECT

Sorex Sun Energy (Pty) Ltd is the Proponent for the Project. The Proponent's contact information can be found Table 1.

Table 1 – Proponent's details

Company Representative:	Contact Details:
Mr Alex Delle Donne Southern Africa Manager: Projects & Development	Innosun Energy Holdings (Pty) Ltd.: PO Box 27527, Windhoek info@innosun.co.za +264 (61) 254 700

2 EMP COMPLIANCE SUMMARY

2.1 SUMMARY OF AUDIT FINDINGS AND CORRECTIVE ACTIONS FROM MARCH 2024 TO AUGUST 2024 BI-ANNUAL REPORTING PERIOD

The construction activities, findings, observations and corrective actions are listed in Table 2 as per the monthly and/or quarterly audit conducted during the reporting period. Due to a decrease in non-conformances and delays in construction activities, an executive decision by the Proponent was made to reduce monthly audits to quarterly inspections from May 2024 going forward. The full compliance audit reports can be found in Appendix C to Appendix F.

1. During the reporting period, one non-conformance was identified, a fire extinguisher past its service date.
2. An increase in dust suppression is not feasible as the fine dust becomes muddy and causes the vehicles and machinery to become stuck. Therefore, the Proponent will place gravel in the areas with high dust levels along with continued use of personal protective equipment (PPE) to ensure employee and contractor health.
3. Continued environmental training and awareness has been conducted.
4. Animal sightings has decreased with the change in seasons (wet to dry season, change to winter months).
5. To date, there is no record or evidence that the sensitive vegetation and lithops have been disturbed, that wood has been collected, or that any animals have been captured, hunted, trapped or harmed.
6. PPE is provided to all personnel members and contractors.
7. General waste is removed from the site and disposed of in Arandis daily and recyclable waste is taken to Swakopmund weekly. To prevent litter and pollution, housekeeping is also done on a daily basis.
8. The mobile toilets are cleaned twice a week to avoid spills and leaks.

Table 2 - Activity summary from March 2024 to August 2024

Site visit	Activities	Observations and non-conformances	Responses and corrective actions
08 March 2024 and 11 April 2024	- High volumes of fine dust are created by vehicles on site; and - There have been delays in construction due to material deliveries and the engineers.	- There is an increase in the amount of fine dust created on the road. - An increase in chameleons and snakes was observed. - A bunded area should be built for the diesel tank. -	- Increase dust suppression and ensure that all personnel wear dust masks. - Chameleons should be carefully removed and taken off site. - Snake are removed from the premises by trained personnel.
06 May 2024	During the reporting from May 2024 to August 2024: - The majority of trenches have been dug and closed; - Several solar panels have been installed; - Wiring has been laid and; - The engineers and electrician have set up the connections to the installed solar panels.	- Creation of fine dust on the road.	- An increase of dust suppression is not possible and therefore it's important for personnel and contractors to ensure that personal protective equipment is worn in this area at all times.
22 August 2024		- Creation of fine dust on the road. - One out of service fire extinguisher was found on site.	- An increase in dust suppression to control the dust generated, therefore gravel will be placed in these areas. - All fire extinguishers should be serviced according to the dates provided on the service stickers.

3 ENVIRONMENTAL COMPLIANCE AUDIT

This section (Table 3) provides an overview of the EMP requirements as prescribed in the approved EMP for the solar power plant. No non-compliances were reported for the period under review.

Table 3 - EMP compliance audit

Aspect	Management requirements	Compliance	Comments
Planning and design phase			
Cleaning of PV tables	- Investigations regarding water conserving designs should be carried out and consider as a minimum the following alternative/supplementary cleaning methods: - Options for using recycled water; - Use of industrial leaf blowers; - Use of self-cleaning methods; - Use of electrostatic charge to repel dust and force it to the edges of the panels; - Use of vibrations to shake dust off of panels. - The tarring of service roads should be considered as an additional dust suppression method. - Vegetation on site is very sparse. Annual grasses should be kept intact as this will assist in lowering dust on site.	Not applicable	Not all PV tables have been installed.

Aspect	Management requirements	Compliance	Comments
Borrow pit investigation	- Borrow pit investigations need to include environmental considerations and requirements: - o As first option investigate/explore the use of local building sand suppliers to supply the project's building sand requirements. - o Ensure that all borrow pits utilised, commercial or private, have environmental clearance and Environmental Management Plans in place, which are being implemented. - o Avoid sensitive areas (e.g. areas with high biodiversity, protected archaeological sites, rivers or drainage lines).	Not applicable	- Borrow pits have not been created.
Erosion and preservation of gypsum crust	- Consideration should be given to the erosion control design. The existing drainage lines should be kept intact as far as possible, using natural methods for embankments, water flow diversion such as gabions, only where necessary. The design needs to consider the following: - o The operations of the construction team needs to be organised in such a way that the sensitive gypsum crust in the area is avoided and that the area of impact is limited as far as possible. - o No mechanical equipment will be allowed to remove vegetation on site. All vegetation clearance works will be done manually.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
Construction tender preparation phase management requirements			
EMP Implementation	Sorex Energy needs to appoint an employer's representative (ER) to act as the Employer's on-site implementing agent. This person will be responsible to ensure that OPE's responsibilities are executed in compliance with relevant legislation and this EMP.	- Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Workforce accommodation	Consideration should be given to the accommodation of the workforce, which will not in Arandis (prohibited on site). It is preferred that workers from Arandis be appointed who are already residing there. For those not from Arandis, consultation is to take place with the Arandis Town Council, to find suitable accommodation or to create a temporary site with suitable infrastructure for this purpose.	- Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Vegetation study	Employ a vegetation specialist to identify any potential plants of conservation concern in the areas indicated on the map below (Figure 2). The green zone could be used on condition that a vegetation specialist investigates the occurrence of <i>Lithops</i> species and provides recommendations of how they should be preserved/removed prior to construction. The Blue area is to remain free of development, since it is also an important drainage line.	- Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
EMP implementation	Relevant sections of this EMP should be included in the tender documents for all development so that tenderers can make provision for implementation of the EMP.	Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Financial provision	- Financial provision for the compilation of a waste management plan should be included as a cost item within tenders concerning the operation and maintenance of services infrastructure. - Financial provision for topsoil management and the rehabilitation of borrow pits should be included as a cost item within construction tender documents. - Financial provision for the co-opting of a health officer from the Ministry of Health and Social Services to facilitate human immunodeficiency virus, acquired immunodeficiency (HIV/AIDS) and tuberculosis (TB) education programmes periodically on-site during the construction phase should be included as a cost item within construction tender documents. - Financial provision for the facilitation of an induction programme for both senior, casual construction personnel as well as subcontractors and associated personnel should be included as a cost item within	Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	tenders concerning the construction and/or maintenance of services infrastructure. - Financial provision for the implementation of a labour intensive project should be made in the tender documents. - Financial provision for the accommodation of the workforce in Arandis, for those not accommodated there, and for the provision of meals and cooking facilities (no wood is to be removed from site) on site. - Financial provision for the drafting of a communication plan should be included as a cost item within construction tender documents.		
Recruitment	- Provisions designed to maximise the use of local labour should be included within tenders concerning the construction and/or maintenance of services infrastructure. - A provision stating that all unskilled labour should be sourced from local communities should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Specific recruitment procedures ensuring local firms receive preference during tender adjudication should be included within tenders	Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	concerning the construction and/or maintenance of services infrastructure. - Provisions promoting gender equality pertaining to recruitment should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Women should be given preference for jobs, which are less toil-intensive.		
Waste management			
Waste management plan	- The contractor should compile a waste management plan which should address as a minimum the mitigation measures included below. - “Waste” is defined as any matter, whether gaseous, liquid or solid or any combination thereof, which is an undesirable or superfluous by-product, emission, residue or remainder of any process or activity.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Hazardous waste	- All heavy construction vehicles and equipment on site should be provided with a drip tray. - o Drip trays are to be transported with vehicles wherever they go. - o Drip trays should be cleaned daily and spillage handled, stored and disposed of as hazardous waste. - All heavy construction vehicles should be maintained regularly to prevent oil leakages.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	- Maintenance and washing of construction vehicles should be take place only at a designated workshop area. - o The workshop area should be lined with concrete. - o The workshop should be contoured so that run-off from the servicing and washing of vehicles and equipment drains into an oil-water separator, silt trap or lined pit (which should also be installed). - Spilled concrete (wet or dry) should be treated as hazardous waste and disposed of by the end of each day in the appropriate hazardous waste containers. - All hazardous substances (e.g. fuel etc.) or chemicals should be stored temporarily in labelled, safe and sealable containers at a specific location on an impermeable surface, which is bunded. The bunded area should be able to contain 1.5 times the volume of the hazardous material to be stored in the bunded area. - Battery systems should be sealed and not opened or serviced on site.		
Sewage and grey water	- Do not allow sewage (back water) to be discharged directly onto open soil along drainage lines or any unspecified area.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	- All sewage must be removed regularly and disposed of at a recognised (municipal) sewage treatment facility. - The water collected from equipment cleaning areas (grey water), should not be left standing for long periods of time as this promotes parasite and bacterial proliferation. Grey water should, if practicable, be recycled: - o Used for dust suppression; and - o Used to clean equipment. - If grey water will not be recycled it should be removed along with the black water on a regular basis.		
General waste	- The construction site should be kept tidy at all times. All domestic and general construction waste produced on a daily basis should be cleaned and contained daily. - No waste may be burned. - Waste containers (bins) should be emptied regularly and removed from site to a recognised (municipality) waste disposal site. All recyclable waste needs to be taken to the nearest recycling depot. - A sufficient number of separate waste containers for hazardous and domestic/general waste must be provided on site. These should be clearly marked as such.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	- Construction labourers should be sensitised to dispose of waste in a responsible manner and not to litter. - No waste may remain on site after the completion of the Project.		
Borrow pits			
Topsoil	- The contractor should adhere to prescribed measures emanating from the borrow-pit investigation and the design for excavations and disposal of spoil material.	Not applicable	Borrow pits have not been created.
Rehabilitation	- Upon completion of the construction phase consultations should be held with the local community regarding the post-construction use of the borrow pit(s). - In the event that no post-construction uses are requested, all borrow pits need to be rehabilitated as follows: - o Borrow pits may only be backfilled with clean or inert fill. No material of hazardous nature (e.g. sand removed with an oil spill) may be dumped as backfill. - o Rehabilitated borrow pits need to match the contours of the existing landscape. - o Take note of drainage channels in the vicinity of the borrow pit. The	Not applicable at this time.	Rehabilitation has not commenced as the construction is ongoing. Borrow pits have not been created and are not in the planning.

Aspect	Management requirements	Compliance	Comments
	rehabilitated area should not be higher (or lower) than a drainage channel. This ensures the efficiency of revegetation and reduces the chances of potential erosion. ○ Topsoil is to be spread across borrow pit areas evenly. ○ Deep ripping is required, not just simple scarification, so as to enable rip lines to hold water after heavy rainfall. ○ Ripping should be done along contour lines, not up and down a slope, which could lead to enhanced erosion. ○ Rehabilitated borrow pits need to remain fenced-off after they have been decommissioned to prevent livestock from removing the newly established vegetation on the area.		
Health and safety			
HIV/AIDS and TB training	– The contractor should approach the Ministry of Health and Social Services to co-opt a health officer to facilitate HIV/AIDS and TB education programmes periodically on site during the construction phase.	– Partial compliance	– A meeting was arranged however the Ministry of Health and Social Services has not conducted a site visit yet.

Aspect	Management requirements	Compliance	Comments
Road safety	- Demarcate roads clearly. - Provide warning signage where appropriate. - Off-road driving should not be allowed. - All vehicles that transport materials to and from the site must be road-worthy. - Drivers that transport materials should have a valid driver's license and should adhere to all traffic rules. - Loads upon vehicles should be properly secured to avoid items falling off the vehicle.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Safety around excavated and work areas	- Excavations should be left open for an absolute minimum time. - Excavate short lengths of trenches and box areas for services or foundations in such a way that the trench will not be left unattended for more than 24 hours. - Demarcate the following areas with danger tape: - o All excavation works; - o Soil and other building material stockpiles; and - o Temporary waste stockpiles - Provide additional warning signage in areas of movement and in "no personnel" areas where workers are not active. - Borrow pits are to be fenced off with steel wire fencing.	- Non-Compliant	- One of the fire extinguishers were not serviced inside the inspection period according to the service tag. Fire extinguishers must be serviced within the time period stipulated on the service tag.

Aspect	Management requirements	Compliance	Comments
	- Work areas must be set out and isolated with danger tape on a daily basis with additional warning signage where appropriate. - All building materials and equipment are to be stored only within set-out and demarcated work areas. - Only construction personnel will be allowed within these work areas. - Two (2) fire extinguishers should be available at the fuel storage area - Comply with all mitigation measures laid out in waste management mitigation measures.		
Toilets	- Separate toilets should be available for men and women and should clearly be indicated as such. - Portable toilets (i.e. easily transportable) should be available at every construction site: - o 1 toilet for every 25 females. - o 1 for every 50 males. - Toilets should be no further than 250 m from any worker; - Sewage waste needs to be removed on a regular basis to an official (municipal) sewage disposal site. Alternatively, pump sewage into sealable containers and store it until it can be removed; - It is important that the adequacy of the number of toilets on sites be monitored. Construction workers should not be allowed to roam off site to	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	relieve themselves. Should this start to happen, corrective measures are needed, including training and communication to test the adequacy of the number of and distance to toilets. Rectify as necessary; Workers responsible for cleaning the toilets should be provided with latex gloves and masks.		
Open fires	No open fires may be made anywhere on site.	Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
General	- All workers should have appropriate PPE and records of the distribution of PPE should be kept/maintained; - Dust protection masks should be provided to workers if they complain about dust; - Potable water should be provided to workers; - No person should be allowed to smoke close to fuel storage facilities or portable toilet (if toilets are chemical toilets); - No workers should be allowed to drink alcohol during work hours; and - No workers should be allowed on site under the influence of alcohol.	Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Dust and noise			

Aspect	Management requirements	Compliance	Comments
Dust	- A watering truck should be used on gravel roads with the most heavy vehicle movement especially during dry and windy conditions. However, due consideration should be given to water restriction during times of drought; - Ensure that adequate ventilation is available in the event of sanding or grinding work; - Stockpiles of building materials and earth materials to be kept moist or the surfaces stabilised; - Limit the size of stockpiles of large quantities of soil, topsoil and other fine material; and - Improve awareness of ambient air quality and consideration regarding wind speed and direction when undertaking dust generating activities	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Noise	- Work hours should be restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles is less than 500 m from residential area; and - In the event that work is necessary outside the designated working hours, all receptors (residents or businesses within 500 m from the work areas) will need to be notified at least 2 days in advance.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Environmental training and awareness			

Aspect	Management requirements	Compliance	Comments
Environmental induction	- All construction workers are to undergo environmental induction which should include as a minimum the following: - o Explanation of the importance of complying with the EMP; - o Discussion of the potential environmental impacts of construction activities; - o Employees' roles and responsibilities, including emergency preparedness; - o Explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities; and - o Explanation of the specific mitigation measures within this EMP especially unfamiliar provisions.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Environmental conservation			
Conservation of vegetation	- No driving beyond demarcated areas and off established roads; - No movement of staff or visitors beyond the project site; - The collection of plants or wood for cooking beyond the Project site should be strictly prohibited.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
Conservation of water	- Water effective equipment should be used. - All leaking fittings need to be repaired or replaced timeously; - Brooms should be used to clean floors rather than hosing them down with a pipe; - Use buckets or high-pressure hoses to clean areas, equipment or vehicles instead of a regular hose pipe.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Materials camp and lay-down areas	- Suitable locations for the materials camp and lay-down areas should be identified with the assistance of the ER and the following should be considered in selecting these sites: - o Avoid sensitive areas; - o The areas designated for the proposed services infrastructure should be used as far possible; and - o Second choice should be degraded land.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Conservation of vegetation	- No construction or movement should take place beyond the site boundaries or in the demarcated area unless by a specialist.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Birds	- Consult an avifauna specialist for practical advise how to protect birds from collision and electrocution on the transmission line before construction.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
Conservation of water	The provisions contained in the water management plan should be implemented.	Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Employment/recruitment			
Legislation	Adhere to the legal provisions in the Labour Act for the recruitment of labour (target percentage for gender balance, optimal use of local labour and SME's etc) in the contract.	Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Recruitment	- The contractor should compile a document to be used as a guide for the recruitment process, which should include the following provisions as a minimum: - The local authority (town council, local headman etc.) should assist with the recruitment process. - Recruitment should not take place at construction sites; - Ensure that all sub-contractors are aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process; - Contractors should give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns;	Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	Clearly explain to all job-seekers the terms and conditions of their respective employment contract (e.g. period of employment etc.) – make use of interpreters when necessary.		
Stakeholder communication			
Communication plan	- The contractor should draft a communication plan, which should outline as a minimum the following: - How stakeholders, who require ongoing communication for the duration of the construction period, will be identified and recorded and who will manage and update these records; - How these stakeholders will be consulted on an ongoing basis; and - Make provision for the grievance mechanisms-i.e. how concerns can/will be lodged/recorded and how feedback will be delivered as well as further steps of arbitration in the event feedback is deemed unsatisfactory.	Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
General communication matters	The ER should appoint an ECO to liaise between the contractor, stakeholders, developer, and consultants. The appointed contractor shall appoint a person from the construction team to	Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	take responsibility for the implementation for all provisions of this EMP. ○ The contractor shall at every site meeting report on the status of the implementation of all provisions of the EMP. ○ the contractor should implement the environmental awareness training. ○ The contractor must list the stakeholders of the project and their contact details with whom ongoing communication would be required for duration of the contract. This list, together with the communication plan must be agreed upon and given to the ER before construction commences. ○ The communication plan, once agreed upon by the developer, shall be binding. ○ All communication with the stakeholders must take place through the ECO. ○ A copy of the EMP must be available at the site office and should be accessible to all stakeholders ○ Key representatives from the above mentioned list need to be invited to attend monthly site meetings to raise any concerns and issues regarding project progress. ○ The contractor should liaise with the Developer regarding all issues related to		

Aspect	Management requirements	Compliance	Comments
	community consultation and negotiation before construction commences. ○ A procedure should be put in place to ensure that concerns raised have been followed-up and addressed. ○ All people on the stakeholders list should be informed about the availability of the complaints register in writing by the ER prior to the commencement of construction activities.		
Communication with property owners	- At the outset of the construction programme, all residents along the route will have to be informed about construction activities within the reserve in front of their property. This should be done in cooperation with the applicable constituency councillors.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Socio-economic and miscellaneous			
Archaeology and heritage resources	- Should a heritage site or archaeological site be uncovered or discovered during the construction phase of the Project, a “chance find” procedure should be applied in the order they appear below: ○ If operating machinery or equipment stop work; ○ Demarcate the site with danger tape; ○ Determine GPS (global positioning system) position if possible;	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	○ Report findings to foreman. - Action taken by foreman: ○ Report findings, site location and actions taken to superintendent; ○ Cease any works in immediate vicinity; - Action taken by superintendent: ○ Visit site and determine whether work can proceed without damage to findings; ○ Determine and demarcate exclusion boundary; ○ Site location and details to be added to the project's geographic information system (GIS) for field confirmation by archaeologist; - Action taken by archaeologist: ○ Inspect site and confirm addition to project GIS: ○ Advise the National Heritage Council (NHC) and request written permission to remove findings from work area; and ○ Recovery, packaging and labelling of findings for transfer to National Museum. - Should human remains be found, the following actions will be required:		

Aspect	Management requirements	Compliance	Comments
	○ Apply the chance find procedure as described above; ○ Scheduled a field inspection with an archaeologist to confirm that remains are human; ○ Advise and liaise with the NHC and Police; and ○ Remains will be recovered and removed either to the National Museum or the National Forensic Laboratory as directed.		
Decommissioning			
Dismantling of project components and associated waste	- All material produced from the dismantling of project components (which will not be sold) should be sorted into recyclable and non-recyclable mater	- Not applicable	- Decommissioning has not started as the project is ongoing.

3.1 REHABILITATION

The Project falls within the =/Gaingu Conservancy and is in close proximity to the Dorob National Park (Figure 1). Therefore, rehabilitation should be conducted concurrently during the construction phase to prevent extra costs and to reduce the negative effect on the environment. Moreover, sensitive areas must be avoided (Figure 3).

4 CONCLUSION

Construction activities are ongoing however, as is the nature of construction, not all components of the Project (and therefore the EMP) are relevant for the evaluated period. EMP compliance is thus based on activities underway at the time of the site visits for the bi-annual reporting period (March 2024 to August 2024).

Overall, the majority of activities were found to be compliant with the EMP criteria and the site is properly maintained. The only non-conformance identified during the reporting period was one fire extinguisher that passed its due date in June 2024.

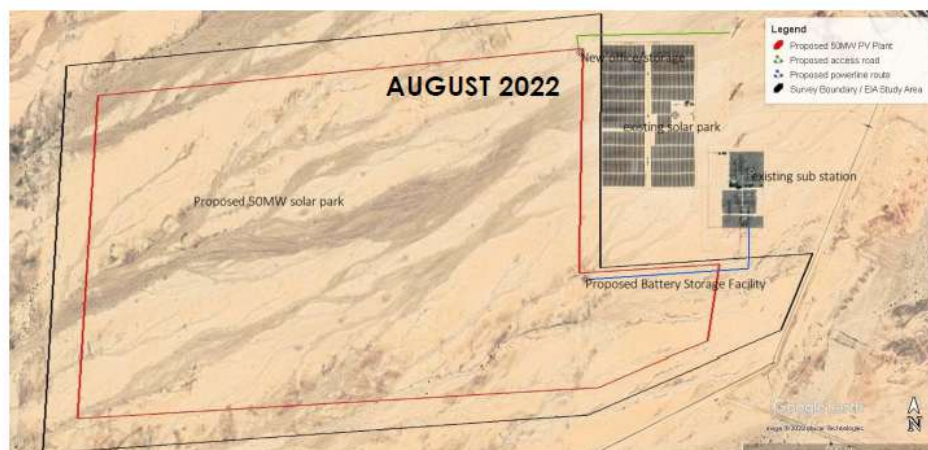
The next bi-annual report will focus on the activities recorded between September 2024 and March 2025.

APPENDIX A – ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX A

PROPOSED 50MW SOLAR PHOTOVOLTAIC PLANT ON A 150HA SITE NORTH WEST OF ARANDIS, ERONGO REGION

ENVIRONMENTAL MANAGEMENT PLAN



APPENDIX B – ENVIRONMENTAL CLEARANCE CERTIFICATE

ECC – 2200030 Serial:221yXV830



REPUBLIC OF NAMIBIA
MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM
OFFICE OF THE ENVIRONMENTAL COMMISSIONER

ENVIRONMENTAL CLEARANCE CERTIFICATE
ISSUED

In accordance with Section 37(2) of the Environmental
Management Act (Act No. 7 of 2007)

TO
Sorex Sun Energy (PTY) LTD
P O Box 27527, Windhoek

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY
Proposed 50MW Photovoltaic Solar Power Plan with power line near
Trekopje, Erongo region

Issued on the date: 2022-12-12
Expires on this date: 2025-12-12

(See conditions printed over leaf)

This certificate is printed without erasures or alterations



28 MAR 2023
ENVIRONMENTAL COMMISSIONER



Reduce
Reuse
Recycle

NAMIBIA
TRASH
BIN

ECC –

CONDITIONS OF APPROVAL

1. This environmental clearance is valid for a period of 3 (three) years, from the date of issue unless withdrawn by this office
2. This certificate does not in any way hold the Ministry of Environment, Forestry and Tourism accountable for misleading information, nor any adverse effects that may arise from these activities. Instead, full accountability rests with the proponent and its consultants
3. This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project

APPENDIX C – IAUDITOR REPORT MARCH 2024

PV Plant - EMP Compliance

8 Mar 2024 / Diaan Hoffman

Incomplete

Actions	0
	Sorexasun Energy
Conducted on	8 Mar 2024 4:46 PM CAT
Prepared by	Diaan Hoffman
Location	Sorexasun PV Plant

6.2.3: ENVIRONMENTAL CONTROL OFFICER (ECO)

Are adequate environmental awareness training for senior site personnel conducted?

Yes



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5

Is there compliance with the relevant national legislation and the EMP?

Yes

Are appropriate actions taken if the specifications of the EMP are not adhered to?

Yes

Is there advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER?

Yes

Are continuous reviews of the EMP and recommended additions and/or changes made to the document?

Yes

WASTE MANAGEMENT

Waste Management Plan

Has a waste management plan been created?

Yes

Hazardous Waste

Are all heavy construction vehicles and equipment on site in possession of a drip tray?

Yes



Photo 6



Photo 7



Photo 8



Photo 9

Are drip trays cleaned daily and spillage handled, stored and disposed of as hazardous waste?

Yes

Is all spilled concrete (wet or dry), treated as hazardous waste and disposed of by the end of each day, in the appropriate hazardous waste containers?

Yes

Are all hazardous substances like fuel or chemicals stored in containers which are stored on an impermeable surface that is bunded?

N/A

Fuel is transported from Arandis to site daily. They are in the process of setting up a Diesel tank on-site.

Are battery systems sealed and not opened or serviced on site?

Yes



Photo 10



Photo 11

Does the maintenance and washing of construction vehicles take place only at a designated workshop area?

N/A

No maintenance or washing takes place on-site.

Is the workshop area lined with concrete?

N/A

There is no workshop, only a storage area.



Photo 12



Photo 13

Sewage and Grey Water

Is there evidence of sewage (black water) discharged directly onto open soil along drainage lines, or any other unspecified areas?

No

Is sewage removed from site on regularly and disposed of at a recognised (municipal) sewage treatment facility?

Yes

Elite services in Swakopmund clean the mobile toilets twice a week, Tuesdays and Thursdays.



Photo 14

Is water collected from equipment cleaning areas (grey water), left standing for long periods of time (promoting parasite and bacterial proliferation)?

No

If practicable, is grey used for dust suppression or to clean equipment?

Yes

General Waste

Is the construction site kept tidy at all times?

Yes



Photo 15



Photo 16



Photo 17



Photo 18

Are all domestic and general construction waste produced on a daily basis cleaned and contained daily?

Yes

General waste is taken to Arandis daily.

Is waste buried or burned on site?

No

Are waste containers emptied regularly and removed from site to a recognised (municipal) waste disposal site?

Yes

Is recyclable waste taken to the nearest recycling depot?

Yes

General waste is taken to Arandis on a daily basis and the recyclable waste taken to Swakopmund weekly.



Photo 19



Photo 20

Is there a sufficient number of separate waste containers for hazardous and domestic/general waste provided on site and clearly marked as such?

N/A

Are construction labourers sensitised to dispose of waste in a responsible manner and to not litter?

Yes

Housekeeping is done everyday.

HEALTH AND SAFETY

HIV/AIDS and TB Training

Does the contractor approach the Ministry of Health and Social Services to co-opt a health officer, to facilitate HIV/AIDS and TB education programs periodically on site during the construction phase?

N/A

NEC employees are covered by NAMED.
Ministry will become involved in 2024.

Road Safety

Are all vehicles that transport materials to and from the site, road-worthy?

Yes



Photo 21



Photo 22



Photo 23

Do all drivers that transport materials have a valid driver's license and adhere to all traffic rules?

Yes

List of drivers, incident register

NEC head contractor transports material to site.

Are loads upon vehicles properly secured to avoid items falling off the vehicle?

Yes

Material arrived on site in containers.

Safety Around Excavated and Work Areas

Are short lengths of trenches and box areas for services or foundations excavated so as to not allow trenches to be left unattended for more than 24 hours?

N/A

The creation of trenches have not commenced.

Are all excavation works demarcated with danger tape?

N/A

Are soil and other building material stockpiles demarcated with danger tape?

Yes

Orange safety cones are used due to windy conditions



Photo 24



Photo 25



Photo 26

Are temporary waste stockpiles demarcated with danger tape?

N/A

Are only construction personnel allowed within these work areas?

N/A

Are 2 fire extinguishers available at the fuel storage area and are they charged?

Yes



Photo 27



Photo 28



Photo 29

Toilets

Are there separate toilets for males and females?

Yes

5 portable and two built



Photo 30



Photo 31

Is there 1 toilet for every 25 females?

Yes

Currently, there is one female employee with her toilet.

Is there 1 toilet for every 50 males?

Yes

There are 17 employees and 4 toilets on site.



Photo 32

Are the toilets no further than 250m from the workers?

Yes



Photo 33

Is the adequacy of the number of toilets on sites closely monitored?

Yes

General

Are there any trees or natural vegetation removed on-site to create open fires?

No

Do all employees have the needed PPE (hard hat, gloves, overalls, safety shoes and protective glasses)?

Yes

PPE register



Photo 34



Photo 35



Photo 36

Is potable water provided to employees on site?

Yes

80 litres



Photo 37

Is there evidence that persons smoke close to fuel storage facilities or portable chemical toilets?

No



Photo 38



Photo 39

Do workers drink alcohol during work hours?

No

Is unauthorized public access controlled?

Yes



Photo 40



Photo 41



Photo 42



Photo 43

DUST AND NOISE

Dust

Is a watering truck used on gravel roads with the most heavy vehicle movement, especially during dry and windy conditions?

Yes

Once a week to once every second week.

Is there adequate ventilation available in the event of sanding or grinding work?

Yes

Outside



Photo 44



Photo 45

Are stockpiles of building materials and earth material kept moist or the surfaces stabilised?

N/A

Not advisable due to cement mixing requirements.

Are the size of stockpiles of large quantities of soil, topsoil and other fine material limited?

Yes



Photo 46

Are awareness of ambient air quality and consideration regarding wind speed and direction taught for the undertaking of dust generating activities?

Yes

Noise

Are work hours restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles are less than 500m from residential areas?

Yes



Photo 47

Are all receptors (residents or businesses within 500m from the work areas) notified at least 2 days in advance in the event that work is necessary outside the designated working hours?

N/A

There are no neighbours. Regular communication with Trekkopje Mine.

Do vehicles have regular engine maintenance programs, to control vehicle emissions?

Yes

ENVIRONMENTAL TRAINING AND AWARENESS, ENVIRONMENTAL CONSERVATION

Environmental Induction (Training)

Is the importance of complying with the EMP explained to workers?

Yes

Registers



Photo 48

Training material containing EMP details.



Photo 49



Photo 50

Is the potential environmental impacts of construction activities discussed?

Yes

Training material containing potential environmental impacts.



Photo 51

Are employees trained on their roles and responsibilities,

Yes

including emergency preparedness?	
Is there an explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities?	Yes
Is there an explanation of the specific mitigation measures within this EMP, especially unfamiliar provisions?	Yes
Conservation of Vegetation	
Is there evidence of driving beyond demarcated areas and off established roads taking place?	No
Is there evidence of movement of staff or visitors beyond the project site?	No
Is the collection of plants or wood for cooking beyond the project site strictly prohibited?	Yes
Conservation of Water	
Is water effective equipment used?	N/A
Are all leaking fittings repaired or replaced timeously?	N/A
Are brooms used to clean floors rather than hosing them down with a pipe?	Yes
 Photo 52	
Are buckets or high pressure hoses used to clean areas, equipment, or vehicles instead of a regular hose pipe?	N/A
Cleaning of equipment does not take place on site.	
Are the provisions contained in the Water Management Plan implemented?	N/A
Materials Camp and Lay-down Areas	
Are the materials camp and lay-down areas a safe distance	Yes

from sensitive areas?

More than 200m from sensitive areas.



Photo 53

Are the areas designated for the proposed services infrastructure used as lay-down areas as far as possible?

N/A

Conservation of Vegetation, birds and bats

Is construction or movement limited to the site boundaries and demarcated areas, unless approved by a specialist?

Yes

Is there appropriate stormwater management in place?

Yes

Natural drainage being used

Are animals injured, fed, trapped, hunted or harmed in any way?

N/A

EMPLOYMENT/RECRUITMENT,

Legislation and Recruitment

Does the contractor adhere to the legal provisions in the Labour Act (see Table 1 in EMP) for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.) in the contract?

Yes

NIMT and Spitzkoppe conservancy are used for recruitment.

Has a recruitment process been developed?

Yes

Does the process include local authority (town council, local headman etc.) assistance with the recruitment process?

Yes

Are all sub-contractors aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process?

Yes

Does recruitment take place at construction sites?

No

Do contractors give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns?

Yes

Are the terms and conditions of their respective employment contracts (e.g., period of employment etc.) clearly explained to all jobseekers?

Yes

Are interpreters used when necessary?

N/A

STAKEHOLDER COMMUNICATION

Communication Plan

Has the contractor developed a Communication Plan?

N/A

General Communication Matters and Communication with Property Owners

Has the ER appointed an ECO to liaise between the Contractor, stakeholders, Developer, and consultants?

Yes

Has the appointed Contractor appointed a person from the construction team to take responsibility for the implementation of all provisions of this EMP?

Yes

Does the Contractor report on the status of the implementation of all provisions of the EMP during every site meeting?

Yes

Does all communication with the stakeholders take place through the ECO?

N/A

Is a copy of the EMP available at the site office and accessible to all stakeholders?

Yes



Photo 54

SOCIO-ECONOMIC AND MISCELLANEOUS

Archaeology and Heritage Resources

Has a chance find procedure been developed according to the requirements set out in the EMP?

Yes

Have there been any chance finds?

N/A

APPENDIX D - IAUDITOR REPORT APRIL 2024

PV Plant - EMP Compliance

11 Apr 2024 / Diaan Hoffman

Incomplete

Score	66 / 68 (97.06%)	Actions	0
Sorexasun Energy			
Conducted on	11 Apr 2024 7:08 AM CAT		
Prepared by	Diaan Hoffman		
Location	Sorexasun PV Plant		

Are adequate environmental awareness training for senior site personnel conducted?

Yes



Photo 1



Photo 2

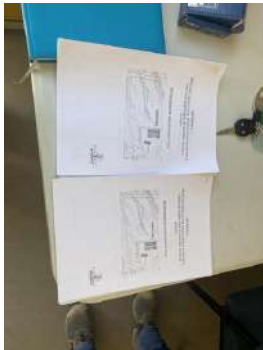


Photo 3



Photo 4



Photo 5

Is there compliance with the relevant national legislation and the EMP?

Yes

Are appropriate actions taken if the specifications of the EMP are not adhered to?

Yes

Is there advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER?

Yes

Are continuous reviews of the EMP and recommended additions and/or changes made to the document?

Yes

WASTE MANAGEMENT		15 / 15 (100%)
Waste Management Plan		1 / 1 (100%)
Has a waste management plan been created?		Yes
Hazardous Waste		4 / 4 (100%)
Are all heavy construction vehicles and equipment on site in possession of a drip tray?		Yes
    		
Are drip trays cleaned daily and spillage handled, stored and disposed of as hazardous waste?		Yes
Is all spilled concrete (wet or dry), treated as hazardous waste and disposed of by the end of each day, in the appropriate hazardous waste containers?		Yes
Are all hazardous substances like fuel or chemicals stored in containers which are stored on an impermeable surface that is bunded?		N/A
Fuel is transported from Arandis to site daily.		
Are battery systems sealed and not opened or serviced on site?		Yes



Photo 11



Photo 12

Does the maintenance and washing of construction vehicles take place only at a designated workshop area?

N/A

No maintenance or washing takes place on-site.

Is the workshop area lined with concrete?

N/A

There is no workshop, only a storage area.



Photo 13



Photo 14

Sewage and Grey Water

4 / 4 (100%)

Is there evidence of sewage (black water) discharged directly onto open soil along drainage lines, or any other unspecified areas?

No

Is sewage removed from site on regularly and disposed of at a recognised (municipal) sewage treatment facility?

Yes

Elite services in Swakopmund clean the mobile toilets twice a week, Tuesdays and Thursdays.



Photo 15

Is water collected from equipment cleaning areas (grey water), left standing for long periods of time (promoting parasite and bacterial proliferation)?

No

If practicable, is grey used for dust suppression or to clean equipment?

Yes

General Waste

6 / 6 (100%)

Is the construction site kept tidy at all times?

Yes



Photo 16



Photo 17



Photo 18



Photo 19

Are all domestic and general construction waste produced on a daily basis cleaned and contained daily?

Yes

General waste is taken to Arandis daily.

Is waste buried or burned on site?

No

Are waste containers emptied regularly and removed from site to a recognised (municipal) waste disposal site?

Yes

Is recyclable waste taken to the nearest recycling depot?

Yes

General waste is taken to Arandis on a daily basis and the recyclable waste taken to Swakopmund weekly.



Photo 20



Photo 21

Is there a sufficient number of separate waste containers for hazardous and domestic/general waste provided on site and clearly marked as such?

N/A

Are construction labourers sensitised to dispose of waste in a responsible manner and to not litter?

Yes

Housekeeping is done everyday.

HEALTH AND SAFETY

16 / 16 (100%)

HIV/AIDS and TB Training

Does the contractor approach the Ministry of Health and Social Services to co-opt a health officer, to facilitate HIV/AIDS and TB education programs periodically on site during the construction phase?

N/A

NEC employees are covered by NAMED.
Ministry will become involved in 2024.

Road Safety

3 / 3 (100%)

Are all vehicles that transport materials to and from the site, road-worthy?

Yes



Photo 22



Photo 23



Photo 24

Do all drivers that transport materials have a valid driver's license and adhere to all traffic rules?

Yes

List of drivers, incident register

NEC head contractor transports material to site.

Are loads upon vehicles properly secured to avoid items falling off the vehicle?

Yes

Material arrived on site in containers.

Safety Around Excavated and Work Areas

2 / 2 (100%)

Are short lengths of trenches and box areas for services or foundations excavated so as to not allow trenches to be left unattended for more than 24 hours?

N/A

The creation of trenches have not commenced.

Are all excavation works demarcated with danger tape?

N/A

Are soil and other building material stockpiles demarcated with danger tape?

Yes

Orange safety cones are used due to windy conditions



Photo 25



Photo 26



Photo 27

Are temporary waste stockpiles demarcated with danger tape?

N/A

Are only construction personnel allowed within these work areas?

N/A

Are 2 fire extinguishers available at the fuel storage area and are they charged?

Yes



Photo 28



Photo 29



Photo 30

Toilets

5 / 5 (100%)

Are there separate toilets for males and females?

Yes

6 portable and two built



Photo 31



Photo 32



Photo 33

Is there 1 toilet for every 25 females?

Yes

Currently, there is one female employee with her toilet.

Is there 1 toilet for every 50 males?

Yes

There are 18 employees.



Photo 34

Are the toilets no further than 250m from the workers?

Yes



Photo 35

Is the adequacy of the number of toilets on sites closely monitored?

Yes

General

5 / 5 (100%)

Are there any trees or natural vegetation removed on-site to create open fires?

No

Do all employees have the needed PPE (hard hat, gloves, overalls, safety shoes and protective glasses)?

Yes

PPE register



Photo 36



Photo 37



Photo 38

Is potable water provided to employees on site?

Yes

80 litres



Photo 39

Is there evidence that persons smoke close to fuel storage facilities or portable chemical toilets?

No



Photo 40



Photo 41

Do workers drink alcohol during work hours?

No

Is unauthorized public access controlled?

Yes



Photo 42



Photo 43



Photo 44



Photo 45

DUST AND NOISE		6 / 6 (100%)
Dust		4 / 4 (100%)
Is a watering truck used on gravel roads with the most heavy vehicle movement, especially during dry and windy conditions? Once a week to once every second week.	Yes	
Is there adequate ventilation available in the event of sanding or grinding work? Outside   Photo 46 Photo 47	Yes	
Are stockpiles of building materials and earth material kept moist or the surfaces stabilised? Not advisable due to cement mixing requirements.	N/A	
Are the size of stockpiles of large quantities of soil, topsoil and other fine material limited?  Photo 48	Yes	
Are awareness of ambient air quality and consideration regarding wind speed and direction taught for the undertaking of dust generating activities?	Yes	
Noise		1 / 1 (100%)
Are work hours restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles are less than 500m from residential areas?	Yes	



Photo 49

Are all receptors (residents or businesses within 500m from the work areas) notified at least 2 days in advance in the event that work is necessary outside the designated working hours?

N/A

There are no neighbours. Regular communication with Trekkopje Mine.

Do vehicles have regular engine maintenance programs, to control vehicle emissions?

Yes

ENVIRONMENTAL TRAINING AND AWARENESS, ENVIRONMENTAL CONSERVATION

12 / 13 (92.31%)

Environmental Induction (Training)

5 / 5 (100%)

Is the importance of complying with the EMP explained to workers?

Yes

Registers



Photo 50

Training material containing EMP details.



Photo 51



Photo 52

Is the potential environmental impacts of construction activities discussed?

Yes

Training material containing potential environmental impacts.



Photo 53

Are employees trained on their roles and responsibilities,

Yes

including emergency preparedness?	
Is there an explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities?	Yes
Is there an explanation of the specific mitigation measures within this EMP, especially unfamiliar provisions?	Yes
Conservation of Vegetation	3 / 3 (100%)
Is there evidence of driving beyond demarcated areas and off established roads taking place?	No
Is there evidence of movement of staff or visitors beyond the project site?	No
Is the collection of plants or wood for cooking beyond the project site strictly prohibited?	Yes
Conservation of Water	1 / 1 (100%)
Is water effective equipment used?	N/A
Are all leaking fittings repaired or replaced timeously?	N/A
Are brooms used to clean floors rather than hosing them down with a pipe?	Yes
 Photo 54	
Are buckets or high pressure hoses used to clean areas, equipment, or vehicles instead of a regular hose pipe?	N/A
Cleaning of equipment does not take place on site.	
Are the provisions contained in the Water Management Plan implemented?	N/A
Materials Camp and Lay-down Areas	1 / 1 (100%)
Are the materials camp and lay-down areas a safe distance	Yes

from sensitive areas?

More than 200m from sensitive areas.



Photo 55

Are the areas designated for the proposed services infrastructure used as lay-down areas as far as possible?

N/A

Conservation of Vegetation, birds and bats

1 / 2 (50%)

Is construction or movement limited to the site boundaries and demarcated areas, unless approved by a specialist?

Yes

Is there appropriate stormwater management in place?

Yes

Natural drainage being used

Are animals injured, fed, trapped, hunted or harmed in any way?

N/A

EMPLOYMENT/RECRUITMENT,	7 / 7 (100%)
Legislation and Recruitment	7 / 7 (100%)
Does the contractor adhere to the legal provisions in the Labour Act (see Table 1 in EMP) for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.) in the contract?	Yes
NIMT and Spitzkoppe conservancy are used for recruitment.	
Has a recruitment process been developed?	Yes
Does the process include local authority (town council, local headman etc.) assistance with the recruitment process?	Yes
Are all sub-contractors aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process?	Yes
Does recruitment take place at construction sites?	No
Do contractors give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns?	Yes
Are the terms and conditions of their respective employment contracts (e.g., period of employment etc.) clearly explained to all jobseekers?	Yes
Are interpreters used when necessary?	N/A

STAKEHOLDER COMMUNICATION		4 / 5 (80%)
Communication Plan		
Has the contractor developed a Communication Plan?		N/A
General Communication Matters and Communication with Property Owners		4 / 5 (80%)
Has the ER appointed an ECO to liaise between the Contractor, stakeholders, Developer, and consultants?		Yes
Has the appointed Contractor appointed a person from the construction team to take responsibility for the implementation of all provisions of this EMP?		Yes
Does the Contractor report on the status of the implementation of all provisions of the EMP during every site meeting?		Yes
Does all communication with the stakeholders take place through the ECO?		N/A
Is a copy of the EMP available at the site office and accessible to all stakeholders?		Yes
		
Photo 56		

SOCIO-ECONOMIC AND MISCELLANEOUS		1 / 1 (100%)
Archaeology and Heritage Resources		1 / 1 (100%)
Has a chance find procedure been developed according to the requirements set out in the EMP?		Yes
Have there been any chance finds?		N/A

APPENDIX E - IAUDITOR REPORT MAY 2024

PV Plant - EMP Compliance

6 May 2024 / ECC Admin

Flagged items	0	Actions	0
---------------	---	---------	---

Sorex Sun Energy

Conducted on	6 May 2024 6:04 AM CAT
Prepared by	ECC Admin
Location	Sorex PV Plant

6.2.3: ENVIRONMENTAL CONTROL OFFICER (ECO)

Are adequate environmental awareness training for senior site personnel conducted?

Yes



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5

Is there compliance with the relevant national legislation and the EMP?

Yes

Are appropriate actions taken if the specifications of the EMP are not adhered to?

Yes

Is there advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER?

Yes

Are continuous reviews of the EMP and recommended additions and/or changes made to the document?

Yes

WASTE MANAGEMENT

Waste Management Plan

Has a waste management plan been created?

Yes

Hazardous Waste

Are all heavy construction vehicles and equipment on site in possession of a drip tray?

Yes



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11

Are drip trays cleaned daily and spillage handled, stored and disposed of as hazardous waste?

Yes

Is all spilled concrete (wet or dry), treated as hazardous waste and disposed of by the end of each day, in the appropriate hazardous waste containers?

Yes

Are all hazardous substances like fuel or chemicals stored in containers which are stored on an impermeable surface that is bunded?

N/A

Fuel is transported from Arandis to site daily.

Are battery systems sealed and not opened or serviced on site?

Yes



Photo 12



Photo 13

Does the maintenance and washing of construction vehicles take place only at a designated workshop area?

N/A

No maintenance or washing takes place on-site.

Is the workshop area lined with concrete?

N/A

There is no workshop, only a storage area.



Photo 14



Photo 15



Photo 16

Sewage and Grey Water

Is there evidence of sewage (black water) discharged directly onto open soil along drainage lines, or any other unspecified areas?

No

Is sewage removed from site on regularly and disposed of at a recognised (municipal) sewage treatment facility?

Yes

Elite services in Swakopmund clean the mobile toilets twice a week, Tuesdays and Thursdays.



Photo 17



Photo 18

Is water collected from equipment cleaning areas (grey water), left standing for long periods of time (promoting parasite and bacterial proliferation)?

No

If practicable, is grey used for dust suppression or to clean equipment?

Yes

General Waste

Is the construction site kept tidy at all times?

Yes



Photo 19



Photo 20



Photo 21



Photo 22



Photo 23



Photo 24



Photo 25

Are all domestic and general construction waste produced on a daily basis cleaned and contained daily?

Yes

General waste is taken to Arandis daily.

Is waste buried or burned on site?

No

Are waste containers emptied regularly and removed from site to a recognised (municipal) waste disposal site?

Yes

Is recyclable waste taken to the nearest recycling depot?

Yes

General waste is taken to Arandis on a daily basis and the recyclable waste taken to Swakopmund weekly.



Photo 26



Photo 27



Photo 28

Is there a sufficient number of separate waste containers for hazardous and domestic/general waste provided on site and clearly marked as such?

N/A

Are construction labourers sensitised to dispose of waste in a responsible manner and to not litter?

Yes

Housekeeping is done everyday.

HEALTH AND SAFETY

HIV/AIDS and TB Training

Does the contractor approach the Ministry of Health and Social Services to co-opt a health officer, to facilitate HIV/AIDS and TB education programs periodically on site during the construction phase?

N/A

NEC employees are covered by NAMED.
Ministry will become involved in 2024.

Road Safety

Are all vehicles that transport materials to and from the site, road-worthy?

Yes



Photo 29



Photo 30



Photo 31



Photo 32

Do all drivers that transport materials have a valid driver's license and adhere to all traffic rules?

Yes

List of drivers, incident register

NEC head contractor transports material to site.

Are loads upon vehicles properly secured to avoid items falling off the vehicle?

Yes

Material arrived on site in containers.

Safety Around Excavated and Work Areas

Are short lengths of trenches and box areas for services or foundations excavated so as to not allow trenches to be left unattended for more than 24 hours?

N/A

The creation of trenches have not commenced.

Are all excavation works demarcated with danger tape?

N/A

Are soil and other building material stockpiles demarcated with danger tape?

Yes

Orange safety cones are used due to windy conditions



Photo 33



Photo 34



Photo 35



Photo 36

Are temporary waste stockpiles demarcated with danger tape?

N/A

Are only construction personnel allowed within these work areas?

N/A

Are 2 fire extinguishers available at the fuel storage area and are they charged?

Yes



Photo 37



Photo 38



Photo 39



Photo 40

Toilets

Are there separate toilets for males and females?

Yes

6 portable and two built



Photo 41



Photo 42



Photo 43

Is there 1 toilet for every 25 females?

Yes

Currently, there is one female employee with her toilet.

Is there 1 toilet for every 50 males?

Yes

There are 24 employees.



Photo 44

Are the toilets no further than 250m from the workers?

Yes



Photo 45

Is the adequacy of the number of toilets on sites closely monitored?

Yes

General

Are there any trees or natural vegetation removed on-site to create open fires?

No

Do all employees have the needed PPE (hard hat, gloves, overalls, safety shoes and protective glasses)?

Yes



Photo 46

PPE register



Photo 47



Photo 48



Photo 49

Is potable water provided to employees on site?

Yes

80 litres



Photo 50

Is there evidence that persons smoke close to fuel storage facilities or portable chemical toilets?

No



Photo 51



Photo 52

Do workers drink alcohol during work hours?

No

Alcohol tests

Alcohol tests are conducted at the main gate.

Is unauthorized public access controlled?

Yes



Photo 53



Photo 54



Photo 55



Photo 56

DUST AND NOISE

Dust

Is a watering truck used on gravel roads with the most heavy vehicle movement, especially during dry and windy conditions?

Yes

Once a week to once every second week.

Is there adequate ventilation available in the event of sanding or grinding work?

Yes

Outside



Photo 57



Photo 58

Are stockpiles of building materials and earth material kept moist or the surfaces stabilised?

N/A

Not advisable due to cement mixing requirements.

Are the size of stockpiles of large quantities of soil, topsoil and other fine material limited?

Yes



Photo 59

Are awareness of ambient air quality and consideration regarding wind speed and direction taught for the undertaking of dust generating activities?

Yes

Training records



Photo 60

Noise

Are work hours restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles are less than 500m from residential areas?

Yes



Photo 61

Are all receptors (residents or businesses within 500m from the work areas) notified at least 2 days in advance in the event that work is necessary outside the designated working hours?

N/A

There are no neighbours. Regular communication with Trekkopje Mine.

Do vehicles have regular engine maintenance programs, to control vehicle emissions?

Yes

ENVIRONMENTAL TRAINING AND AWARENESS, ENVIRONMENTAL CONSERVATION

Environmental Induction (Training)

Is the importance of complying with the EMP explained to workers?

Yes

Registers



Photo 62



Photo 63

Training material containing EMP details.



Photo 64



Photo 65

Is the potential environmental impacts of construction activities discussed?

Yes

Training material containing potential environmental impacts.



Photo 66

Are employees trained on their roles and responsibilities, including emergency preparedness?

Yes

Is there an explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities?	Yes
Is there an explanation of the specific mitigation measures within this EMP, especially unfamiliar provisions?	Yes
Conservation of Vegetation	
Is there evidence of driving beyond demarcated areas and off established roads taking place?	No
Site is fenced off.	
Is there evidence of movement of staff or visitors beyond the project site?	No
Is the collection of plants or wood for cooking beyond the project site strictly prohibited?	Yes
Conservation of Water	
Is water effective equipment used?	N/A
Are all leaking fittings repaired or replaced timeously?	N/A
Are brooms used to clean floors rather than hosing them down with a pipe?	Yes
	
Photo 67	
Are buckets or high pressure hoses used to clean areas, equipment, or vehicles instead of a regular hose pipe?	N/A
Cleaning of equipment does not take place on site.	
Are the provisions contained in the Water Management Plan implemented?	N/A
Materials Camp and Lay-down Areas	
Are the materials camp and lay-down areas a safe distance from sensitive areas?	Yes
More than 200m from sensitive areas.	



Photo 68

Are the areas designated for the proposed services infrastructure used as lay-down areas as far as possible?	N/A
Conservation of Vegetation, birds and bats	
Is construction or movement limited to the site boundaries and demarcated areas, unless approved by a specialist?	Yes
Is there appropriate stormwater management in place? Natural drainage being used	Yes
Are animals injured, fed, trapped, hunted or harmed in any way?	N/A

EMPLOYMENT/RECRUITMENT,	
Legislation and Recruitment	
Does the contractor adhere to the legal provisions in the Labour Act (see Table 1 in EMP) for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.) in the contract? NIMT and Spitzkoppe conservancy are used for recruitment.	Yes
Has a recruitment process been developed?	Yes
Does the process include local authority (town council, local headman etc.) assistance with the recruitment process?	Yes
Are all sub-contractors aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process?	Yes
Does recruitment take place at construction sites?	No
Do contractors give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns?	Yes
Are the terms and conditions of their respective employment contracts (e.g., period of employment etc.) clearly explained to all jobseekers?	Yes
Are interpreters used when necessary?	N/A

STAKEHOLDER COMMUNICATION

Communication Plan

Has the contractor developed a Communication Plan?

N/A

General Communication Matters and Communication with Property Owners

Has the ER appointed an ECO to liaise between the Contractor, stakeholders, Developer, and consultants?

Yes

Has the appointed Contractor appointed a person from the construction team to take responsibility for the implementation of all provisions of this EMP?

Yes

Does the Contractor report on the status of the implementation of all provisions of the EMP during every site meeting?

Yes

Does all communication with the stakeholders take place through the ECO?

N/A

Is a copy of the EMP available at the site office and accessible to all stakeholders?

Yes



Photo 69

SOCIO-ECONOMIC AND MISCELLANEOUS

Archaeology and Heritage Resources

Has a chance find procedure been developed according to the requirements set out in the EMP?

Yes

Have there been any chance finds?

N/A

APPENDIX F – IAUDITOR REPORT AUGUST 2024

PV Plant - EMP Compliance

22 Aug 2024 / Diaan

Incomplete

Flagged items	1	Actions	1
Sorexasun Energy			
Conducted on	22 Aug 2024 8:38 AM CAT		
Prepared by	Diaan		
Location	Sorexasun PV Plant		

6.2.3: ENVIRONMENTAL CONTROL OFFICER (ECO)

Are adequate environmental awareness training for senior site personnel conducted?

Yes



Photo 1



Photo 2

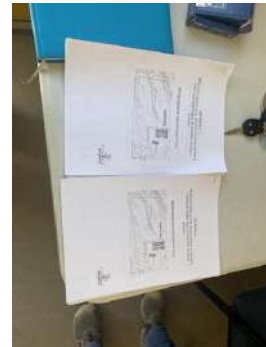


Photo 3



Photo 4



Photo 5



Photo 6

Is there compliance with the relevant national legislation and the EMP?

Yes

Are appropriate actions taken if the specifications of the EMP are not adhered to?

Yes

Is there advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER?

Yes

Are continuous reviews of the EMP and recommended additions and/or changes made to the document?

Yes

WASTE MANAGEMENT

Waste Management Plan

Has a waste management plan been created?

Yes

Waste management plan



Photo 7

Hazardous Waste

Are all heavy construction vehicles and equipment on site in possession of a drip tray?

Yes



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



Photo 13

Are drip trays cleaned daily and spillage handled, stored and disposed of as hazardous waste?

Yes

Yes cleaned and dumped on Friday's.

Is all spilled concrete (wet or dry), treated as hazardous waste and disposed of by the end of each day, in the appropriate hazardous waste containers?

N/A

Everything used on site is ready mix.

Are all hazardous substances like fuel or chemicals stored in containers which are stored on an impermeable surface that is bunded?

N/A

Fuel is transported from Arandis to site daily.

Are battery systems sealed and not opened or serviced on site?

Yes



Photo 14



Photo 15



Photo 16

Does the maintenance and washing of construction vehicles take place only at a designated workshop area?

N/A

No maintenance or washing takes place on-site.

Is the workshop area lined with concrete?

N/A

There is no workshop, only a storage area.



Photo 17



Photo 18



Photo 19

Sewage and Grey Water

Is there evidence of sewage (black water) discharged directly onto open soil along drainage lines, or any other unspecified areas?

No

Is sewage removed from site on regularly and disposed of at a recognised (municipal) sewage treatment facility?

Yes

Elite services in Swakopmund clean the mobile toilets twice a week, Tuesdays and Thursdays.



Photo 20



Photo 21

Is water collected from equipment cleaning areas (grey water), left standing for long periods of time (promoting parasite and bacterial proliferation)?

No

If practicable, is grey used for dust suppression or to clean equipment?

Yes

General Waste

Is the construction site kept tidy at all times?

Yes



Photo 22



Photo 23



Photo 24



Photo 25



Photo 26



Photo 27



Photo 28



Photo 29



Photo 30

Are all domestic and general construction waste produced on a daily basis cleaned and contained daily?

Yes

General waste is taken to Arandis daily.



Photo 31

Is waste buried or burned on site?

No

Are waste containers emptied regularly and removed from site to a recognised (municipal) waste disposal site?

Yes

Emptied once a week (or as necessary) at Arandis.



Photo 32

Is recyclable waste taken to the nearest recycling depot?

Yes

General waste is taken to Arandis on a daily basis and the recyclable waste taken to Swakopmund weekly.



Photo 33



Photo 34



Photo 35

Are construction labourers sensitised to dispose of waste in a responsible manner and to not litter?

Yes

Housekeeping is done everyday.



Photo 36



Photo 37

HEALTH AND SAFETY

1 flagged, 1 action

HIV/AIDS and TB Training

Does the contractor approach the Ministry of Health and Social Services to co-opt a health officer, to facilitate HIV/AIDS and TB education programs periodically on site during the construction phase?

NEC employees are covered by NAMED.
Ministry will become involved in 2024.

Road Safety

Are all vehicles that transport materials to and from the site, road-worthy?

Yes



Photo 38



Photo 39



Photo 40



Photo 41



Photo 42



Photo 43

Do all drivers that transport materials have a valid driver's license and adhere to all traffic rules?

Yes

List of drivers, incident register

NEC head contractor transports material to site.



Photo 44



Photo 45

Are loads upon vehicles properly secured to avoid items falling off the vehicle?

Yes

Material arrived on site in containers.

Safety Around Excavated and Work Areas

1 flagged, 1 action

Are short lengths of trenches and box areas for services or foundations excavated so as to not allow trenches to be left unattended for more than 24 hours?

The creation of trenches has not commenced.

Open trench, prep, add bedding layer (heat resistant), add cable, add another bedding layer and then backfill material. The process takes around a week. Trenches clearly demarcated orange mesh and sign.



Photo 46

Are all excavation works demarcated with danger tape?

Yes



Photo 47

Are soil and other building material stockpiles demarcated with danger tape?

Yes

Orange safety cones are used due to windy conditions



Photo 48



Photo 49



Photo 50



Photo 51

Are temporary waste stockpiles demarcated with danger tape?

N/A

Are only construction personnel allowed within these work areas?

Yes

Everyone on site is employees or contractors.

Are 2 fire extinguishers available at the fuel storage area and are they charged?

No

Due for service (service was due in June 2024)



Photo 52



Photo 53



Photo 54



Photo 55



Photo 56

To do | Priority: Low | Due: 29 Aug 2024 9:32 AM CAT | Created by: Diaan Hoffman

Due for service (service was due in June2024)

Regardless of the fact that a fire extinguisher remains charged, they must be serviced according to the stipulated dates on the service card.

Toilets

Are there separate toilets for males and females?

Yes

4 toilets in total



Photo 57



Photo 58

Is there 1 toilet for every 25 females?

Yes

Currently, there is one female employee with her toilet.

Is there 1 toilet for every 50 males?

Yes

Total of 36 employees (NEC) on site. About 15 additional contractors.

Are the toilets no further than 250m from the workers?

Yes



Photo 59

Is the adequacy of the number of toilets on sites closely monitored?

Yes

General

Are there any trees or natural vegetation removed on-site to create open fires?

No

Do all employees have the needed PPE (hard hat, gloves, overalls, safety shoes and protective glasses)?

Yes



Photo 60

PPE register



Photo 61



Photo 62



Photo 63



Photo 64



Photo 65

Is potable water provided to employees on site?

Yes

90 litres



Photo 66

Is there evidence that persons smoke close to fuel storage facilities or portable chemical toilets?

No



Photo 67



Photo 68

Do workers drink alcohol during work hours?

No

Alcohol test at hostel and at main gate.

Alcohol tests

Alcohol tests are conducted at the main gate.

Is unauthorized public access controlled?

Yes



Photo 69



Photo 70



Photo 71



Photo 72

DUST AND NOISE

Dust

Is a watering truck used on gravel roads with the most heavy vehicle movement, especially during dry and windy conditions?

Yes

Once a week to once every second week.

Is there adequate ventilation available in the event of sanding or grinding work?

Yes

Outside



Photo 73



Photo 74

Are stockpiles of building materials and earth material kept moist or the surfaces stabilised?

N/A

Not advisable due to cement mixing requirements.

Are the size of stockpiles of large quantities of soil, topsoil and other fine material limited?

Yes



Photo 75

Are awareness of ambient air quality and consideration regarding wind speed and direction taught for the undertaking of dust generating activities?

Yes

Dust masks provided each morning and work stopped during east weather conditions.

Training records



Photo 76

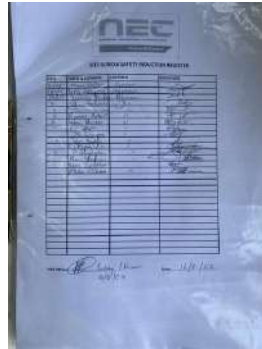


Photo 77

Noise

Are work hours restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles are less than 500m from residential areas?

Yes



Photo 78

Are all receptors (residents or businesses within 500m from the work areas) notified at least 2 days in advance in the event that work is necessary outside the designated working hours?

N/A

There are no neighbours. Regular communication with Trekkopje Mine.

Do vehicles have regular engine maintenance programs, to control vehicle emissions?

Yes

ENVIRONMENTAL TRAINING AND AWARENESS, ENVIRONMENTAL CONSERVATION

Environmental Induction (Training)

Is the importance of complying with the EMP explained to workers?

Yes

Registers



Photo 79



Photo 80

Training material containing EMP details.



Photo 81



Photo 82

Is the potential environmental impacts of construction activities discussed?

Yes

Training material containing potential environmental impacts.



Photo 83

Are employees trained on their roles and responsibilities,

Yes

including emergency preparedness?	
Is there an explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities?	Yes
Is there an explanation of the specific mitigation measures within this EMP, especially unfamiliar provisions?	Yes
Conservation of Vegetation	
Is there evidence of driving beyond demarcated areas and off established roads taking place?	No
Site is fenced off.	
Is there evidence of movement of staff or visitors beyond the project site?	No
Is the collection of plants or wood for cooking beyond the project site strictly prohibited?	Yes
Conservation of Water	
Is water effective equipment used?	N/A
Are all leaking fittings repaired or replaced timeously?	N/A
Are brooms used to clean floors rather than hosing them down with a pipe?	Yes
  Photo 84 Photo 85	
Are buckets or high pressure hoses used to clean areas, equipment, or vehicles instead of a regular hose pipe?	N/A
Cleaning of equipment does not take place on site.	
Are the provisions contained in the Water Management Plan implemented?	N/A
Materials Camp and Lay-down Areas	

Are the materials camp and lay-down areas a safe distance from sensitive areas?

Yes

More than 200m from sensitive areas.



Photo 86

Are the areas designated for the proposed services infrastructure used as lay-down areas as far as possible?

N/A

Conservation of Vegetation, birds and bats

Is construction or movement limited to the site boundaries and demarcated areas, unless approved by a specialist?

Yes

Is there appropriate stormwater management in place?

Yes

Natural drainage being used

EMPLOYMENT/RECRUITMENT,

Legislation and Recruitment

Does the contractor adhere to the legal provisions in the Labour Act (see Table 1 in EMP) for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.) in the contract?

Yes

NIMT and Spitzkoppe conservancy are used for recruitment.

Has a recruitment process been developed?

Yes

Does the process include local authority (town council, local headman etc.) assistance with the recruitment process?

Yes

Are all sub-contractors aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process?

Yes

Does recruitment take place at construction sites?

No

Do contractors give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns?

Yes

Are the terms and conditions of their respective employment contracts (e.g., period of employment etc.) clearly explained to all jobseekers?

Yes

Are interpreters used when necessary?

N/A

STAKEHOLDER COMMUNICATION

Communication Plan

Has the contractor developed a Communication Plan?

N/A

General Communication Matters and Communication with Property Owners

Has the ER appointed an ECO to liaise between the Contractor, stakeholders, Developer, and consultants?

Yes

Has the appointed Contractor appointed a person from the construction team to take responsibility for the implementation of all provisions of this EMP?

Yes

Does the Contractor report on the status of the implementation of all provisions of the EMP during every site meeting?

Yes

Does all communication with the stakeholders take place through the ECO?

N/A

Is a copy of the EMP available at the site office and accessible to all stakeholders?

Yes



Photo 87

SOCIO-ECONOMIC AND MISCELLANEOUS

Archaeology and Heritage Resources

Has a chance find procedure been developed according to the requirements set out in the EMP?

Yes

Chance find procedure



Photo 88

Have there been any chance finds?

N/A



sorexa

Submitted to: Sorexa Sun Energy (Pty)
Ltd.

Attention: Mr. Alex Delle Donne
2 Schutzen Street
PO Box 27527
Windhoek, Namibia.

REPORT:

ENVIRONMENTAL BI-ANNUAL REPORT – SEPTEMBER 2024 TO MARCH 2025

PROJECT NUMBER: ECC-43-472-REP-16-A

REPORT VERSION: REV 01

DATE: 01 AUGUST 2025



TITLE AND APPROVAL PAGE

Project Name: Environmental bi-annual report – September 2024 to March 2025
Client Company Name: Sorex Sun Energy (Pty) Ltd.
Client Name: Mr. Alex Delle Donne
Status of Report: Final for Government submission
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Date of issue: 01 August 2025
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EXECUTIVE SUMMARY

Sorex Sun Energy (Sorex or Proponent), a subsidiary of InnoSun Energy Holding Namibia (InnoSun), has finalised the construction of Phase 1 of a 50 megawatt (MW) photovoltaic (PV) solar plant located close to Trekkopje Mine, referred to as the Project. The Project commenced in August 2023. Ondengu Construction (Ondengu) was contracted to undertake the site preparation work of Phase 1 (9.8 Megawatt (MW) and Namibian Engineering Corporation (NEC) were contracted to conduct the mechanical and electrical scope phase of the Project.

This report serves as a seven (7) monthly assessment (bi-annual report) of the implementation of the site environmental management plan (EMP) compliance requirements, to report any other environmental performance and/or concerns that occurred during the Project implementation and to note any changes to the environmental certificate or EMP conditions, as required by the Ministry of Environment, Forestry and Tourism (MEFT) in line with the Environmental Management Act, No. 7 of 2007 and associated 2012 Regulations.

This bi-annual report summarises the findings and observations of the monthly and/or quarterly audits by Environmental Compliance Consultancy (ECC), to evaluate compliance with the site-specific environmental management plan (EMP) and offers comments on the overall performance in adhering to the EMP requirements for the period September 2024 to March 2025.

The following observations and non-conformances were identified over the audited period. These were communicated and, in most cases, rectified or actions amended toward achieving compliance:

- i) Only one fire extinguisher was identified on site instead of two as stipulated in the environmental management plan.
- ii) Construction materials were still found onsite after the Project's construction phase was completed; and
- iii) A damaged spill kit with contaminated soil was observed.

TABLE OF CONTENTS

1	Introduction	7
1.1	Background.....	7
1.2	Purpose of the report.....	11
1.3	Onsite information collection.....	11
1.4	Environmental Compliance Consultancy.....	11
1.5	The proponent of the proposed project	12
2	EMP Compliance summary.....	13
2.1	September 2024 to March 2025 bi-annual reporting period	13
3	Environmental compliance audit.....	15
3.1	Recommendations.....	38
4	Conclusion.....	39

LIST OF TABLES

Table 1 – Proponent’s details.....	12
Table 2 – Audit activity findings summary from November 2024 to March 2025	14
Table 3 - EMP compliance audit	15

LIST OF FIGURES

Figure 1 – Sorexsa Sun Energy 50 MW solar power plant to be constructed.....	8
Figure 2 - Phase 1 of the Trekkopje PV plant.....	9
Figure 3 - Sensitive vegetation and lithops in relation to the total 150 hectare (ha) site area	10

APPENDICES

Appendix A – Environmental management plan	40
Appendix B – Environmental clearance certificate	41
Appendix C – IAuditor report November 2024.....	42

ABBREVIATIONS

Abbreviation	Description
AIDS	acquired immunodeficiency syndrome
ECC	Environmental Compliance Consultancy (Pty) Ltd
ECO	environmental control officer
ESIA	environmental and social impact assessment
EMP	environmental management plan
ER	employee respective
GPS	global positioning system
ha	hectare
HIV	human immunodeficiency virus
InnoSun	InnoSun Energy Holding Namibia (Pty) Ltd
kV	kilovolt
MEFT	Ministry of Environment, Forestry and Tourism
m	metre
MSDS	material safety data sheet
MW	megawatt
NHC	National Heritage Council
NEC	Namibian Engineering Corporation
PPE	personal protective equipment
PV	photovoltaic
Sorexa/Proponent	Sorexa Sun Energy (Pty) Ltd
TB	tuberculosis

1 INTRODUCTION

1.1 BACKGROUND

Sorex Sun Energy (Sorex or Proponent), a subsidiary of InnoSun Energy Holding Namibia (InnoSun), contracted Ondengu Construction (Ondengu) for the site preparation work, and Namibian Engineering Corporation (NEC) for the mechanical and electrical installation, for the Phase 1 development of a 50 megawatt (MW) photovoltaic (PV) solar plant located close to Trekkopje Mine (Figure 1). The Project is located in the Erongo Region, close to Trekkopje Uranium Mine. Phase 1 will occupy ~20 ha, as shown in Figure 2, with a total proposed Project area footprint of ~150 ha for the 50 MW solar plant development (Figure 3).

Activities associated with the construction phase of the solar plant trigger the Environmental Management Act, No. 7 of 2007 and specifically listed activities within the Act's associated Regulations. For this reason, an environmental management plan (EMP), with numerous compliance criteria, was developed to support the issuance of the environmental clearance certificate (ECC-220030) (Appendix B). It is thus a legal requirement for all contractors involved in the Project to comply with the EMP criteria as listed in Appendix A and Appendix B. The Project is closely located in a sensitive area where lithops can be found. Lithops are a protected plant species that is very difficult to see. Due to these factors, it is the responsibility of the Proponent to ensure that construction activities are kept at a safe distance to avoid any damage (Figure 3).

Listed below are the main Project components:

- Pile foundations;
- Solar panels and support structures;
- Inverters and step-up transformers; and
- 33 kilovolt (kV) underground cable.

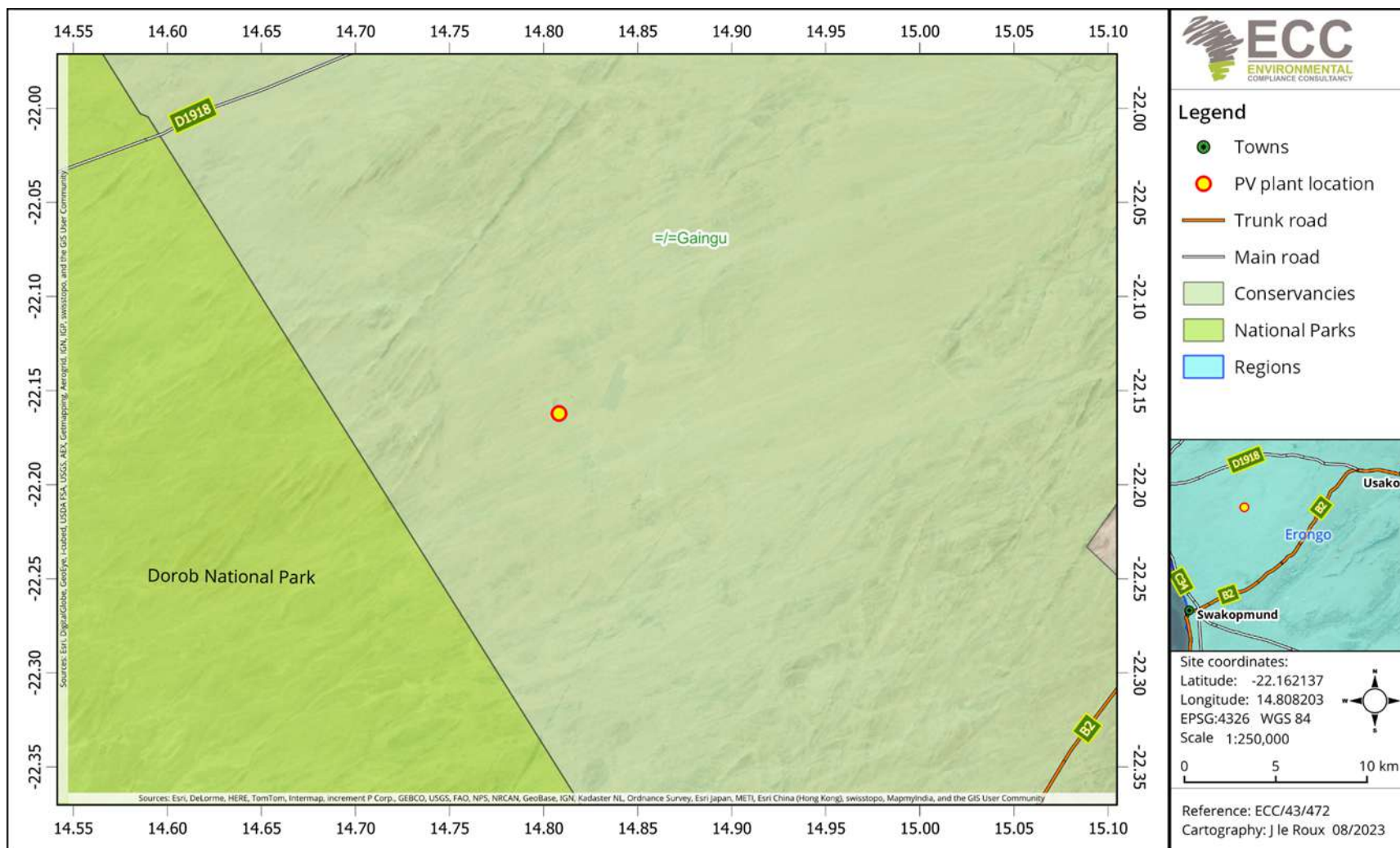


Figure 1 – Sorex Sun Energy 50 MW solar power plant location

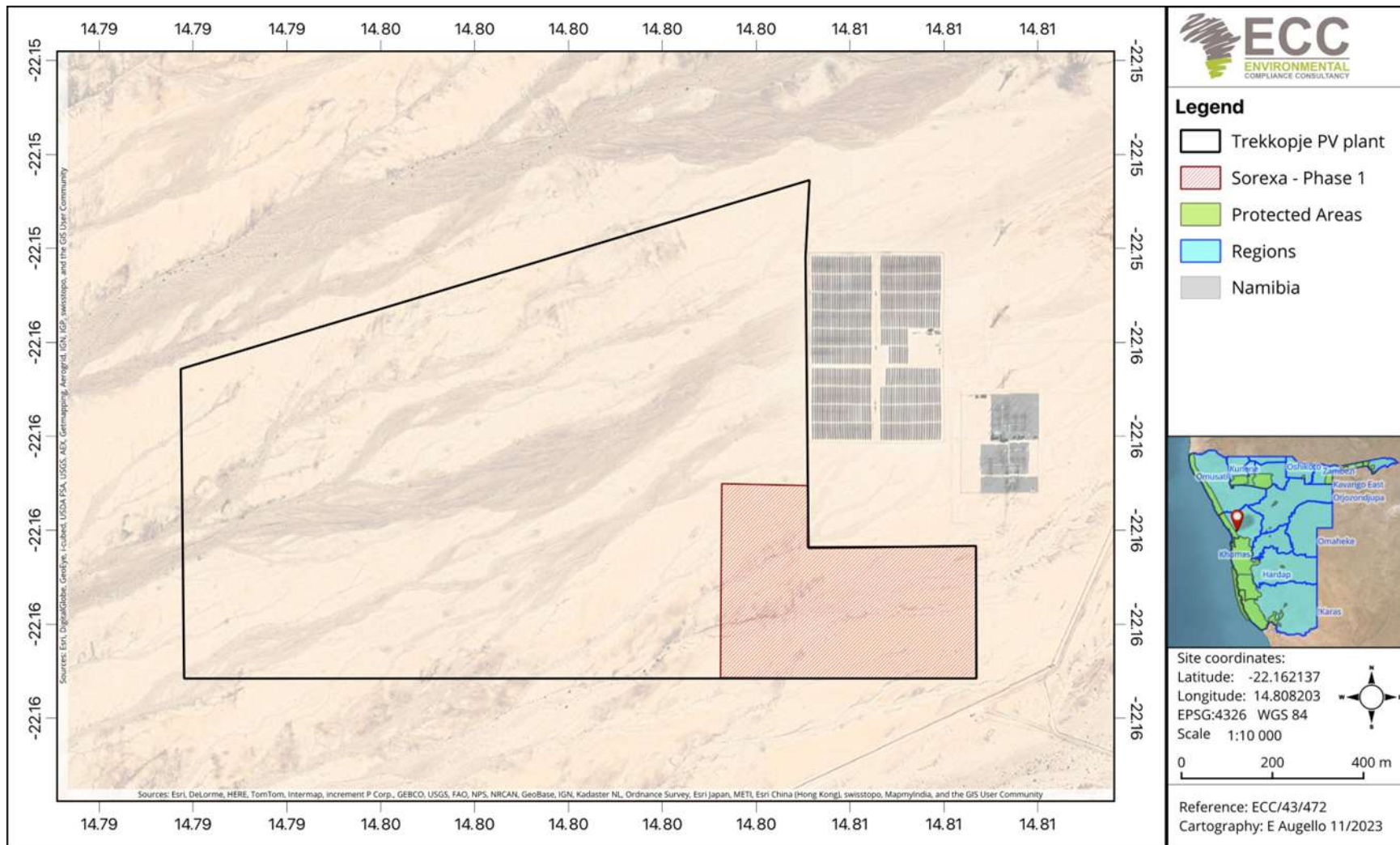


Figure 2 - Phase 1 of the Trekkopje PV plant

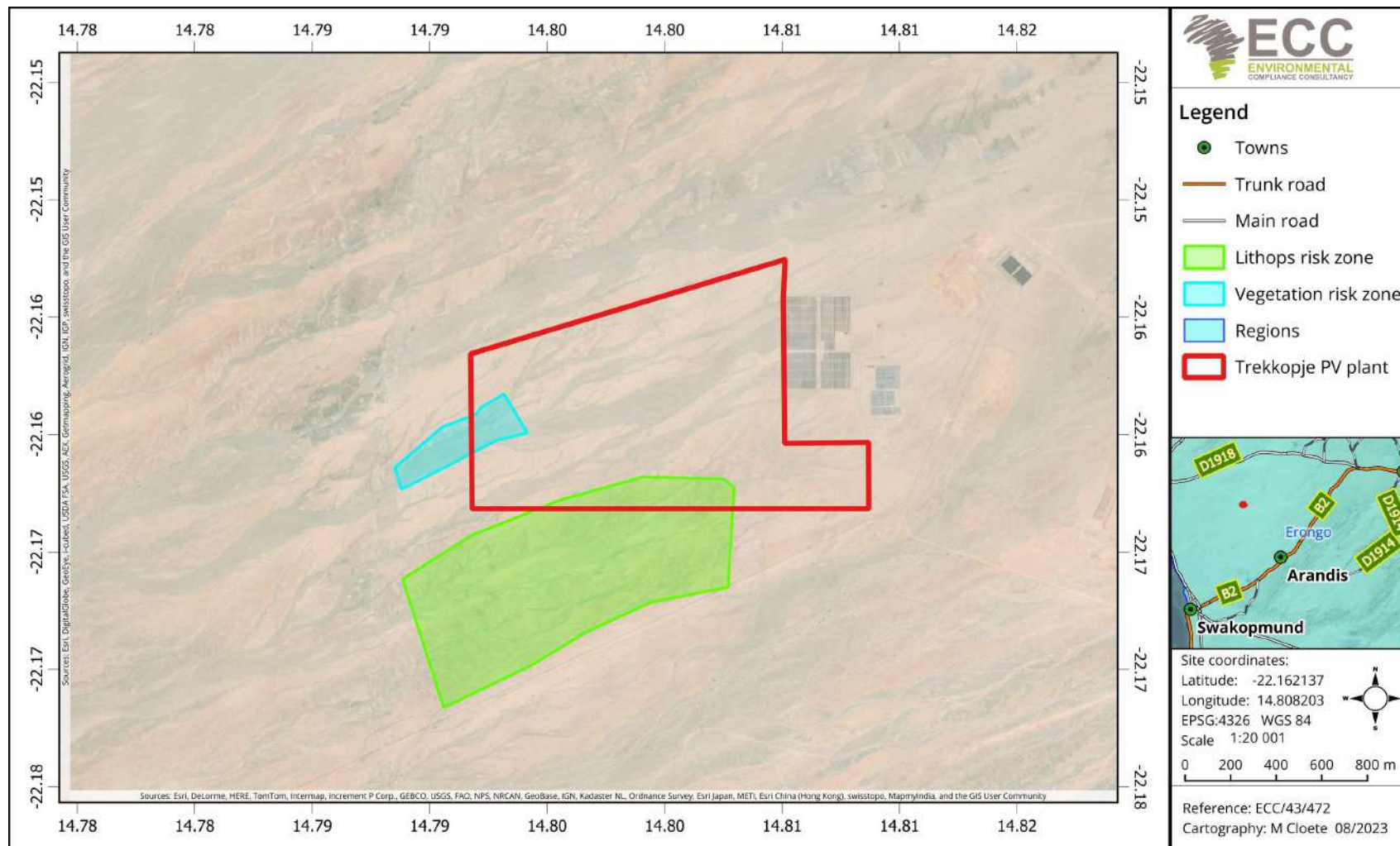


Figure 3 - Sensitive vegetation and lithops in relation to the total 150 hectare (ha) site area

1.2 PURPOSE OF THE REPORT

The purpose of this report is to provide a seven (7) monthly assessment (bi-annual) of the implementation of the site environmental management plan (EMP) compliance requirements, to report on environmental performance and/or concerns that occurred during the Project implementation and to note any changes to the environmental certificate or EMP conditions. This is in line with the approved environmental clearance certificate reporting requirements, as required by MEFT in line with the Environmental Management Act No. 7 of 2007 and associated 2012 Regulations legal requirements.

This bi-annual report summarises the findings and observations of the monthly and/or quarterly audits by Environmental Compliance Consultancy (ECC). Attached in Appendix C is the IAuditor report for the reporting period of September to November 2024. Due to limited activities, a full IAuditor report was not compiled. See Table 2 for findings and observations during this quarter.

The compliance audit conducted on 14/11/2024 and 26/03/2025 was based on the main criteria of the EMP, which include:

1. Legal compliance;
2. Working arrangements;
3. Communication and training;
4. Reporting, compliance and enforcement;
5. Environmental and social management; and
6. Environmental aspects and potential impacts.

1.3 ONSITE INFORMATION COLLECTION

ECC makes use of an online data collection software, IAuditor. It allows the users to build a customised site-specific template according to the Proponent's EMP. Users of the template can add notes, take and annotate photos, of the inspection / audit, or actions to be considered. The inspection report for the reporting period is included in Appendix C.

1.4 ENVIRONMENTAL COMPLIANCE CONSULTANCY

Sorex Sun Energy (Pty) Ltd has appointed a local company, Environmental Compliance Consultancy (Pty) Ltd (ECC) for the provision of environmental control officer (ECO) services for the duration of the Project.

1.5 THE PROPONENT OF THE PROPOSED PROJECT

Sorex Sun Energy (Pty) Ltd is the Proponent for the Project. The Proponent's contact information can be found Table 1.

Table 1 – Proponent's details

Company Representative:	Contact Details:
Mr Alex Delle Donne Senior Manager: Development & Commercial	Innosun Energy Holdings (Pty) Ltd.: PO Box 27527, Windhoek info@innosun.co.za +264 (61) 254 700

2 EMP COMPLIANCE SUMMARY

2.1 SEPTEMBER 2024 TO MARCH 2025 BI-ANNUAL REPORTING PERIOD

The construction activities, findings, observations and corrective actions are listed in Table 2 as per the monthly and/or quarterly audit conducted during the reporting period. Due to a decrease in non-conformances and delays in construction activities, an executive decision by the Proponent was made to reduce monthly audits to quarterly inspections from May 2024 going forward. The full compliance audit report can be found in Appendix C for the November 2024 inspection. Due to limited activities, an IAuditor report was not completed in March 2025 however, findings and observations can be found in Table 2.

1. Only one fire extinguisher was identified instead of two as stipulated in the EMP.
2. Continued environmental training and awareness have been conducted.
3. To date, there is no record or evidence that sensitive vegetation and lithops have been disturbed, that wood has been collected or that any animals have been captured, hunted, trapped or harmed.
4. Personal protective equipment (PPE) is provided to all personnel members and contractors.
5. General waste is removed from the site and disposed of in Arandis daily and recyclable waste is taken to Swakopmund weekly. To prevent litter and pollution, housekeeping is also done on a daily basis.
6. The mobile toilets are cleaned twice a week to avoid spills and leaks.

Table 2 – Audit activity findings summary from November 2024 to March 2025

Site visit	Observations and non-conformances	Responses and corrective actions	Status
14 November 2024	- A fire extinguisher passed its service date was found on site. - Multiple hydrocarbon leaks were observed along with a lack of drip trays to prevent these leaks from occurring.	- The fire extinguisher should be sent for service. - Hydrocarbon leaks must be cleaned and the contaminated soil disposed of at the hazardous waste facility in Walvis Bay.	- Only one fire extinguisher was identified instead of two, as the EMP stipulates. - The contaminated soil caused by hydrocarbon leaks was cleaned.
26 March 2025	- Some of the construction material was still found on site. - A damaged spill kit was found on site with contaminated material spilling out. - A meeting was arranged with the Ministry of Health and Social Services however, the Ministry failed to conduct a site visit and HIV/AIDS and TB education program.	- All material not required for the operational phase of the Project must be removed from site. - The damaged spill kit and contaminated material should be removed from site and the contaminated material removed to the hazardous waste facility in Walvis Bay.	- Evidence of the removal and materials have not been communicated. - Evidence of the damaged spill kit and contaminated material removal has not been communicated.

3 ENVIRONMENTAL COMPLIANCE AUDIT

This section (Table 3) provides an overview of the EMP requirements as prescribed in the approved EMP for the solar power plant. No non-compliances were reported for the period under review.

Table 3 - EMP compliance audit

Aspect	Management requirements	Compliance	Comments
Planning and design phase			
Cleaning of PV tables	- Investigations regarding water conserving designs should be carried out and consider as a minimum the following alternative/supplementary cleaning methods: - Options for using recycled water; - Use of industrial leaf blowers; - Use of self-cleaning methods; - Use of electrostatic charge to repel dust and force it to the edges of the panels; - Use of vibrations to shake dust off of panels. - The tarring of service roads should be considered as an additional dust suppression method. - Vegetation on site is very sparse. Annual grasses should be kept intact as this will assist in lowering dust on site.	Not applicable	The operational phase has not commenced.

Aspect	Management requirements	Compliance	Comments
Borrow pit investigation	- Borrow pit investigations need to include environmental considerations and requirements: - o As first option investigate/explore the use of local building sand suppliers to supply the project's building sand requirements. - o Ensure that all borrow pits utilised, commercial or private, have environmental clearance and Environmental Management Plans in place, which are being implemented. - o Avoid sensitive areas (e.g. areas with high biodiversity, protected archaeological sites, rivers or drainage lines).	Not applicable	- Borrow pits have not been created during the construction phase.
Erosion and preservation of gypsum crust	- Consideration should be given to the erosion control design. The existing drainage lines should be kept intact as far as possible, using natural methods for embankments, water flow diversion such as gabions, only where necessary. The design needs to consider the following: - o The operations of the construction team needs to be organised in such a way that the sensitive gypsum crust in the area is avoided and that the area of impact is limited as far as possible. - o No mechanical equipment will be allowed to remove vegetation on site. All vegetation clearance works will be done manually.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
Construction tender preparation phase management requirements			
EMP Implementation	- Sorex needs to appoint an employer's representative (ER) to act as the Employer's on-site implementing agent. This person will be responsible to ensure that OPE's responsibilities are executed in compliance with relevant legislation and this EMP.	- Compliant	- This function was fulfilled by the main contractor on site (NEC).
Workforce accommodation	- Consideration should be given to the accommodation of the workforce, which will not in Arandis (prohibited on site). It is preferred that workers from Arandis be appointed who are already residing there. For those not from Arandis, consultation is to take place with the Arandis Town Council, to find suitable accommodation or to create a temporary site with suitable infrastructure for this purpose.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Vegetation study	- Employ a vegetation specialist to identify any potential plants of conservation concern in the areas indicated on the map below (Figure 2). The green zone could be used on condition that a vegetation specialist investigates the occurrence of <i>Lithops</i> species and provides recommendations of how they should be preserved/removed prior to construction. The Blue area is to remain free of development, since it is also an important drainage line.	- Compliant	- This was done and no non-conformances observed during the construction phase. - The Proponent shall continue to ensure that mitigation measures are in place as per the EMP for operations.

Aspect	Management requirements	Compliance	Comments
EMP implementation	Relevant sections of this EMP should be included in the tender documents for all development so that tenderers can make provision for implementation of the EMP.	Compliant	- This was done for construction. - The Proponent shall continue to ensure that mitigation measures are in place as per the EMP for operations.
Financial provision	- Financial provision for the compilation of a waste management plan should be included as a cost item within tenders concerning the operation and maintenance of services infrastructure. - Financial provision for topsoil management and the rehabilitation of borrow pits should be included as a cost item within construction tender documents. - Financial provision for the co-opting of a health officer from the Ministry of Health and Social Services to facilitate human immunodeficiency virus, acquired immunodeficiency (HIV/AIDS) and tuberculosis (TB) education programmes periodically on-site during the construction phase should be included as a cost item within construction tender documents. - Financial provision for the facilitation of an induction programme for both senior, casual construction personnel as well as subcontractors and associated personnel	Compliant	A damaged spill kit with contaminated soil was found during the last audit and should be removed and properly disposed of

Aspect	Management requirements	Compliance	Comments
	should be included as a cost item within tenders concerning the construction and/or maintenance of services infrastructure. - Financial provision for the implementation of a labour intensive project should be made in the tender documents. - Financial provision for the accommodation of the workforce in Arandis, for those not accommodated there, and for the provision of meals and cooking facilities (no wood is to be removed from site) on site. - Financial provision for the drafting of a communication plan should be included as a cost item within construction tender documents.		
Recruitment	- Provisions designed to maximise the use of local labour should be included within tenders concerning the construction and/or maintenance of services infrastructure. - A provision stating that all unskilled labour should be sourced from local communities should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Specific recruitment procedures ensuring local firms receive preference during tender adjudication should be included within tenders	Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	concerning the construction and/or maintenance of services infrastructure. - Provisions promoting gender equality pertaining to recruitment should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Women should be given preference for jobs, which are less toil-intensive.		
Waste management			
Waste management plan	- The contractor should compile a waste management plan which should address as a minimum the mitigation measures included below. - “Waste” is defined as any matter, whether gaseous, liquid or solid or any combination thereof, which is an undesirable or superfluous by-product, emission, residue or remainder of any process or activity.	- Compliant	- Waste was removed from site on a daily basis and disposed of at the Arandis landfill. Recyclable waste is removed to Swakopmund on a weekly basis.
Hazardous waste	- All heavy construction vehicles and equipment on site should be provided with a drip tray. - o Drip trays are to be transported with vehicles wherever they go. - o Drip trays should be cleaned daily and spillage handled, stored and disposed of as hazardous waste.	- Non-compliant	- A damaged spill kit with contaminated soil was found during the last audit and should be removed and properly disposed of.

Aspect	Management requirements	Compliance	Comments
	- All heavy construction vehicles should be maintained regularly to prevent oil leakages. - Maintenance and washing of construction vehicles should be take place only at a designated workshop area. - o The workshop area should be lined with concrete. - o The workshop should be contoured so that run-off from the servicing and washing of vehicles and equipment drains into an oil-water separator, silt trap or lined pit (which should also be installed). - Spilled concrete (wet or dry) should be treated as hazardous waste and disposed of by the end of each day in the appropriate hazardous waste containers. - All hazardous substances (e.g. fuel etc.) or chemicals should be stored temporarily in labelled, safe and sealable containers at a specific location on an impermeable surface, which is bunded. The bunded area should be able to contain 1.5 times the volume of the hazardous material to be stored in the bunded area. - Battery systems should be sealed and not opened or serviced on site.		

Aspect	Management requirements	Compliance	Comments
Sewage and grey water	- Do not allow sewage (back water) to be discharged directly onto open soil along drainage lines or any unspecified area. - All sewage must be removed regularly and disposed of at a recognised (municipal) sewage treatment facility. - The water collected from equipment cleaning areas (grey water), should not be left standing for long periods of time as this promotes parasite and bacterial proliferation. Grey water should, if practicable, be recycled: - o Used for dust suppression; and - o Used to clean equipment. - If grey water will not be recycled it should be removed along with the black water on a regular basis.	- Compliant	- During the construction sewage discharge (spills) have not occurred. The mobile toilets were cleaned twice a week to prevent.
General waste	- The construction site should be kept tidy at all times. All domestic and general construction waste produced on a daily basis should be cleaned and contained daily. - No waste may be burned. - Waste containers (bins) should be emptied regularly and removed from site to a recognised (municipality) waste disposal site. All recyclable waste needs to be taken to the nearest recycling depot.	- Non-Compliant	- Constructors practised good housekeeping, preventing litter and removing waste from site daily. - No evidence of waste burning was observed during the construction phase or the Project. - Hazardous waste was identified spilling out a damaged spill kit.

Aspect	Management requirements	Compliance	Comments
	- A sufficient number of separate waste containers for hazardous and domestic/general waste must be provided on site. These should be clearly marked as such. - Construction labourers should be sensitised to dispose of waste in a responsible manner and not to litter. - No waste may remain on site after the completion of the Project.		
Borrow pits			
Topsoil	- The contractor should adhere to prescribed measures emanating from the borrow-pit investigation and the design for excavations and disposal of spoil material.	Not applicable	Borrow pits were not created during the construction phase.
Rehabilitation	- Upon completion of the construction phase consultations should be held with the local community regarding the post-construction use of the borrow pit(s). - In the event that no post-construction uses are requested, all borrow pits need to be rehabilitated as follows: - o Borrow pits may only be backfilled with clean or inert fill. No material of hazardous nature (e.g. sand removed with an oil spill) may be dumped as backfill.	Not applicable	Borrow pits were not created during the construction period and therefore rehabilitation is not required.

Aspect	Management requirements	Compliance	Comments
	○ Rehabilitated borrow pits need to match the contours of the existing landscape. ○ Take note of drainage channels in the vicinity of the borrow pit. The rehabilitated area should not be higher (or lower) than a drainage channel. This ensures the efficiency of revegetation and reduces the chances of potential erosion. ○ Topsoil is to be spread across borrow pit areas evenly. ○ Deep ripping is required, not just simple scarification, so as to enable rip lines to hold water after heavy rainfall. ○ Ripping should be done along contour lines, not up and down a slope, which could lead to enhanced erosion. ○ Rehabilitated borrow pits need to remain fenced-off after they have been decommissioned to prevent livestock from removing the newly established vegetation on the area.		
Health and safety			

Aspect	Management requirements	Compliance	Comments
HIV/AIDS and TB training	The contractor should approach the Ministry of Health and Social Services to co-opt a health officer to facilitate HIV/AIDS and TB education programmes periodically on site during the construction phase.	- Partial compliance	A meeting was arranged however, the Ministry of Health and Social Services has not conducted a site visit yet.
Road safety	- Demarcate roads clearly. - Provide warning signage where appropriate. - Off-road driving should not be allowed. - All vehicles that transport materials to and from the site must be road-worthy. - Drivers that transport materials should have a valid driver's license and should adhere to all traffic rules. - Loads upon vehicles should be properly secured to avoid items falling off the vehicle.	- Compliant	- Requirements as per the EMP are in order. - The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Safety around excavated and work areas	- Excavations should be left open for an absolute minimum time. - Excavate short lengths of trenches and box areas for services or foundations in such a way that the trench will not be left unattended for more than 24 hours. - Demarcate the following areas with danger tape: - All excavation works; - Soil and other building material stockpiles; and - Temporary waste stockpiles	- Non-compliant	- Two fire extinguishers were not identified on site. - Excavation activities are completed and no longer applicable. - Borrow pits were not created during the construction phase of the Project. - Warning signs and demarcation of construction areas/materials were implemented.

Aspect	Management requirements	Compliance	Comments
	- Provide additional warning signage in areas of movement and in “no personnel” areas where workers are not active. - Borrow pits are to be fenced off with steel wire fencing. - Work areas must be set out and isolated with danger tape on a daily basis with additional warning signage where appropriate. - All building materials and equipment are to be stored only within set-out and demarcated work areas. - Only construction personnel will be allowed within these work areas. - Two (2) fire extinguishers should be available at the fuel storage area - Comply with all mitigation measures laid out in waste management mitigation measures.		
Toilets	- Separate toilets should be available for men and women and should clearly be indicated as such. - Portable toilets (i.e. easily transportable) should be available at every construction site: - o 1 toilet for every 25 females. - o 1 for every 50 males. - Toilets should be no further than 250 m from any worker; - Sewage waste needs to be removed on a regular basis to an official (municipal) sewage disposal	- Compliant	- The site consisted of a total of 51 employees and contractors and one female with four toilets available. - Toilets were serviced and cleaned twice a week.

Aspect	Management requirements	Compliance	Comments
	site. Alternatively, pump sewage into sealable containers and store it until it can be removed; - It is important that the adequacy of the number of toilets on sites be monitored. Construction workers should not be allowed to roam off site to relieve themselves. Should this start to happen, corrective measures are needed, including training and communication to test the adequacy of the number of and distance to toilets. Rectify as necessary; - Workers responsible for cleaning the toilets should be provided with latex gloves and masks.		
Open fires	- No open fires may be made anywhere on site.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
General	- All workers should have appropriate PPE and records of the distribution of PPE should be kept/maintained; - Dust protection masks should be provided to workers if they complain about dust; - Potable water should be provided to workers; - No person should be allowed to smoke close to fuel storage facilities or portable toilet (if toilets are chemical toilets); - No workers should be allowed to drink alcohol during work hours; and	- Compliant	- The relevant PPE is provided. - The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	No workers should be allowed on site under the influence of alcohol.		
Dust and noise			
Dust	- A watering truck should be used on gravel roads with the most heavy vehicle movement especially during dry and windy conditions. However, due consideration should be given to water restriction during times of drought; - Ensure that adequate ventilation is available in the event of sanding or grinding work; - Stockpiles of building materials and earth materials to be kept moist or the surfaces stabilised; - Limit the size of stockpiles of large quantities of soil, topsoil and other fine material; and - Improve awareness of ambient air quality and consideration regarding wind speed and direction when undertaking dust generating activities	Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
Noise	– Work hours should be restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles is less than 500 m from residential area; and – In the event that work is necessary outside the designated working hours, all receptors (residents or businesses within 500 m from the work areas) will need to be notified at least 2 days in advance.	– Compliant	– Construction activities did not take place outside of prescribed times (07:00 – 17:00).
Environmental training and awareness			
Environmental induction	– All construction workers are to undergo environmental induction which should include as a minimum the following: ○ Explanation of the importance of complying with the EMP; ○ Discussion of the potential environmental impacts of construction activities; ○ Employees' roles and responsibilities, including emergency preparedness; ○ Explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities; and ○ Explanation of the specific mitigation measures within this EMP especially unfamiliar provisions.	– Compliant	– Induction was provided to all personnel new to site and continues re-induction was provided to all employees and contractors.

Aspect	Management requirements	Compliance	Comments
Environmental conservation			
Conservation of vegetation	- No driving beyond demarcated areas and off established roads; - No movement of staff or visitors beyond the project site; - The collection of plants or wood for cooking beyond the Project site should be strictly prohibited.	- Compliant	- Driving was limited to the roads created for construction purposes. - All staff and visitors stayed within the boundaries of the Project. - There have not been instances of wood collection for cooking beyond the Project site.
Conservation of water	- Water effective equipment should be used. - All leaking fittings need to be repaired or replaced timeously; - Brooms should be used to clean floors rather than hosing them down with a pipe; - Use buckets or high-pressure hoses to clean areas, equipment or vehicles instead of a regular hose pipe.	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Materials camp and lay-down areas	- Suitable locations for the materials camp and lay-down areas should be identified with the assistance of the ER and the following should be considered in selecting these sites: - o Avoid sensitive areas; - o The areas designated for the proposed services infrastructure should be used as far possible; and	- Compliant	- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	Second choice should be degraded land.		
Conservation of vegetation	No construction or movement should take place beyond the site boundaries or in the demarcated area unless by a specialist.	Compliant	- No non-conformances observed. - The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Birds	Consult an avifauna specialist for practical advice on how to protect birds from collision and electrocution on the transmission line before construction.	Compliant	An avifauna study has not been conducted due to the apparent low risks. However, this should be reconsidered during the operational phase.
Conservation of water	The provisions contained in the water management plan should be implemented.	Compliant	The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Employment/recruitment			
Legislation	Adhere to the legal provisions in the Labour Act for the recruitment of labour (target percentage for gender balance, optimal use of local labour and SME's etc) in the contract.	Compliant	- The required systems are in place. - The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Recruitment	The contractor should compile a document to be used as a guide for the recruitment process, which should include the following provisions as a minimum:	Compliant	The Namibian Institute of Mining Technology and Spitzkoppe conservancy are used for recruitment.

Aspect	Management requirements	Compliance	Comments
	○ The local authority (town council, local headman etc.) should assist with the recruitment process. ○ Recruitment should not take place at construction sites; ○ Ensure that all sub-contractors are aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process; ○ Contractors should give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns; ○ Clearly explain to all job-seekers the terms and conditions of their respective employment contract (e.g. period of employment etc.) – make use of interpreters when necessary.		- The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.
Stakeholder communication			
Communication plan	- The contractor should draft a communication plan, which should outline, as a minimum the following: ○ How stakeholders, who require ongoing communication for the duration of the construction period, will be identified and	- Compliant	- Due to limited receptors, a formal communication plan has not been created however, the Proponent is in direct communication with Trekoppje Mine.

Aspect	Management requirements	Compliance	Comments
	recorded and who will manage and update these records; - How these stakeholders will be consulted on an ongoing basis; and - Make provision for the grievance mechanisms-i.e. how concerns can/will be lodged/recorded and how feedback will be delivered as well as further steps of arbitration in the event feedback is deemed unsatisfactory.		
General communication matters	- The ER should appoint an ECO to liaise between the contractor, stakeholders, developer, and consultants. The appointed contractor shall appoint a person from the construction team to take responsibility for the implementation for all provisions of this EMP. - The contractor shall at every site meeting report on the status of the implementation of all provisions of the EMP. - the contractor should implement the environmental awareness training. - The contractor must list the stakeholders of the project and their contact details with whom ongoing communication would be required for duration of the contract. This list, together with the communication plan	Compliant	- ECC is the ECO for the Project. - The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	must be agreed upon and given to the ER before construction commences. ○ The communication plan, once agreed upon by the developer, shall be binding. ○ All communication with the stakeholders must take place through the ECO. ○ A copy of the EMP must be available at the site office and should be accessible to all stakeholders ○ Key representatives from the above mentioned list need to be invited to attend monthly site meetings to raise any concerns and issues regarding project progress. ○ The contractor should liaise with the Developer regarding all issues related to community consultation and negotiation before construction commences. ○ A procedure should be put in place to ensure that concerns raised have been followed-up and addressed. ○ All people on the stakeholders list should be informed about the availability of the complaints register in writing by the ER prior to the commencement of construction activities.		

Aspect	Management requirements	Compliance	Comments
Communication with property owners	- At the outset of the construction programme, all residents along the route will have to be informed about construction activities within the reserve in front of their property. This should be done in cooperation with the applicable constituency councillors.	- Compliant	- Construction activities did not take place in a residential or close to residential areas.
Socio-economic and miscellaneous			
Archaeology and heritage resources	- Should a heritage site or archaeological site be uncovered or discovered during the construction phase of the Project, a “chance find” procedure should be applied in the order they appear below: - o If operating machinery or equipment stop work; - o Demarcate the site with danger tape; - o Determine GPS (global positioning system) position if possible; - o Report findings to foreman. - Action taken by foreman: - o Report findings, site location and actions taken to superintendent; - o Cease any works in immediate vicinity; - Action taken by superintendent: - o Visit site and determine whether work can proceed without damage to findings;	- Compliant	- No chance finds to date. - The Proponent shall continue to ensure that mitigation measures are in place as per the EMP.

Aspect	Management requirements	Compliance	Comments
	○ Determine and demarcate exclusion boundary; ○ Site location and details to be added to the project's geographic information system (GIS) for field confirmation by archaeologist; - Action taken by archaeologist: ○ Inspect site and confirm addition to project GIS; ○ Advise the National Heritage Council (NHC) and request written permission to remove findings from work area; and ○ Recovery, packaging and labelling of findings for transfer to National Museum. - Should human remains be found, the following actions will be required: ○ Apply the chance find procedure as described above; ○ Scheduled a field inspection with an archaeologist to confirm that remains are human; ○ Advise and liaise with the NHC and Police; and ○ Remains will be recovered and removed either to the National		

Aspect	Management requirements	Compliance	Comments
	Museum or the National Forensic Laboratory as directed.		
Decommissioning			
Dismantling of project components and associated waste	All material produced from the dismantling of project components (which will not be sold) should be sorted into recyclable and non-recyclable mater	Not applicable	Decommissioning has not started as the Project has moved into the operation phase.

3.1 RECOMMENDATIONS

The damaged spill kit and contaminated soil should be removed from site and disposed of at the hazardous waste facility in Walvis Bay. All construction material still on site and not required for the operation phase should be removed from site.

4 CONCLUSION

The construction of the Project was completed in March 2025. During the last audit conducted in March 2025, some construction material was still observed on site and a damaged spill kit with contaminated soil was spilling out. The construction material not required for the operation phase should be removed from site and the contaminated material disposed of at the hazardous waste facility in Walvis Bay.

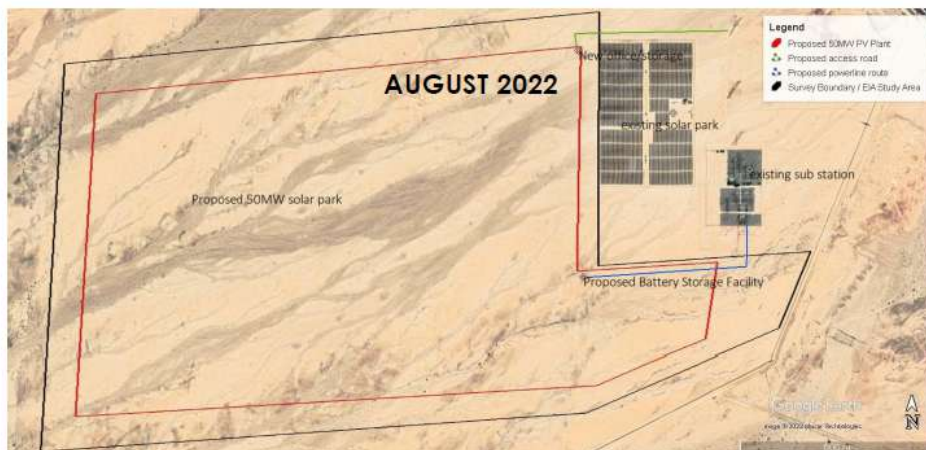
The next reporting period will be from April until September 2025, to align with the environmental clearance certificate expiry in December 2025 and renewal.

APPENDIX A – ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX A

PROPOSED 50MW SOLAR PHOTOVOLTAIC PLANT ON A 150HA SITE NORTH WEST OF ARANDIS, ERONGO REGION

ENVIRONMENTAL MANAGEMENT PLAN



APPENDIX B – ENVIRONMENTAL CLEARANCE CERTIFICATE



REPUBLIC OF NAMIBIA
MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM

OFFICE OF THE ENVIRONMENTAL COMMISSIONER

ENVIRONMENTAL CLEARANCE CERTIFICATE

ISSUED

In accordance with Section 37(2) of the Environmental
Management Act (Act No. 7 of 2007)

TO

Sorexa Sun Energy (PTY) LTD
P O Box 27527, Windhoek

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY

**Proposed 50MW Photovoltaic Solar Power Plan with power line near
Trekopje, Erongo region**

Issued on the date: 2022-12-12
Expires on this date: 2025-12-12

ENVIRONMENTAL COMMISSIONER

(See conditions printed over leaf)

This certificate is printed without erasures or alterations

Reduce
Reuse
Recycle



CONDITIONS OF APPROVAL

1. This environmental clearance is valid for a period of 3 (three) years, from the date of issue unless withdrawn by this office
2. This certificate does not in any way hold the Ministry of Environment, Forestry and Tourism accountable for misleading information, nor any adverse effects that may arise from these activities. Instead, full accountability rests with the proponent and its consultants
3. This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project

APPENDIX C – IAUDITOR REPORT NOVEMBER 2024

PV Plant - EMP Compliance

14 Nov 2024 / ECC Admin

Incomplete

Flagged items	2	Actions	1
Sorexas Sun Energy			
Conducted on	14 Nov 2024 7:16 AM CAT		
Prepared by	ECC Admin		
Location	Sorexas PV Plant		

6.2.3: ENVIRONMENTAL CONTROL OFFICER (ECO)

Are adequate environmental awareness training for senior site personnel conducted?

Yes



Photo 1



Photo 2

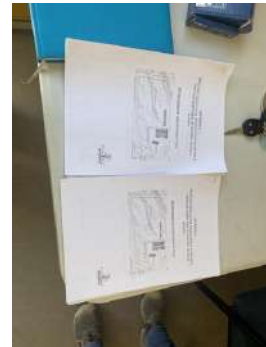


Photo 3



Photo 4



Photo 5



Photo 6



Photo 7

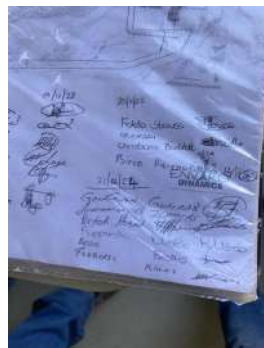


Photo 8

Is there compliance with the relevant national legislation and the EMP?

Yes

Are appropriate actions taken if the specifications of the EMP are not adhered to?

Yes

Is there advising on the removal of person(s) and/or equipment not complying with the specifications of the EMP in consultation with the ER?

Yes

Are continuous reviews of the EMP and recommended additions and/or changes made to the document?

Yes

WASTE MANAGEMENT

1 flagged, 1 action

Waste Management Plan

Has a waste management plan been created?

Yes

Waste management plan



Photo 9

Hazardous Waste

1 flagged, 1 action

Are all heavy construction vehicles and equipment on site in possession of a drip tray?

No



Photo 10



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15



Photo 16



Photo 17



Photo 18



Photo 19



Photo 20



Photo 21



Photo 22



Photo 23



Photo 24

To do | Priority: Low | Due: 2 Dec 2024 10:28 AM CAT | Created by: Diaan Hoffman

Hydrocarbon management

A few hydrocarbon leaks were observed. The drip trays were not placed underneath the vehicles, only under a forklift and one drip tray not in use. Drip trays should be placed under all stationary vehicles and machinery to prevent leaks and spills. If any leaks or spills do occur they must be cleaned immediately as per the EMP.

Is all spilled concrete (wet or dry), treated as hazardous waste and disposed of by the end of each day, in the appropriate hazardous waste containers?

N/A

Everything used on site is ready mix.

Are all hazardous substances like fuel or chemicals stored in containers which are stored on an impermeable surface that is bunded?

N/A

Fuel is transported from Arandis to site daily.

Are battery systems sealed and not opened or serviced on site?

Yes



Photo 25



Photo 26



Photo 27

Does the maintenance and washing of construction vehicles take place only at a designated workshop area?

N/A

No maintenance or washing takes place on-site.

Is the workshop area lined with concrete?

N/A

There is no workshop, only a storage area.



Photo 28



Photo 29



Photo 30

Sewage and Grey Water

Is there evidence of sewage (black water) discharged directly onto open soil along drainage lines, or any other unspecified areas?

No

Is sewage removed from site on regularly and disposed of at a recognised (municipal) sewage treatment facility?

Yes

Elite services in Swakopmund clean the mobile toilets twice a week, Tuesdays and Thursdays.



Photo 31



Photo 32

Is water collected from equipment cleaning areas (grey water), left standing for long periods of time (promoting parasite and bacterial proliferation)?

No

If practicable, is grey used for dust suppression or to clean equipment?

Yes

General Waste

Is the construction site kept tidy at all times?

Yes



Photo 33



Photo 34



Photo 35



Photo 36



Photo 37



Photo 38



Photo 39



Photo 40



Photo 41

Are all domestic and general construction waste produced on a daily basis cleaned and contained daily?

Yes

General waste is taken to Arandis daily.



Photo 42

Is waste buried or burned on site?

No

Are waste containers emptied regularly and removed from site to a recognised (municipal) waste disposal site?

Yes

Emptied once a week (or as necessary) at Arandis.



Photo 43

Is recyclable waste taken to the nearest recycling depot?

Yes

General waste is taken to Arandis on a daily basis and the recyclable waste taken to Swakopmund weekly.



Photo 44



Photo 45



Photo 46

Are construction labourers sensitised to dispose of waste in a responsible manner and to not litter?

Yes

Housekeeping is done everyday.



Photo 47



Photo 48

HEALTH AND SAFETY

1 flagged

HIV/AIDS and TB Training

Does the contractor approach the Ministry of Health and Social Services to co-opt a health officer, to facilitate HIV/AIDS and TB education programs periodically on site during the construction phase?

NEC employees are covered by NAMED.
Ministry will become involved in 2024.

Road Safety

Are all vehicles that transport materials to and from the site, road-worthy?

Yes



Photo 49



Photo 50



Photo 51



Photo 52



Photo 53



Photo 54



Photo 55



Photo 56

Do all drivers that transport materials have a valid driver's license and adhere to all traffic rules?

Yes

List of drivers, incident register

NEC head contractor transports material to site.

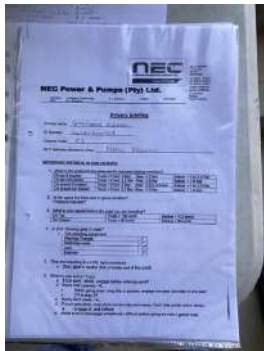


Photo 57



Photo 58

Are loads upon vehicles properly secured to avoid items falling off the vehicle?

Yes

Material arrived on site in containers.

Safety Around Excavated and Work Areas

1 flagged

Are short lengths of trenches and box areas for services or foundations excavated so as to not allow trenches to be left unattended for more than 24 hours?

Open trench, prep, add bedding layer (heat resistant), add cable, add another bedding layer and then backfill material. The process takes around a week. Trenches clearly demarcated orange mesh and sign.

The trench remains open for a couple of days.



Photo 59



Photo 60

Are all excavation works demarcated with danger tape?

Yes



Photo 61



Photo 62

Are soil and other building material stockpiles demarcated with danger tape?

Yes

Orange safety cones are used due to windy conditions



Photo 63



Photo 64



Photo 65



Photo 66

Are temporary waste stockpiles demarcated with danger tape?

N/A

Are only construction personnel allowed within these work areas?

Yes

Everyone on site is employees or contractors.

Are 2 fire extinguishers available at the fuel storage area and are they charged?

No

Only one fire extinguisher on-site



Photo 67



Photo 68

Toilets

Are there separate toilets for males and females?

Yes

4 toilets in total



Photo 69



Photo 70



Photo 71

Is there 1 toilet for every 25 females?

Yes

Currently, there is one female employee with her toilet.

Is there 1 toilet for every 50 males?

Yes

Total of 36 employees (NEC) on site. About 15 additional contractors.

Are the toilets no further than 250m from the workers?

Yes



Photo 72

Is the adequacy of the number of toilets on sites closely monitored?

Yes

General

Are there any trees or natural vegetation removed on-site to create open fires?

No

Do all employees have the needed PPE (hard hat, gloves, overalls, safety shoes and protective glasses)?

Yes



Photo 73

PPE register



Photo 74



Photo 75



Photo 76

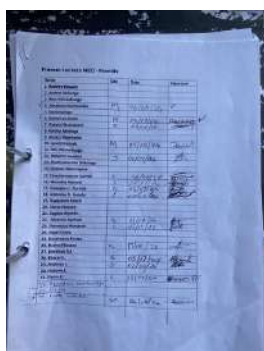


Photo 77

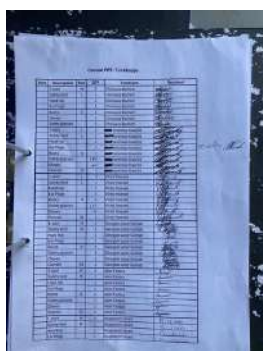


Photo 78



Photo 79

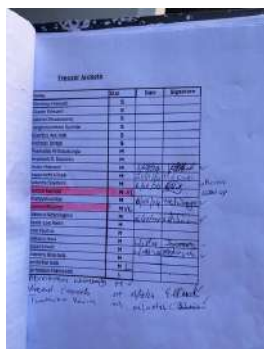


Photo 80



Photo 81

Is potable water provided to employees on site?

Yes

90 litres



Photo 82

Is there evidence that persons smoke close to fuel storage facilities or portable chemical toilets?

No



Photo 83



Photo 84

Do workers drink alcohol during work hours?

No

Alcohol test at hostel and at main gate.

Alcohol tests

Alcohol tests are conducted at the main gate.

Is unauthorized public access controlled?

Yes



Photo 85



Photo 86



Photo 87



Photo 88

DUST AND NOISE

Dust

Is a watering truck used on gravel roads with the most heavy vehicle movement, especially during dry and windy conditions?

Yes

Once a week to once every second week.

Is there adequate ventilation available in the event of sanding or grinding work?

Yes

Outside



Photo 89



Photo 90

Are stockpiles of building materials and earth material kept moist or the surfaces stabilised?

N/A

Not advisable due to cement mixing requirements.

Are the size of stockpiles of large quantities of soil, topsoil and other fine material limited?

Yes



Photo 91

Are awareness of ambient air quality and consideration regarding wind speed and direction taught for the undertaking of dust generating activities?

Yes

Dust masks provided each morning and work stopped during east weather conditions.

Training records



Photo 92

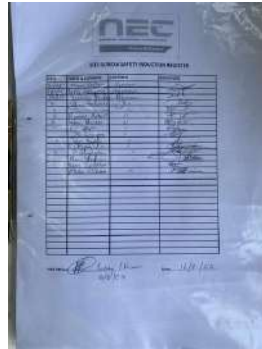


Photo 93



Photo 94

Noise

Are work hours restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles are less than 500m from residential areas?

Yes



Photo 95

Are all receptors (residents or businesses within 500m from the work areas) notified at least 2 days in advance in the event that work is necessary outside the designated working hours?

N/A

There are no neighbours. Regular communication with Trekkopje Mine.

Do vehicles have regular engine maintenance programs, to control vehicle emissions?

Yes

ENVIRONMENTAL TRAINING AND AWARENESS, ENVIRONMENTAL CONSERVATION

Environmental Induction (Training)

Is the importance of complying with the EMP explained to workers?

Yes

Registers



Photo 96



Photo 97

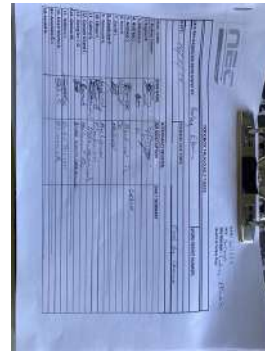


Photo 98



Photo 99

Training material containing EMP details.



Photo 100



Photo 101

Is the potential environmental impacts of construction activities discussed?

Yes

Training material containing potential environmental impacts.



Photo 102



Photo 103

Are employees trained on their roles and responsibilities, including emergency preparedness?

Yes

Is there an explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities?

Yes

Training material containing relevant mitigation measures



Photo 104

Is there an explanation of the specific mitigation measures within this EMP, especially unfamiliar provisions?

Yes

Conservation of Vegetation

Is there evidence of driving beyond demarcated areas and off established roads taking place?

No

Site is fenced off.

Is there evidence of movement of staff or visitors beyond the project site?

No

Is the collection of plants or wood for cooking beyond the project site strictly prohibited?

Yes

Conservation of Water

Is water effective equipment used?

N/A

Are all leaking fittings repaired or replaced timeously?	N/A
Are brooms used to clean floors rather than hosing them down with a pipe?	Yes
  Photo 105 Photo 106	
Are buckets or high pressure hoses used to clean areas, equipment, or vehicles instead of a regular hose pipe?	N/A
Cleaning of equipment does not take place on site.	
Are the provisions contained in the Water Management Plan implemented?	N/A
Materials Camp and Lay-down Areas	
Are the materials camp and lay-down areas a safe distance from sensitive areas?	Yes
More than 200m from sensitive areas.  Photo 107	
Are the areas designated for the proposed services infrastructure used as lay-down areas as far as possible?	N/A
Conservation of Vegetation, birds and bats	
Is construction or movement limited to the site boundaries and demarcated areas, unless approved by a specialist?	Yes
Is there appropriate stormwater management in place?	Yes
Natural drainage being used	

EMPLOYMENT/RECRUITMENT,

Legislation and Recruitment

Does the contractor adhere to the legal provisions in the Labour Act (see Table 1 in EMP) for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.) in the contract?

Yes

NIMT and Spitzkoppe conservancy are used for recruitment.

Has a recruitment process been developed?

Yes

Does the process include local authority (town council, local headman etc.) assistance with the recruitment process?

Yes

Are all sub-contractors aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process?

Yes

Does recruitment take place at construction sites?

No

Do contractors give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns?

Yes

Are the terms and conditions of their respective employment contracts (e.g., period of employment etc.) clearly explained to all jobseekers?

Yes

Are interpreters used when necessary?

N/A

STAKEHOLDER COMMUNICATION

Communication Plan

Has the contractor developed a Communication Plan?

N/A

General Communication Matters and Communication with Property Owners

Has the ER appointed an ECO to liaise between the Contractor, stakeholders, Developer, and consultants?

Yes

Has the appointed Contractor appointed a person from the construction team to take responsibility for the implementation of all provisions of this EMP?

Yes

Does the Contractor report on the status of the implementation of all provisions of the EMP during every site meeting?

Yes

Does all communication with the stakeholders take place through the ECO?

N/A

Is a copy of the EMP available at the site office and accessible to all stakeholders?

Yes



Photo 108

SOCIO-ECONOMIC AND MISCELLANEOUS

Archaeology and Heritage Resources

Has a chance find procedure been developed according to the requirements set out in the EMP?

Yes

Chance find procedure



Photo 109

Have there been any chance finds?

N/A



sorexa

Submitted to: Sorexa Sun Energy (Pty)
Ltd.

Attention: Mr Alex Delle Donne
2 Schutzen Street
PO Box 27527
Windhoek, Namibia.

REPORT:

BI-ANNUAL ENVIRONMENTAL REPORT – APRIL TO SEPTEMBER 2025

PROJECT NUMBER: ECC-43-687-REP-01-D

REPORT VERSION: REV 01

DATE: 02 DECEMBER 2025



TITLE AND APPROVAL PAGE

Project Name: Bi-annual Environmental report – April to September 2025
Client Company Name: Sorex Sun Energy (Pty) Ltd.
Client Name: Mr Alex Delle Donne
Status of Report: Final submitted to Government
Project Number: ECC-43-687-REP-01-D
Date of issue: 02 December 2025

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EXECUTIVE SUMMARY

Sorexsa Sun Energy (Sorexsa or the Proponent), a subsidiary of InnoSun Energy Holding Namibia (InnoSun), has finalised the Phase 1 construction of a 50 megawatt (MW) photovoltaic (PV) solar plant located close to Trekkopje Mine, referred to as the Project. The Project commenced in August 2023. Ondengu Construction (Ondengu) was contracted to undertake the site preparation work of Phase 1 (9.8 Megawatt (MW) and Namibian Engineering Corporation (NEC) was contracted to complete the mechanical and electrical scope of the Project.

This report presents the compliance of various site activities to the environmental management plan (EMP) requirements over a six (6) month period between April and September 2025. The report provides details of environmental performance and/or concerns that occurred during the Project implementation and notes any changes to the environmental certificate or EMP conditions, as required by the Ministry of Environment, Forestry and Tourism (MEFT) in line with the Environmental Management Act, No. 7 of 2007 and associated 2012 Regulations.

During the reporting period (April to September 2025), there were no non-conformance identified. Toward improved environmental stewardship, labelling waste bins and ordering additional fire extinguishers was recommended by InnoSun during weekly and monthly inspections.

TABLE OF CONTENTS

1	Introduction	7
1.1	Background.....	7
1.2	Purpose of the report.....	11
1.3	Environmental Compliance Consultancy	11
1.4	The proponent of the proposed project	11
2	EMP Compliance summary.....	12
2.1	April to September 2025 bi-annual reporting period.....	12
3	Environmental compliance audit	13
4	Conclusion	36

LIST OF TABLES

Table 1 – Proponent’s details.....	11
Table 2 - EMP compliance audit	13

LIST OF FIGURES

Figure 1 – Sorex Sun Energy 50 MW solar power plant location	8
Figure 2 - Phase 1 of the Trekkopje PV plant.....	9
Figure 3 - Sensitive vegetation and lithops in relation to the total 150 hectare (ha) site area	10

APPENDICES

Appendix A – Environmental management plan	37
Appendix B – Environmental clearance certificate	38

ABBREVIATIONS

Abbreviation	Description
AIDS	acquired immunodeficiency syndrome
ECC	Environmental Compliance Consultancy (Pty) Ltd
ECO	environmental control officer
ESIA	environmental and social impact assessment
EMP	environmental management plan
ER	employee respective
GPS	global positioning system
ha	hectare
HIV	human immunodeficiency virus
InnoSun	InnoSun Energy Holding Namibia (Pty) Ltd
kV	kilovolt
MEFT	Ministry of Environment, Forestry and Tourism
MHSS	Ministry of Health and Social Services
m	metre
MSDS	material safety data sheet
MW	megawatt
NHC	National Heritage Council
NEC	Namibian Engineering Corporation
O&M	operations and maintenance team
PPE	personal protective equipment
PV	photovoltaic
Sorex/Proponent	Sorex Sun Energy (Pty) Ltd
TB	tuberculosis

1 INTRODUCTION

1.1 BACKGROUND

Sorex Sun Energy (Sorex or the Proponent), a subsidiary of InnoSun Energy Holding Namibia (InnoSun), contracted Ondengu Construction (Ondengu) for the site preparation work, and Namibian Engineering Corporation (NEC) for the mechanical and electrical installation, for the Phase 1 development of a 50 megawatt (MW) photovoltaic (PV) solar plant located close to Trekkopje Mine, Erongo Region (Figure 1). Phase 1 will occupy ~20 ha, as shown in Figure 2, with a total proposed Project area footprint of ~150 ha for the 50 MW solar plant development (Figure 3).

Activities associated with the construction phase of the solar plant trigger the Environmental Management Act, No. 7 of 2007 and specifically listed activities within the Act's associated Regulations. For this reason, an environmental management plan (EMP), with numerous compliance criteria, were developed to support the issuance of the environmental clearance certificate (ECC-220030) (Appendix B). It is thus a legal requirement for all contractors involved in the Project to comply with the EMP criteria as listed in Appendix A and Appendix B. The Project is closely located to a sensitive area where lithops can be found. Lithops are a protected plant species that are very difficult to see in the field. Due to these factors, it is the responsibility of the Proponent to ensure that construction activities are kept at a safe distance to avoid any damage (Figure 3).

Listed below are the main Project components:

- Pile foundations;
- Solar panels and support structures;
- Inverters and step-up transformers; and
- 33 kilovolt (kV) underground cable.

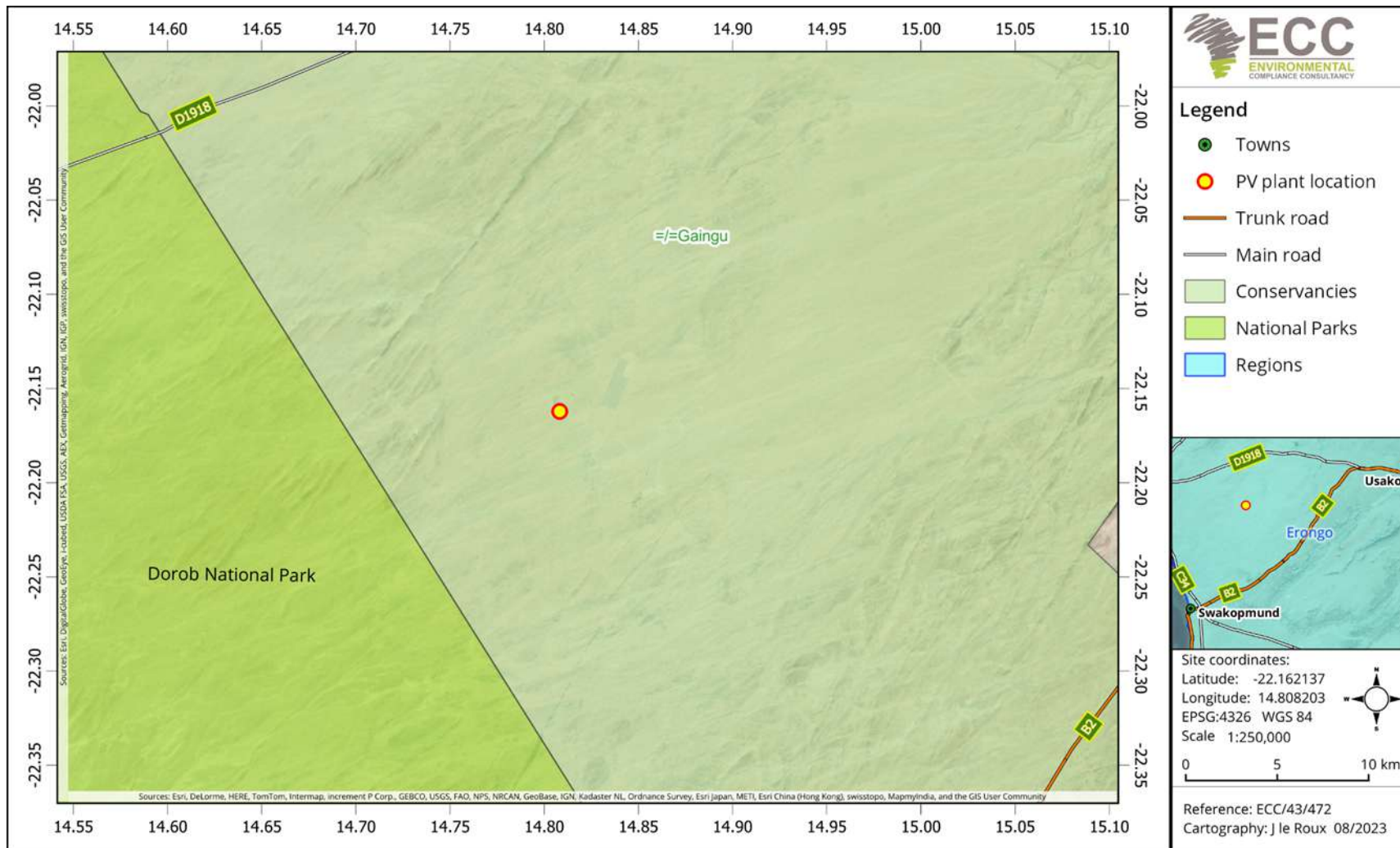


Figure 1 – Sorexsa 50 MW solar power plant location

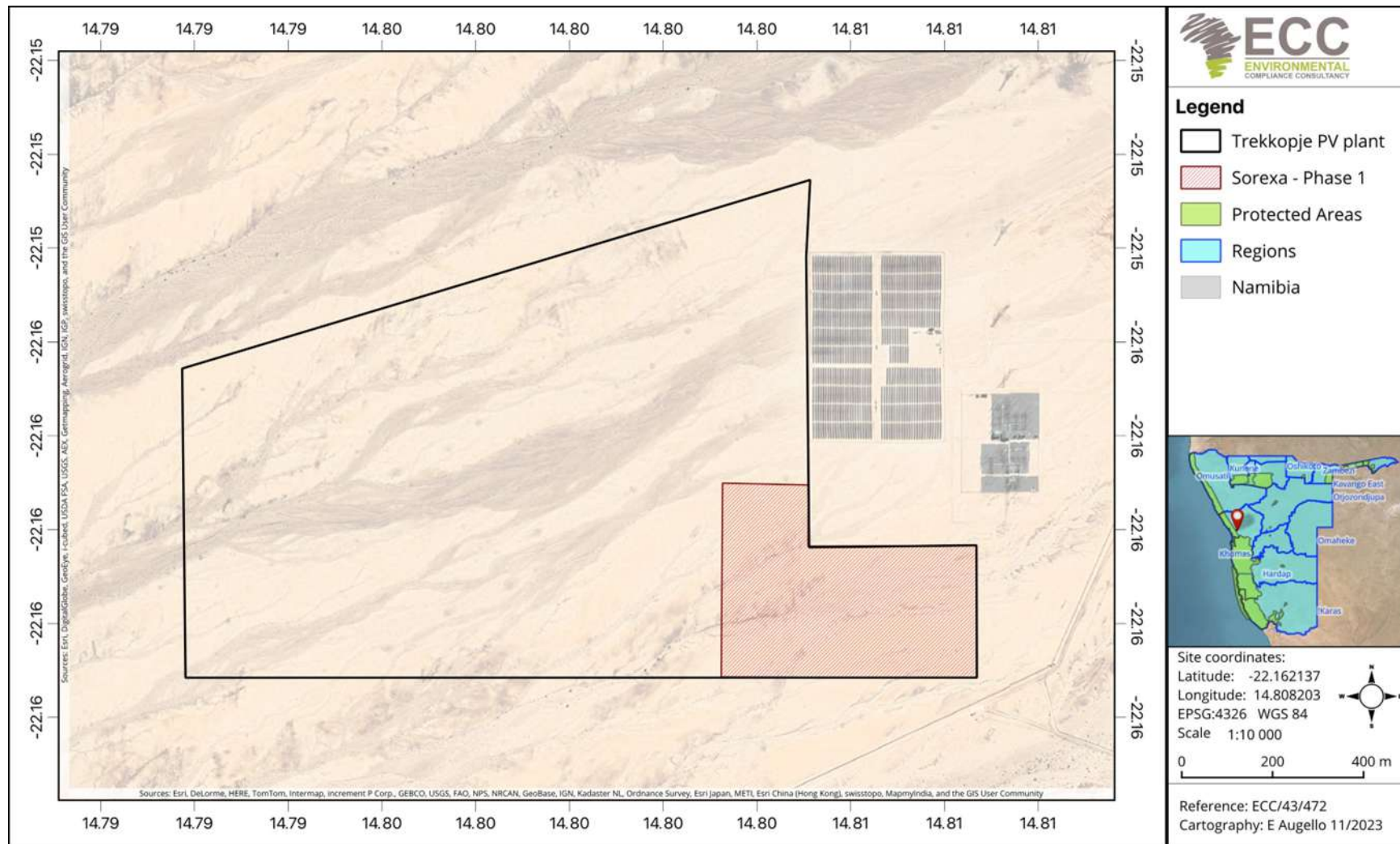


Figure 2 - Phase 1 layout of the Trekkopje PV plant

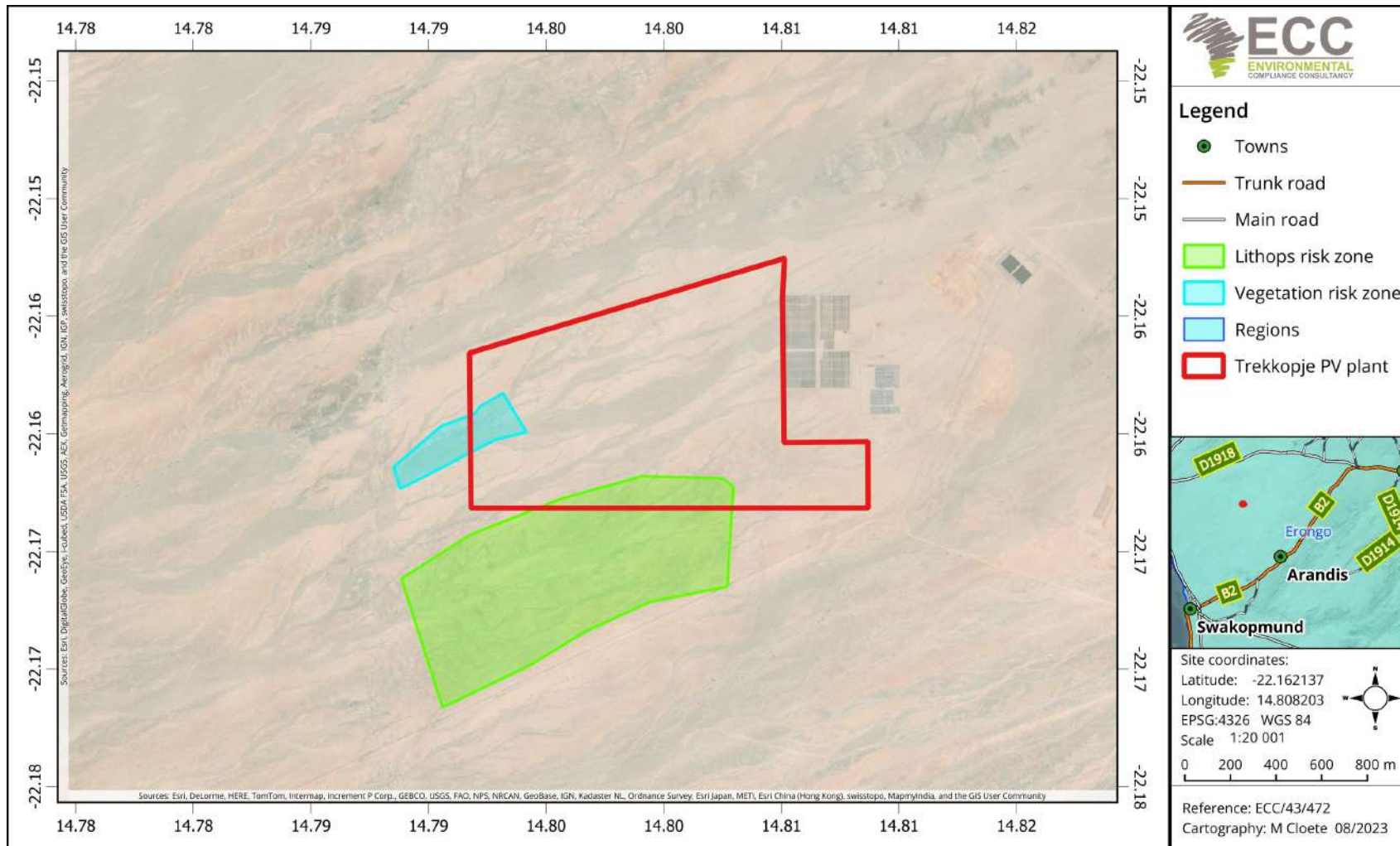


Figure 3 - Sensitive vegetation and lithops in relation to the total 150 hectare (ha) site area

1.2 PURPOSE OF THE REPORT

The purpose of this report is to provide a six (6) monthly assessment (bi-annual) of the implementation of the site environmental management plan (EMP) compliance requirements, to report on environmental performance and/or concerns that occurred during the Project implementation and to note any changes to the environmental certificate or EMP conditions. This is in line with the approved environmental clearance certificate reporting requirements, as required by MEFT in line with the Environmental Management Act No. 7 of 2007 and associated 2012 Regulations legal requirements.

This bi-annual report summarises the findings and observations based on activities and inspections conducted by InnoSun, contracted by Sorexa Sun Energy between April to September 2025. The desktop audit conducted was based on the main criteria of the EMP, which include:

1. Legal compliance;
2. Working arrangements;
3. Communication and training;
4. Reporting, compliance and enforcement;
5. Environmental and social management; and
6. Environmental aspects and potential impacts.

1.3 ENVIRONMENTAL COMPLIANCE CONSULTANCY

Sorexa Sun Energy (Pty) Ltd has appointed Environmental Compliance Consultancy (Pty) Ltd (ECC), for the provision of environmental control officer (ECO) services for the duration of the Project.

1.4 THE PROPONENT OF THE PROPOSED PROJECT

Sorexa Sun Energy (Pty) Ltd is the Proponent for the Project. The Proponent's contact information can be found Table 1.

Table 1 – Proponent's details

Company Representative:	Contact Details:
Mr Alex Delle Donne Senior Manager: Development & Commercial	Innosun Energy Holdings (Pty) Ltd.: PO Box 27527, Windhoek info@innovent.fr +264 (61) 254 700

2 EMP COMPLIANCE SUMMARY

2.1 APRIL TO SEPTEMBER 2025 BI-ANNUAL REPORTING PERIOD

Construction of the PV solar power plant was officially completed in August 2025, after which operations activities started. Sorexa employed Innosun to conduct weekly inspections of the solar power plant. The following findings and observations have relevance:

- Construction material and rubble previously identified was removed from;
- Weekly inspections are conducted by the operations and maintenance (O&M) team, along with monthly inspections by the asset management team;
- A recommendation to increase the number of fire extinguishers was made by the asset management team and during previous audits conducted by ECC;
- During construction, recyclable waste was transported to Swakopmund. This is no longer done; instead, all waste is disposed of at the Trekkopje Uranium Mine skips during the weekly O&M team inspections; and
- Measures put in place to control erosion do not reflect in the inspection checklist.

It's recommended to review the weekly and monthly inspection checklists. Currently, it is deemed to be generic in nature and lacks detail of the requirements set out in the EMP.

3 ENVIRONMENTAL COMPLIANCE AUDIT

This section (Table 2) provides an overview of the EMP requirements as prescribed in the approved EMP for the solar power plant. No non-compliances were reported for the period under review.

Table 2 - EMP compliance audit

Aspect	Management requirements	Compliance	Comments
Planning and design phase			
Cleaning of PV tables	- Investigations regarding water conserving designs should be carried out and consider as a minimum the following alternative/supplementary cleaning methods: - Options for using recycled water; - Use of industrial leaf blowers; - Use of self-cleaning methods; - Use of electrostatic charge to repel dust and force it to the edges of the panels; - Use of vibrations to shake dust off panels. - The tarring of service roads should be considered as an additional dust suppression method. - Vegetation on site is very sparse. Annual grasses should be kept intact, as this will assist in lowering dust on site.	- Compliant	- The Project progressed from construction to operational phase in August 2025. - Cleaning of PV panels is conducted using a pressure pump with water supplied by the Trekkopje Uranium Mine. - Recycling of water does not take place. - It's recommended to consider recycling water used on site to reduce the amount of water used throughout the operational phase or any other methods to clean the panels without using water.

Aspect	Management requirements	Compliance	Comments
Borrow pit investigation	- Borrow pit investigations need to include environmental considerations and requirements: - As first option investigate/explore the use of local building sand suppliers to supply the project's building sand requirements. - Ensure that all borrow pits utilised, commercial or private, have environmental clearance and Environmental Management Plans in place, which are being implemented. - Avoid sensitive areas (e.g. areas with high biodiversity, protected archaeological sites, rivers or drainage lines).	Not applicable	Borrow pits were not required during the construction phase and will not be required for the operation phase.
Erosion and preservation of gypsum crust	- Consideration should be given to the erosion control design. The existing drainage lines should be kept intact as far as possible, using natural methods for embankments, water flow diversion such as gabions, only where necessary. The design needs to consider the following: - The operations of the construction team need to be organised in such a way that the sensitive gypsum crust in the area is avoided and that the area of impact is limited as far as possible.	- Compliant	- Only designated roads were developed and used to prevent damage to the gypsum crust. - The area itself was void of vegetation, not including surrounding spaces. - Sorex employed InnoSun to conduct weekly inspections. The inspection checklist should be reviewed to include erosion control monitoring.

Aspect	Management requirements	Compliance	Comments
	No mechanical equipment will be allowed to remove vegetation on site. All vegetation clearance works will be done manually.		
Construction tender preparation phase management requirements			
EMP Implementation	Sorex needs to appoint an employer's representative (ER) to act as the Employer's on-site implementing agent. This person will be responsible to ensure that OPE's responsibilities are executed in compliance with relevant legislation and this EMP.	- Compliant	This function was fulfilled by the main contractor on site (NEC) during phase 1 of the Project.
Workforce accommodation	Consideration should be given to the accommodation of the workforce, which will not in Arandis (prohibited on site). It is preferred that workers from Arandis be appointed who are already residing there. For those not from Arandis, consultation is to take place with the Arandis Town Council to find suitable accommodation or to create a temporary site with suitable infrastructure for this purpose.	- Compliant	- During the construction phase, the Proponent made every effort to make use of local labour. - Permanent structures were not erected for accommodation purposes. When required, tents were set up and removed once construction was completed.
Vegetation study	Employ a vegetation specialist to identify any potential plants of conservation concern in the areas indicated on the map below (Figure 2). The green zone could be used on condition that a vegetation specialist investigates the occurrence of <i>Lithops</i> species and provides	- Compliant	A vegetation specialist study was conducted during the scoping phase. Since the start and completion of the construction phase, personnel

Aspect	Management requirements	Compliance	Comments
	recommendations of how they should be preserved/removed prior to construction. The Blue area is to remain free of development, since it is also an important drainage line.		and contractors have not disturbed the areas. - The Proponent shall continue to ensure that mitigation measures are in place as per the EMP for operations.
EMP implementation	- Relevant sections of this EMP should be included in the tender documents for all development so that tenderers can make provision for the implementation of the EMP.	- Compliant	- This was done for construction. - The Proponent shall continue to ensure that mitigation measures are in place as per the EMP for operations during the operational phase.
Financial provision	- Financial provision for the compilation of a waste management plan should be included as a cost item within tenders concerning the operation and maintenance of service infrastructure. o Financial provision for topsoil management and the rehabilitation of borrow pits should be included as a cost item within construction tender documents. o Financial provision for the co-opting of a health officer from the Ministry of Health and Social Services (MHSS) to facilitate human immunodeficiency virus, acquired immunodeficiency (HIV/AIDS) and	- Compliant	- Borrow pits were not needed during the construction phase therefore, rehabilitation was not required. - MHSS was contacted multiple times regarding HIV/AIDS and TB training, but MHSS never provided the training. Alternative organisations should be contacted to provide the training.

Aspect	Management requirements	Compliance	Comments
	tuberculosis (TB) education programmes periodically on-site during the construction phase should be included as a cost item within construction tender documents. - Financial provision for the facilitation of an induction programme for both senior, casual construction personnel as well as subcontractors and associated personnel should be included as a cost item within tenders concerning the construction and/or maintenance of services infrastructure. - Financial provision for the implementation of a labour intensive project should be made in the tender documents. - Financial provision for the accommodation of the workforce in Arandis, for those not accommodated there, and for the provision of meals and cooking facilities (no wood is to be removed from site) on site. - Financial provision for the drafting of a communication plan should be included as a cost item within construction tender documents.		
Recruitment	Provisions designed to maximise the use of local labour should be included within tenders concerning the construction and/or maintenance of services infrastructure.	Compliant	- All tenders maximised the use of local labour. - Prioritising gender equality was promoted and women were

Aspect	Management requirements	Compliance	Comments
	- A provision stating that all unskilled labour should be sourced from local communities should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Specific recruitment procedures ensuring local firms receive preference during tender adjudication should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Provisions promoting gender equality pertaining to recruitment should be included within tenders concerning the construction and/or maintenance of services infrastructure. - Women should be given preference for jobs, which are less toil intensive.		employed in less labour-intensive positions.
Waste management			
Waste management plan	- The contractor should compile a waste management plan which should address as a minimum the mitigation measures included below. - “Waste” is defined as any matter, whether gaseous, liquid or solid or any combination thereof, which is an undesirable or superfluous by-product, emission, residue or remainder of any process or activity.	- Compliant	- During construction, waste was removed daily. As construction was completed, there is less activity and less waste produced therefore, waste is removed to Trekkopje Uranium Mine skip. - Waste is removed by the O&M team during inspections.

Aspect	Management requirements	Compliance	Comments
Hazardous waste	- All heavy construction vehicles and equipment on site should be provided with a drip tray. - o Drip trays are to be transported with vehicles wherever they go. - o Drip trays should be cleaned daily and spillage handled, stored and disposed of as hazardous waste. - All heavy construction vehicles should be maintained regularly to prevent oil leakages. - Maintenance and washing of construction vehicles should be take place only at a designated workshop area. - o The workshop area should be lined with concrete. - o The workshop should be contoured so that run-off from the servicing and washing of vehicles and equipment drains into an oil-water separator, silt trap or lined pit (which should also be installed). - Spilled concrete (wet or dry) should be treated as hazardous waste and disposed of by the end of each day in the appropriate hazardous waste containers. - All hazardous substances (e.g. fuel etc.) or chemicals should be stored temporarily in labelled, safe and sealable containers at a	- Compliant	- Lining was used to prevent spills and leaks form contaminating soil. All contaminated soil was removed from site during rehabilitation after construction was completed. - Heavy construction vehicles and and equipment have been removed from site.

Aspect	Management requirements	Compliance	Comments
	specific location on an impermeable surface, which is bunded. The bunded area should be able to contain 1.5 times the volume of the hazardous material to be stored in the bunded area. - Battery systems should be sealed and not opened or serviced on site.		
Sewage and grey water	- Do not allow sewage (back water) to be discharged directly onto open soil along drainage lines or any unspecified area. - All sewage must be removed regularly and disposed of at a recognised (municipal) sewage treatment facility. - The water collected from equipment cleaning areas (grey water), should not be left standing for long periods of time as this promotes parasite and bacterial proliferation. Grey water should, if practicable, be recycled: - o Used for dust suppression; and - o Used to clean equipment. - If grey water will not be recycled it should be removed along with the black water on a regular basis.	- Compliant	- Sewage discharge (spills) has not occurred during construction or operations. The mobile toilets were cleaned twice a week to prevent this and spread of disease. Septic tanks are approximately cleaned every 6 weeks by Elite services.
General waste	- The construction site should be kept tidy at all times. All domestic and general construction waste produced on a daily basis should be cleaned and contained daily.	- Partially compliant	- Constructors practised good housekeeping, preventing litter. - No evidence of waste burning was observed during the

Aspect	Management requirements	Compliance	Comments
	- No waste may be burned. - Waste containers (bins) should be emptied regularly and removed from site to a recognised (municipality) waste disposal site. All recyclable waste needs to be taken to the nearest cycling depot. - A sufficient number of separate waste containers for hazardous and domestic/general waste must be provided on site. These should be clearly marked as such. - Construction labourers should be sensitised to dispose of waste in a responsible manner and not to litter. - No waste may remain on site after the completion of the Project.		construction phase or the Project. - Waste bins are not labelled according to the waste separation requirements in the EMP.
Borrow pits			
Topsoil	- The contractor should adhere to prescribed measures emanating from the borrow-pit investigation and the design for excavations and disposal of spoil material.	Not applicable	Borrow pits were not created during the construction phase.
Rehabilitation	- Upon completion of the construction phase, consultations should be held with the local community regarding the post-construction use of the borrow pit(s). - In the event that no post-construction uses are requested, all borrow pits need to be rehabilitated as follows:	Not applicable	Borrow pits were not created during the construction period and therefore rehabilitation is not required.

Aspect	Management requirements	Compliance	Comments
	○ Borrow pits may only be backfilled with clean or inert fill. No material of hazardous nature (e.g. sand removed with an oil spill) may be dumped as backfill. ○ Rehabilitated borrow pits need to match the contours of the existing landscape. ○ Take note of drainage channels in the vicinity of the borrow pit. The rehabilitated area should not be higher (or lower) than a drainage channel. This ensures the efficiency of revegetation and reduces the chances of potential erosion. ○ Topsoil is to be spread across borrow pit areas evenly. ○ Deep ripping is required, not just simple scarification, so as to enable rip lines to hold water after heavy rainfall. ○ Ripping should be done along contour lines, not up and down a slope, which could lead to enhanced erosion. ○ Rehabilitated borrow pits need to remain fenced-off after they have		

Aspect	Management requirements	Compliance	Comments
	been decommissioned to prevent livestock from removing the newly established vegetation on the area.		
Health and safety			
HIV/AIDS and TB training	The contractor should approach the Ministry of Health and Social Services to co-opt a health officer to facilitate HIV/AIDS and TB education programmes periodically on site during the construction phase.	N/A	- A meeting was arranged however, the MHSS has not conducted a site visit during the construction phase of the Project. - This should be revisited for operations. If the Ministry is not available, other sources of training should be considered
Road safety	- Demarcate roads clearly. - Provide warning signage where appropriate. - Off-road driving should not be allowed. - All vehicles that transport materials to and from the site must be road-worthy. - Drivers that transport materials should have a valid driver's license and should adhere to all traffic rules. - Loads upon vehicles should be properly secured to avoid items falling off the vehicle.	Compliant	- Roads are demarcated to ensure off-road driving does not take place. - All vehicles were roadworthy and drivers had valid driver's licences.
Safety around excavated and work areas	Excavations should be left open for an absolute minimum time.	Compliant	Excavation activities are completed and no longer applicable.

Aspect	Management requirements	Compliance	Comments
	- Excavate short lengths of trenches and box areas for services or foundations in such a way that the trench will not be left unattended for more than 24 hours. - Demarcate the following areas with danger tape: - o All excavation works; - o Soil and other building material stockpiles; and - o Temporary waste stockpiles - Provide additional warning signage in areas of movement and in “no personnel” areas where workers are not active. - Borrow pits are to be fenced off with steel wire fencing. - Work areas must be set out and isolated with danger tape on a daily basis with additional warning signage where appropriate. - All building materials and equipment are to be stored only within set-out and demarcated work areas. - Only construction personnel will be allowed within these work areas. - Two (2) fire extinguishers should be available at the fuel storage area - Comply with all mitigation measures laid out in waste management mitigation measures.		- Warning signs and demarcation of construction areas/materials were implemented. - Borrow pits were not created during the construction phase of the Project. - Building materials and equipment have been removed from site. - Construction activities were completed. - Security is available on site at all times and work in shifts. - Fire extinguishers are available, but additional fire extinguishers were recommended by InnoSun technicians based on the latest inspection. Inspections are done weekly.

Aspect	Management requirements	Compliance	Comments
Toilets	- Separate toilets should be available for men and women and should clearly be indicated as such. - Portable toilets (i.e. easily transportable) should be available at every construction site: - o 1 toilet for every 25 females. - o 1 for every 50 males. - Toilets should be no further than 250 m from any worker; - Sewage waste needs to be removed on a regular basis to an official (municipal) sewage disposal site. Alternatively, pump sewage into sealable containers and store it until it can be removed; - It is important that the adequacy of the number of toilets on sites be monitored. Construction workers should not be allowed to roam off site to relieve themselves. Should this start to happen, corrective measures are needed, including training and communication to test the adequacy of the number of and distance to toilets. Rectify as necessary; - Workers responsible for cleaning the toilets should be provided with latex gloves and masks.	- Compliant	- Portable toilets are no longer required as construction is completed. - Toilets are available for security and any visitors and InnoSun personnel conducting inspections. Bathrooms are cleaned during the inspection by the O&M team. - Sewage is removed approximately every 6 weeks by Elite Services.
Open fires	- No open fires may be made anywhere on site.	- Compliant	- No incidents of fires on site were reported.

Aspect	Management requirements	Compliance	Comments
General	- All workers should have appropriate PPE and records of the distribution of PPE should be kept/maintained; - Dust protection masks should be provided to workers if they complain about dust; - Potable water should be provided to workers; - No person should be allowed to smoke close to fuel storage facilities or portable toilets (if toilets are chemical toilets); - No workers should be allowed to drink alcohol during work hours; and - No workers should be allowed on site under the influence of alcohol.	- Compliant	- The relevant PPE is provided (dust masks, reflective vest, safety shoes, gloves and protective goggles). - Designated smoking areas are available.
Dust and noise			
Dust	- A watering truck should be used on gravel roads with the most heavy vehicle movement especially during dry and windy conditions. However, due consideration should be given to water restriction during times of drought; - Ensure that adequate ventilation is available in the event of sanding or grinding work; - Stockpiles of building materials and earth materials to be kept moist or the surfaces stabilised; - Limit the size of stockpiles of large quantities of soil, topsoil and other fine material; and	- Compliant	- Dust created by construction activities has decreased since the completion of the construction phase, as there are minimal activities except for inspections.

Aspect	Management requirements	Compliance	Comments
	– Improve awareness of ambient air quality and consideration regarding wind speed and direction when undertaking dust generating activities		
Noise	– Work hours should be restricted to between 07h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles is less than 500 m from residential area; and – In the event that work is necessary outside the designated working hours, all receptors (residents or businesses within 500 m from the work areas) will need to be notified at least 2 days in advance.	– Compliant	– During construction, activities were limited to 07:00 – 17:00. – Residential areas are not within 500 m of the solar power plant. – Construction activities are completed. The Project has moved to operations.
Environmental training and awareness			
Environmental induction	– All construction workers are to undergo environmental induction which should include as a minimum the following: ○ Explanation of the importance of complying with the EMP; ○ Discussion of the potential environmental impacts of construction activities; ○ Employees’ roles and responsibilities, including emergency preparedness; ○ Explanation of the mitigation measures that must be implemented when particular work	– Compliant	– Inductions are provided to personnel and technicians and are filed onsite. – It’s recommended that induction refreshers should be provided.

Aspect	Management requirements	Compliance	Comments
	groups carry out their respective activities; and Explanation of the specific mitigation measures within this EMP, especially unfamiliar provisions.		
Environmental conservation			
Conservation of vegetation	- No driving beyond demarcated areas and off established roads; - No movement of staff or visitors beyond the project site; - The collection of plants or wood for cooking beyond the Project site should be strictly prohibited.	- Compliant	- Driving was limited to the roads created for construction purposes. - All staff and visitors stayed within the boundaries of the Project. - There have not been instances of wood collection for cooking beyond the Project site.
Conservation of water	- Water effective equipment should be used. - All leaking fittings need to be repaired or replaced timeously; - Brooms should be used to clean floors rather than hosing them down with a pipe; - Use buckets or high-pressure hoses to clean areas, equipment or vehicles instead of a regular hose pipe.	- Compliant	The Proponent shall continue to ensure effective water use and conservation where possible.
Materials camp and lay-down areas	Suitable locations for the materials camp and lay-down areas should be identified with the	- Compliant	Material and lay down areas were limited to the fenced

Aspect	Management requirements	Compliance	Comments
	assistance of the ER and the following should be considered in selecting these sites: ○ Avoid sensitive areas; ○ The areas designated for the proposed services infrastructure should be used as far as possible; and ○ Second choice should be degraded land.		areas, not disturbing protected and sensitive vegetation areas. - Service infrastructure was limited to designated areas.
Conservation of vegetation	- No construction or movement should take place beyond the site boundaries or in the demarcated area unless by a specialist.	- Compliant	- All construction and movement took place at a safe distance from sensitive and protected vegetation zones.
Birds	- Consult an avifauna specialist for practical advice on how to protect birds from collision and electrocution on the transmission line before construction.	- Not applicable	- An avifauna study has not been conducted due to the apparent low risks. - Construction activities have been completed.
Conservation of water	- The provisions contained in the water management plan should be implemented.	- Compliant	- Water supply is connected to the water system of Trekkopje Uranium Mine. An agreement was reached regarding the amount of water required by the plant.
Employment/recruitment			

Aspect	Management requirements	Compliance	Comments
Legislation	Adhere to the legal provisions in the Labour Act for the recruitment of labour (target percentage for gender balance, optimal use of local labour and SME's etc) in the contract.	Compliant	Compliance with the requirements of the Labour Act is adhered to.
Recruitment	- The contractor should compile a document to be used as a guide for the recruitment process, which should include the following provisions as a minimum: - The local authority (town council, local headman etc.) should assist with the recruitment process. - Recruitment should not take place at construction sites; - Ensure that all sub-contractors are aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed upon process; - Contractors should give preference in terms of recruitment of sub-contractors and individual labourers to those from the project area and only then look to surrounding towns; - Clearly explain to all job-seekers the terms and conditions of their respective employment contract (e.g. period of employment etc.) – make use of interpreters when necessary.	Compliant	The Namibian Institute of Mining Technology and Spitzkoppe conservancy were used for recruitment through means of the local authority.

Aspect	Management requirements	Compliance	Comments
Stakeholder communication			
Communication plan	– The contractor should draft a communication plan, which should outline, as a minimum the following: ○ How stakeholders, who require ongoing communication for the duration of the construction period, will be identified and recorded and who will manage and update these records; ○ How these stakeholders will be consulted on an ongoing basis; and ○ Make provision for the grievance mechanisms-i.e. how concerns can/will be lodged/recorded and how feedback will be delivered as well as further steps of arbitration in the event feedback is deemed unsatisfactory.	– Compliant	– The closest receptor to the Proponent is Trekoppje Mine, with which there is direct communication.
General communication matters	– The ER should appoint an ECO to liaise between the contractor, stakeholders, developer, and consultants. The appointed contractor shall appoint a person from the construction team to take responsibility for the implementation for all provisions of this EMP. ○ The contractor shall at every site meeting report on the status of the implementation of all provisions of the EMP.	– Compliant	– ECC was the ECO for the Project during construction. Since the Project moved to operations InnoSun has been conducting weekly and monthly inspections. – A copy of the current EMP is available on site.

Aspect	Management requirements	Compliance	Comments
	○ The contractor should implement the environmental awareness training. ○ The contractor must list the stakeholders of the project and their contact details, with whom ongoing communication would be required for duration of the contract. This list, together with the communication plan must be agreed upon and given to the ER before construction commences. ○ The communication plan, once agreed upon by the developer, shall be binding. ○ All communication with the stakeholders must take place through the ECO. ○ A copy of the EMP must be available at the site office and should be accessible to all stakeholders ○ Key representatives from the above mentioned list need to be invited to attend monthly site meetings to raise any concerns and issues regarding project progress. ○ The contractor should liaise with the Developer regarding all issues related to community consultation and negotiation before construction commences. ○ A procedure should be put in place to ensure that concerns raised have been followed-up and addressed.		

Aspect	Management requirements	Compliance	Comments
	All people on the stakeholders list should be informed about the availability of the complaints register in writing by the ER prior to the commencement of construction activities.		
Communication with property owners	At the outset of the construction programme, all residents along the route will have to be informed about construction activities within the reserve in front of their property. This should be done in cooperation with the applicable constituency councillors.	Compliant	Construction activities did not take place in residential or close to residential areas.
Socio-economic and miscellaneous			
Archaeology and heritage resources	- Should a heritage site or archaeological site be uncovered or discovered during the construction phase of the Project, a “chance find” procedure should be applied in the order they appear below: - If operating machinery or equipment stop work; - Demarcate the site with danger tape; - Determine GPS (global positioning system) position if possible; - Report findings to foreman. - Action taken by foreman: - Report findings, site location and actions taken to superintendent;	Not applicable	No chance finds to date.

Aspect	Management requirements	Compliance	Comments
	○ Cease any works in immediate vicinity; - Action taken by superintendent: ○ Visit site and determine whether work can proceed without damage to findings; ○ Determine and demarcate exclusion boundary; ○ Site location and details to be added to the project's geographic information system (GIS) for field confirmation by archaeologist; - Action taken by archaeologist: ○ Inspect site and confirm addition to project GIS; ○ Advise the National Heritage Council (NHC) and request written permission to remove findings from work area; and ○ Recovery, packaging and labelling of findings for transfer to National Museum. - Should human remains be found, the following actions will be required: ○ Apply the chance find procedure as described above;		

Aspect	Management requirements	Compliance	Comments
	○ Scheduled a field inspection with an archaeologist to confirm that remains are human; ○ Advise and liaise with the NHC and Police; and ○ Remains will be recovered and removed either to the National Museum or the National Forensic Laboratory as directed.		
Decommissioning			
Dismantling of project components and associated waste	- All material produced from the dismantling of project components (which will not be sold) should be sorted into recyclable and non-recyclable material.	- Not applicable	- Decommissioning has not started as the Project has moved into the operation phase.

4 CONCLUSION

The construction phase of the Project was completed and operations commenced in August 2025. Inspections of the site are conducted weekly and monthly by InnoSun. During a site visit conducted by ECC in March 2025, the last construction material was identified and has since been removed. The next site visit will be scheduled for March 2026. It's recommended to include aspects of the EMP in the weekly and monthly inspection checklists.

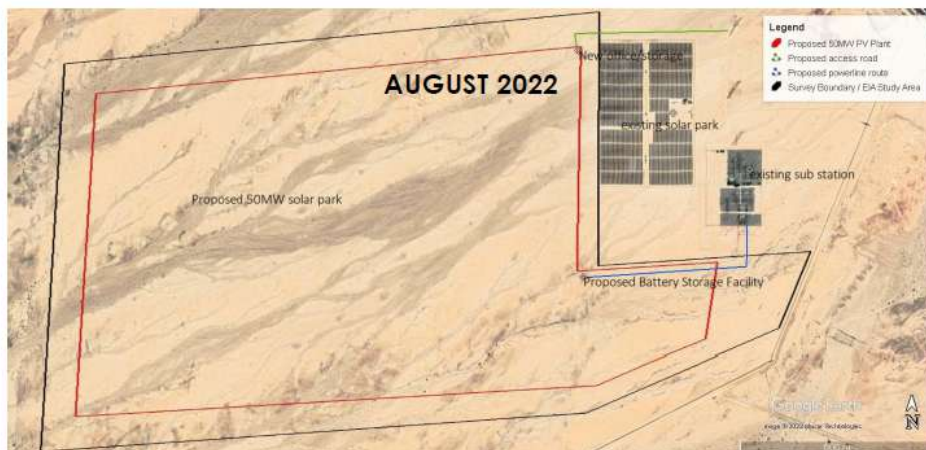
The next reporting period will be from October 2025 to March 2026, to align with the environmental clearance certificate.

APPENDIX A – ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX A

PROPOSED 50MW SOLAR PHOTOVOLTAIC PLANT ON A 150HA SITE NORTH WEST OF ARANDIS, ERONGO REGION

ENVIRONMENTAL MANAGEMENT PLAN



APPENDIX B – ENVIRONMENTAL CLEARANCE CERTIFICATE



REPUBLIC OF NAMIBIA
MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM

OFFICE OF THE ENVIRONMENTAL COMMISSIONER

ENVIRONMENTAL CLEARANCE CERTIFICATE

ISSUED

In accordance with Section 37(2) of the Environmental
Management Act (Act No. 7 of 2007)

TO

Sorexa Sun Energy (PTY) LTD
P O Box 27527, Windhoek

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY

**Proposed 50MW Photovoltaic Solar Power Plan with power line near
Trekopje, Erongo region**

Issued on the date: 2022-12-12
Expires on this date: 2025-12-12

ENVIRONMENTAL COMMISSIONER

(See conditions printed over leaf)

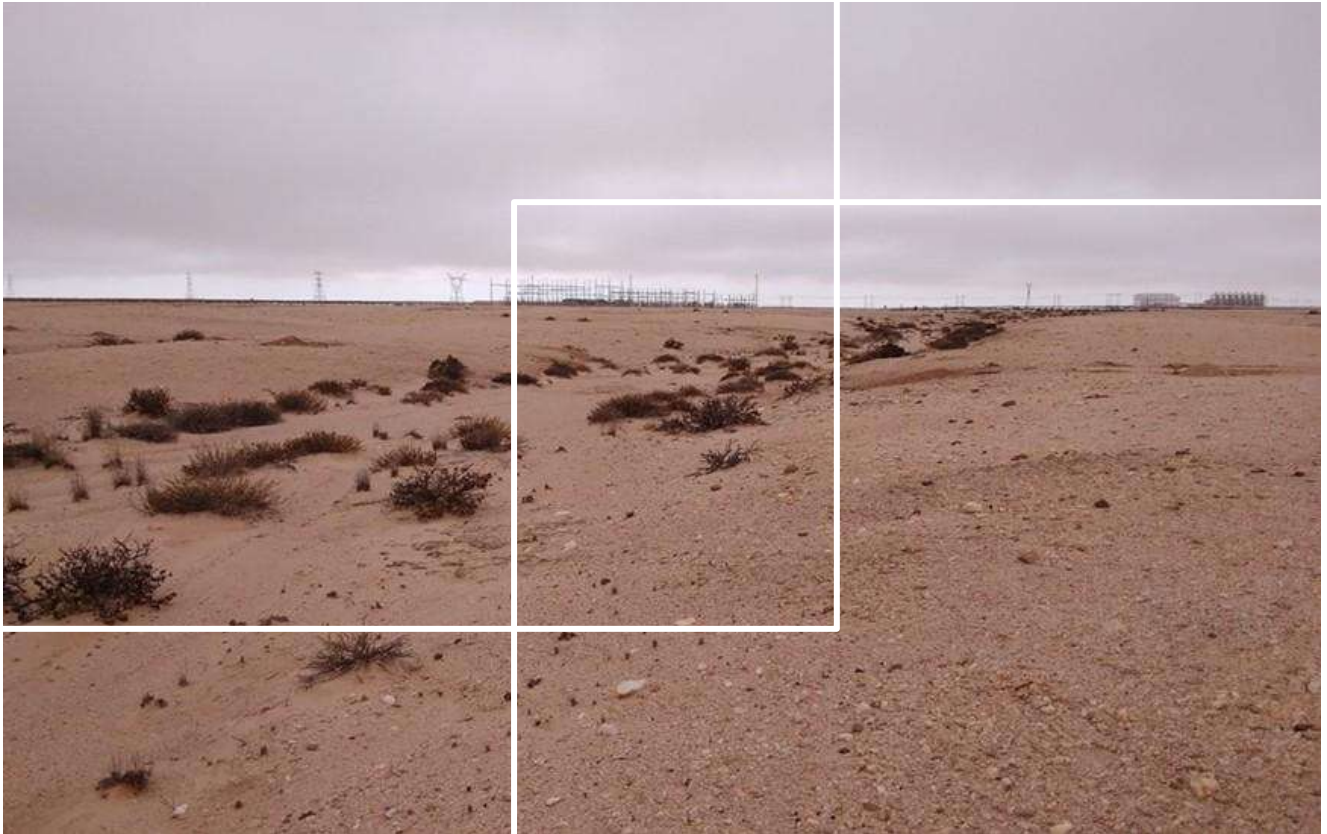
This certificate is printed without erasures or alterations

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CONDITIONS OF APPROVAL

1. This environmental clearance is valid for a period of 3 (three) years, from the date of issue unless withdrawn by this office
2. This certificate does not in any way hold the Ministry of Environment, Forestry and Tourism accountable for misleading information, nor any adverse effects that may arise from these activities. Instead, full accountability rests with the proponent and its consultants
3. This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project



Submitted to: Sorexa Sun Energy (Pty) Ltd
Attention: Mr Israel Shihepo
P.O. Box 27527
Windhoek
Namibia

REPORT:

SOLAR PHOTOVOLTAIC POWER PLANT – OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN

DOCUMENT NUMBER: ECC-43-687-REP-03-C

REPORT VERSION: REV 01

DATE: 08 JANUARY 2026



TITLE AND APPROVAL PAGE

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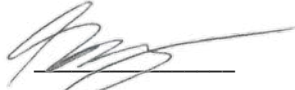
We welcome any enquiries regarding this document and its content. Please contact:



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DISCLAIMER

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TABLE OF CONTENTS

1	Introduction	7
1.1	Background	7
1.2	Purpose of the report	10
1.3	Management of this OEMP	10
1.4	Limitations, uncertainties and assumptions related to this OEMP	10
1.5	Environmental assessment practitioner	11
2	Environmental management framework.....	12
2.1	Objectives and targets.....	12
2.2	Permits, licences and relevant legal provisions.....	12
2.3	Roles and responsibilities	13
2.4	Contractors and subcontractors	15
2.5	Workforce competency	15
2.6	Employment.....	16
3	Communication and awareness	17
3.1	Internal communication.....	17
3.1.1	Training and environmental awareness	17
3.2	External communication	17
3.2.1	Environmental emergency and response.....	18
3.2.2	Complaint handling and recording.....	18
4	Reporting, compliance and enforcement.....	20
4.1	Environmental performance management	20
4.2	Operational phase: environmental inspections and compliance monitoring	20
4.3	Reporting.....	20
5	Environmental and social management.....	22
5.1	Environmental performance management	22
5.1.1	Operational phase	22
5.1.2	Decommissioning phase.....	34
6	Implementation of the OEMP	36

LIST OF TABLES

Table 1 - Relevant legislative permits, licences and consents for the Project	12
Table 2 - Roles and responsibilities	14

Table 3 - A list of emergency contact details.....	18
Table 4 - Environmental aspects, management and mitigation measures for the operational phase (including maintenance and future construction activities).....	23
Table 5 - Rehabilitation plan	35
Table 6 - Archaeological and heritage aspects.....	37

LIST OF FIGURES

Figure 1 - Sorexsa Sun Energy 50 MW solar power plant location	8
Figure 2 - Sensitive vegetation and lithops in relation to the total 150 hectare (ha) Project footprint.....	9

APPENDICES

Appendix A - Chance find procedure	37
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ABBREVIATIONS

Abbreviation	Description
BESS	battery energy storage system
ECC	Environmental Clearance Certificate
ECC	Environmental Compliance Consultancy (Pty) Ltd
ECB	Electricity Control Board
ECO	Environmental control officer
EIA	Environmental impact assessment
EMA	Environmental Management Act, No. 7 of 2007
ha	Hectare(s)
ISO	International Organization for Standardization
kV	Kilovolt
MEFT	Ministry of Environment, Forestry and Tourism
MIME	Ministry of Industries, Mines and Energy
MLIREC	Ministry of Labour, Industrial Relations and Employment Creation
MSDS	Material Safety Data Sheet
MW	Megawatt
MAFWLR	Ministry of Agriculture, Water and Land Reform
NBRI	National Botanical Research Institute
NHC	National Heritage Council
OEMP	Operational Environmental Management Plan
PPE	Personal Protective Equipment
PV	Photovoltaic
TA	Traditional Authority
Wh	watt-hour
WRMA	Water Resources Management Act, No. 11 of 2013
DWA	Department of Water Affairs
CCTV	Closed-Circuit Television

1 INTRODUCTION

1.1 BACKGROUND

Sorex Sun Energy (Sorex or the Proponent), a subsidiary of InnoSun Energy Holding Namibia (InnoSun), constructed Phase 1 (i.e. 9.8 megawatt (MW)) of the approved fifty (50) MW photovoltaic (PV) solar power plant, located close to Trekkopje Uranium Mine, Erongo Region, Namibia (Figure 1), to supply electricity through renewable energy sources. Phase 1 occupied approximately twenty (20) hectares (ha) of the total proposed 150 ha Project footprint, as shown in Figure 2. Additionally, a 5 MW/10 watt-hour (Wh) battery energy storage system (BESS) will be installed.

Activities associated with the construction and operations phase of the solar plant trigger the Environmental Management Act, No. 7 of 2007 (EMA) and specifically listed activities within the Act's associated Regulations of 2012. For this reason, an operational environmental management plan (OEMP), with numerous compliance criteria, was developed to support the renewal of the current environmental clearance certificate (ECC-220030). It is thus a legal requirement for all contractors and operational staff involved in the Project to comply with the OEMP.

The Project is closely located to a sensitive area where lithops can be found (Figure 2). Lithops are a protected plant species that is very difficult to see. Due to these factors, it is the responsibility of the Proponent as well as the contractors and subcontractors engaged in maintenance or mechanical repairs to ensure that operational and future construction activities are conducted at a safe distance to prevent any damage.

Listed below are the main Project components:

- Pile foundations;
- Solar panels and support structures;
- Inverters and step-up transformers; and
- 33 kilovolt (kV) underground cable.

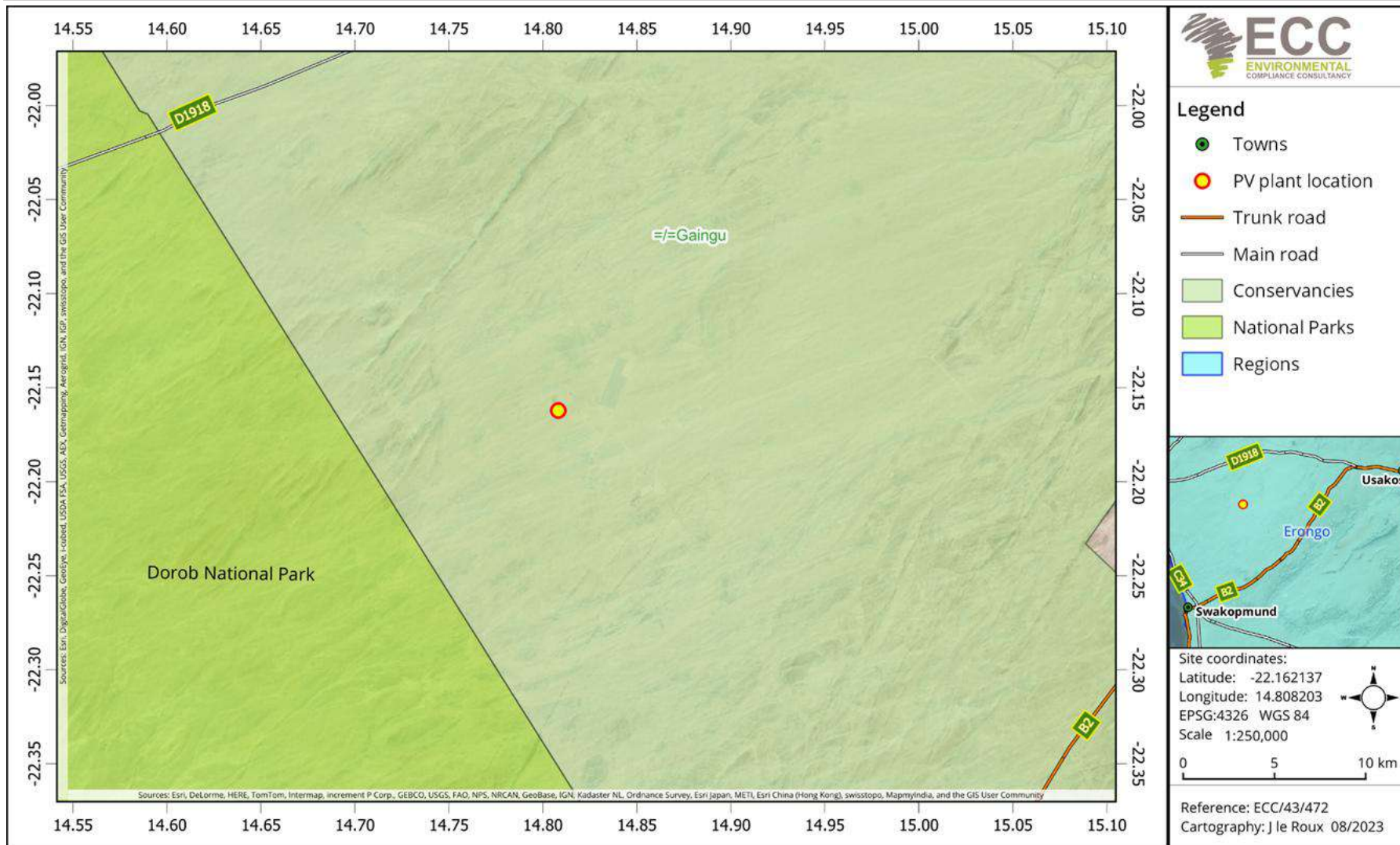


Figure 1 - Sorex Sun Energy 50 MW solar power plant location

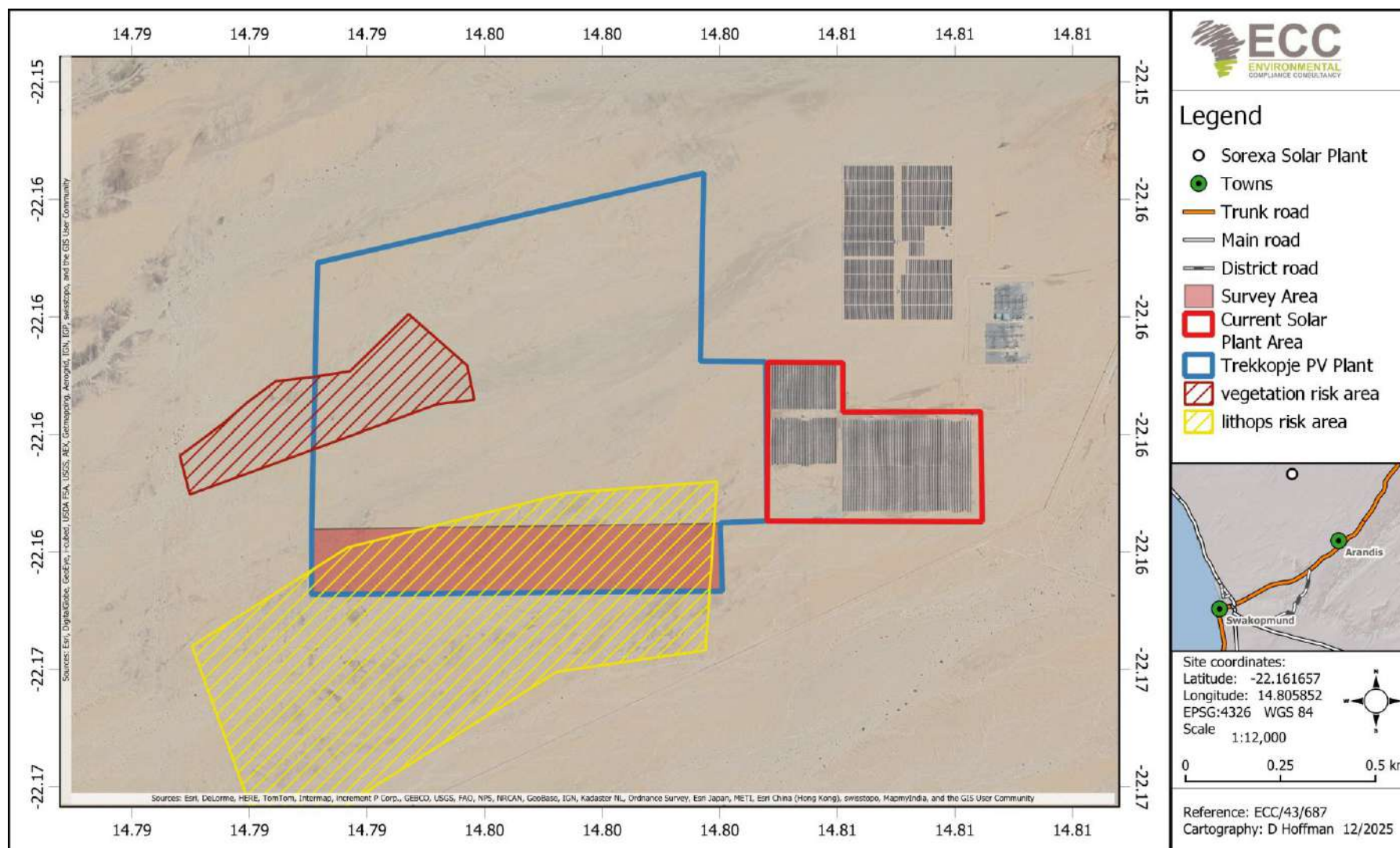


Figure 2 - Sensitive vegetation and lithops in relation to the total 150 hectare (ha) Project footprint

1.2 PURPOSE OF THE REPORT

The operational management plan (hereafter referred to as the OEMP) provides a logical framework, mitigation measures and management strategies for operations and maintenance activities associated with the Project, including any future construction phases and activities. This ensures that the potential environmental and social impacts are curbed and minimised as far as practically possible and that statutory and other legal obligations are adhered to and fulfilled. Outlined and defined in the OEMP are the protocols, procedures and roles and responsibilities to ensure that management requirements are effectively and appropriately implemented.

This OEMP is a live document and shall be reviewed at predetermined intervals and/or updated during the operational phase, when or if the scope of work alters (e.g. Project expansion), when further data or information is added or when there are legislative updates. All personnel working on the Project will be legally required to comply with the requirements set out in the final OEMP that is approved by the Ministry of Environment, Forestry and Tourism (MEFT) (competent authority).

The scope of this OEMP includes all activities associated with the operations and maintenance of the Sorexsa PV solar power plant, including future construction related activities.

1.3 MANAGEMENT OF THIS OEMP

The Proponent (Sorexsa) holds a valid environmental clearance certificate for the proposed 50 MW PV solar power plant with underground power lines/cabling. The implementation and management of this OEMP and the monitoring of compliance will be undertaken through daily duties and activities, as well as defined monthly, quarterly and annual or other periodic inspections, audits and/or monitoring surveys.

1.4 LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS RELATED TO THIS OEMP

This OEMP does not include measures for compliance with statutory occupational health and safety requirements. This is managed by the Proponent's Occupational Health and Safety Plan, which is compliant with ISO 45001 standards and therefore not in the scope of this OEMP. Where there is any conflict between the provisions of this OEMP and any contractor's obligations under their respective contracts, including statutory requirements (such as permits/licences, Project approval conditions, standards, guidelines and relevant laws), the contract should be amended, and statutory requirements are to take precedence. The information contained in this OEMP has been based on the current valid environmental clearance certificates and associated management plans. If and where operational requirements are changed, this OEMP may require updating and/or potential further assessment to be undertaken.

1.5 ENVIRONMENTAL ASSESSMENT PRACTITIONER

The report has been prepared by Environmental Compliance Consultancy (Pty) Ltd (ECC) (Reg. No. 2022/0593) on behalf of the Proponent. Authorised by ECC employees with no material interest in the report's outcome, ECC maintains independence from the Proponent and has no financial interest in the Project apart from fair remuneration for professional fees. Payment of fees is not contingent on the report's results or any government decision. ECC members or employees are

not, and do not intend to be, employed by the Proponent, nor do they hold any shareholding in the Project. Personal views expressed by the writer may not reflect ECC or its client's views. The OEMP's information is based on the best available data and professional judgment at the time of writing. However, please note that environmental conditions can change rapidly, and the accuracy, completeness or currency of the information cannot be guaranteed.

All compliance and regulatory requirements regarding this report should be forwarded by email or posted to the following address:

Environmental Compliance Consultancy (Pty) Ltd
PO Box 91193, Klein Windhoek, Namibia
Tel: +264 81 669 7608
Email: info@eccenvironmental.com

2 ENVIRONMENTAL MANAGEMENT FRAMEWORK

2.1 OBJECTIVES AND TARGETS

This OEMP provides measures, guidelines and procedures for managing and mitigating potential environmental and social impacts. The OEMP also outlines monitoring and reporting guidelines and assigns responsibilities to those carrying out management and mitigation measures, aligned with construction, operations and decommissioning activities. Environmental objectives have been developed so that the construction and operations of the solar power plant can minimise potential environmental impacts as far as reasonably practicable.

Environmental objectives for Sorex Energy are as follows:

- Zero pollution incidents;
- Minimal vegetation clearing and earthworks;
- Minimal impact on regional groundwater users;
- Manage waste efficiently and reduce the potential for environmental pollution;
- Protect local flora and fauna; and
- Use natural resources effectively and efficiently.

2.2 PERMITS, LICENCES AND RELEVANT LEGAL PROVISIONS

The relevant certificates, permits and consents required for the Project are outlined in Table 1.

Table 1 - Relevant legislative permits, licences and consents for the Project

Topic	Legislative instrument	Management requirements
Archaeology/heritage	National Heritage Act, No. 27 of 2004	All protected heritage resources (e.g. human remains, artefacts, etc.) discovered need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before they may be relocated.
Effluent discharge or Sewage Permits	Water Resources Management Act No.11 of 2013 and Water Resources Management Regulations No. 269 of 2023.	Licences related to the sewage systems or effluent discharge should be obtained (where applicable). Part 13 (sections 68 - 72) of the Water Resources Management Act No.11 of 2013 and Part 8 (Sections 66 - 68) of the Water Resources Management Regulations (No. 269 of 2023).
Electricity	Electricity Act, No.4 of 2007	A licence is required for the generation and trading of electricity from the Electricity Control Board (ECB).

Topic	Legislative instrument	Management requirements
Environmental	Environmental Management Act, 2007 (Act No. 7 of 2007) and the EIA Regulations GN 57/2007 (GG 3812)	The amendment, transfer or renewal of the environmental clearance certificate.
Forestry	Forest Act, No. 12 of 2001 and the Nature Conservation Ordinance No. 4 of 1975	Protected tree species and any vegetation within 100 m of a watercourse may not be removed without a permit. A harvesting permit is required if wood is to be collected (harvested) for use as fuel.
Labour	Labour Act, No. 11 of 2007 and Health and Safety Regulations (HSR) GN 156/1997 (GG 1617)	Adhere to all applicable provisions of the Labour Act and the Health and Safety regulations.
Land lease	Communal Land Reform Act (2003)	A Lease Agreement is required to be signed with the relevant Traditional Authority (TA) and conservancy management committee.

2.3 ROLES AND RESPONSIBILITIES

The responsibility for implementing the OEMP ultimately lies with Sorex Energy. The implementation of the OEMP requires the involvement of several stakeholders during the operational, construction and decommissioning phases. The Proponent will ensure a competent team is in place to oversee and undertake operational activities, which comprises of contractors and their subcontractors.

The Proponent shall be responsible for:

- Ensuring that all members of the operational team and contractors comply with the procedures set out in this OEMP;
- Ensuring that all persons are provided with sufficient training, supervision and instruction to fulfil this requirement;
- Ensuring that any persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood; and
- Contractors shall be responsible for ensuring and demonstrating that all personnel employed by them are compliant with this OEMP and meet the responsibilities listed above.

Table 2 lists the roles and responsibilities allocated to different management levels in the company and specific personnel.

Table 2 - Roles and responsibilities

Role	Responsibility
The Proponent (Sorex)	- Responsible for overall safe and efficient solar plant operations; - Ensure implementation of the operation OEMP and all licence/permit conditions (environmental clearance certificate, generation licence, land-use agreements, etc.) with assistance from the ECO; - Oversee performance monitoring and reporting (generation data, availability and downtime); - Coordinate with NamPower/ErongoRED or buyers on dispatch, outages and grid interactions; and - Lead emergency response and ensure drills and documentation are up to date.
Operations, maintenance and asset management team	- Ensure adequate housekeeping and that facilities on site are hygienic and in good working condition; - Ensure solar panels are cleaned when required; - Ensure alarms, switch gears and transformers are working; - Record waste removal from the site; and - Record environmental incidents.
Environmental control officer (ECO)	- Implement and monitor compliance with OEMP commitments and environmental procedures. - Conduct environmental monitoring (waste, water, dust, noise, biodiversity, occupational environment); - Inspect site for compliance (spill prevention, waste segregation, housekeeping, hazardous storage, etc). - Compile monthly/quarterly/annual environmental reports for the submission to the Proponent, to the competent authority (MEFT) and for the environmental clearance certificate renewal process. - Liaise with MEFT and local authorities on environmental issues. - Maintain records (MSDSs, training logs, waste manifests, incident reports); - Provide expert advice to the Project team on environmental matters.
Security personnel	- Monitor and control site access (visitors, contractors, deliveries etc.); - Perform site patrols and report suspicious activity; - Ensure perimeter fencing, closed circuit television (CCTV), and alarm systems remain operational; - Maintain visitor and contractor access records; and

Role	Responsibility
	- Adhere to the requirements and regulations outlined in this OEMP.

2.4 CONTRACTORS AND SUBCONTRACTORS

Contractors and their subcontractors contracted by the Proponent for any construction, mechanical or maintenance repairs during the operational phase and future construction must be compliant with this OEMP and shall be responsible for the following:

- Undertake activities in accordance with this OEMP, as well as relevant policies, procedures, management plans, method statements, licences and contract obligations;
- Implement effective environmental and safety management measures;
- Adopt environmental best practices to ensure the preservation of the receiving environment and minimise potential environmental impacts to the greatest extent possible;
- Report environmental issues, including actual or potential environmental incidents and aspects;
- Cooperate fully with environmental inspections, audits and monitoring activities conducted by the maintenance and operational team of InnoSun or an appointed company;
- Ensure that employees under their employment are made aware of, and comply with the requirements of the OEMP; and
- Ensure that appropriate corrective or remedial actions are implemented to address all environmental aspects and incidents. Lessons learnt should always be documented for future reference and continuous improvement.

2.5 WORKFORCE COMPETENCY

All personnel shall be competent to perform tasks that have the potential to cause an environmental impact. The Proponent must comply with the Republic of Namibia's Regulations for Labour, Health and Safety and any subsequent amendments to these Regulations. The following conditions, amongst others must be complied with:

- All personnel shall be provided with the necessary and appropriate personal protective equipment (PPE) (i.e. overalls, safety boots and proper uniform);
- Should foreign workers be hired, the Proponent shall ensure that they have valid work permit(s) at all times;
- Regular refresher training courses shall be conducted to reinforce health and safety and environmental responsibilities; and
- All personnel, contractors and sub-contractors shall undergo an induction course covering environmental awareness, occupational safety procedures and site-specific risks and impacts before commencing with work.

2.6 EMPLOYMENT

The Proponent should compile a document to be used as a guide for recruitment, to include the following:

- Ensure that their recruitment mechanisms prioritise local people;
- Job adverts must clearly state the skills and required qualifications;
- The maximum expected duration of the job, whether temporary or permanent, shall be indicated;
- Foreign workers with no proof of permanent legal residence and work permit shall not be hired; and
- All employees hired must be issued valid employment contracts specifying their position, assigned duties and hourly remuneration (in accordance with the wage standards stipulated in the Wage Order Setting the National Minimum Wage for Employees (Government Notice 218 of 2024)).

3 COMMUNICATION AND AWARENESS

To ensure potential environmental impacts are minimised, it is important that personnel are appropriately informed and briefed on how to properly implement the OEMP. It is also important that regular communication is maintained with stakeholders and regulatory authorities. This section outlines the framework for communication related to the implementation of the commitments that are specified in this OEMP.

3.1 INTERNAL COMMUNICATION

The maintenance and management teams shall communicate site-wide environmental issues through the following means (as and when required):

- Site notices;
- WhatsApp group (or preferred social communication mobile application tool);
- Daily, weekly and monthly briefings;
- Instructions on incident response procedures; and
- Briefing on key environmental issues.

This OEMP shall be distributed to operation and maintenance teams, asset management and on-site personnel (including contractors and subcontractors, when hired for any maintenance, mechanical repairs, etc.) to ensure that the environmental requirements are adequately communicated. The key activities and environmentally and socially sensitive operations must be highlighted clearly to workers and contractors, in English and their local language, where required.

Effective communication must be maintained and should include procedures for receiving, logging and resolution of complaints, the non-conformances with this OEMP observed and remediation/corrective actions required.

3.1.1 TRAINING AND ENVIRONMENTAL AWARENESS

Personnel must be competent to perform tasks to avoid potential negative environmental impact. Competence is defined in terms of appropriate education, training and work experience. When it has been determined that certain skills are lacking, training and refresher courses must be offered to the workforce. The management teams must ensure records of these training sessions are always kept on-site and filed.

3.2 EXTERNAL COMMUNICATION

The asset management team shall represent the Proponent and shall liaise with external regulatory authorities, surrounding communities and community representatives. This will ensure good working relations with the stakeholders and compliance with all relevant policies, regulations, approved licences, certificates and permits.

3.2.1 ENVIRONMENTAL EMERGENCY AND RESPONSE

An emergency is any abnormal event, which demands immediate attention. It is any unplanned event, which results in the temporary loss of management control at a site, but where functional resources can manage the response. An emergency response plan must be in place by the Proponent that manages the response in relation to emergencies, including environmental emergencies. Table 3 provides the emergency response numbers for Arandis and Swakopmund.

Table 3 - A list of emergency contact details

Town	Water and sewage	Ambulance	Police	Fire brigade
Arandis	+264 (64) 51-0171	+264 (64) 51-0022	+264 (64) 1 0111	+264 (64) 51-0171
Swakopmund	+264 (64) 410 4279 +264 (0) 81 128 4998 (after hours)	+264 (64) 40 5731	+264 (64) 1 0111	+264 (64) 410 4111

Should there be large-scale spills (i.e. >200 litres) of fuel, wastewater, domestic effluent or other contaminated fluids with the potential to adversely impact the environment, including spills into any river course or tributary, the relevant authorities must be notified. This includes informing the Ministry of Industries, Mines and Energy (MIME) by completing form PP/11 (telephone: +264 61 284 8111), the Offices of the Ministry of Environment, Forestry and Tourism (MEFT; +264 61 284 2111), the Ministry of Agriculture, Water and Land Reform (MAFWLR; +264 61 205 3021), and the Department of Water Affairs (DWA), which must be promptly informed in the event of large-scale domestic effluent spills into any river course or tributary river.

3.2.2 COMPLAINT HANDLING AND RECORDING

Any complaints received verbally by any personnel shall be recorded by the receiver, including:

- The name of the complainant;
- The contact details of the complainant;
- Date and time the complaint was received; and
- The nature of the complaint.

The information shall be provided to the Proponent management teams, who are overall responsible for managing complaints. Complaints should be addressed by following these measures:

- Record the complaint in the complaint register; and
- Provide a written response to the complainant of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken, the reasons why are to be recorded in the register.

The management team shall be informed about the complaints register, its location and the person responsible, to refer tourists or the public who wish to lodge a complaint. The complaints

register shall be kept for the duration of the Project and must be available for government or public review, upon request.

4 REPORTING, COMPLIANCE AND ENFORCEMENT

4.1 ENVIRONMENTAL PERFORMANCE MANAGEMENT

This section outlines the overall monitoring commitments required for implementation during the operational and decommissioning phase of the Project. It details procedures to ensure routine inspections and audits are conducted to ensure that operational and any other construction activities are aligned and remain compliant with this OEMP.

4.2 OPERATIONAL PHASE: ENVIRONMENTAL INSPECTIONS AND COMPLIANCE MONITORING

An audit and inspection program must be in place to ensure effective operational performance. For example, the wastewater treatment facility (i.e. septic tanks), its drainage systems and water metering systems must be inspected and monitored accordingly based on a defined schedule (daily or weekly inspections) and reporting as per licence requirements. This will ensure leakages and potential groundwater contamination are detected and addressed promptly. The operations and maintenance team will conduct these routine inspections.

The operations, maintenance and asset management team will conduct regular inspections of all infrastructure and work areas to ensure compliance with operational specifications and identify any signs of wear, damage or deterioration. Any non-conformance will be recorded, including the following details: a brief description of non-conformance; the reason for the non-conformance; the responsible party; the result (consequence); and the corrective action(s) taken and any necessary follow up measures required.

4.3 REPORTING

All incidents or non-compliances, including environmental issues, wildlife crimes, failure of equipment or accidents, are to be reported to the Proponent's asset manager throughout the Project's lifecycle. MEFT reserves the right to require the Proponent to submit bi-annual reports evaluating the Project's compliance with the commitments that are outlined in this OEMP.

For large-scale spills (i.e., > 200 litres) and other significant environmental incidents, the fire service should be notified as required and the MEFT office should be informed of the incidents (telephone +264 61 284 2111). If the spillage is of a fuel source (i.e. petrol/diesel), MIME must be notified by completing form PP/11 (telephone: +264 61 284 8111).

If significant environmental spills (hydrocarbons or domestic effluent) occur close to or in water drainage systems, the DWA is to be notified. All correspondence with DWA must be done by the asset management team no later than 48 hours after the incident has occurred. All correspondence with the relevant ministries should be handled by the asset management team.

For the clean-up of smaller spills, the relevant material safety data sheet (MSDS) should be consulted to determine the appropriate clean-up procedure. Basic spill response training will be provided as part of the site environmental induction, spill response equipment, including relevant MSDS copies, will be provided in areas where potentially environmentally hazardous chemicals may be used.

Occupational incidents and accidents incurred by staff during operations must be reported to the authorities (i.e. Occupational Safety & Health Department) at the Ministry of Labour, Industrial Relations and Employment Creation (MLIREC), by using form F.5.

In case of archaeological objects or heritage artefacts are discovered on-site, the chance find procedure (Appendix A) must be followed and the NHC must be informed by the asset management team.

5 ENVIRONMENTAL AND SOCIAL MANAGEMENT

5.1 ENVIRONMENTAL PERFORMANCE MANAGEMENT

Table 4 and Table 5 provide the overall management plan of potential impacts during the operational (including maintenance), possible future construction and decommissioning phases. These plans provide mitigation and monitoring commitments, as well as the roles responsible for execution. The asset management team and appointed supervisor(s) or ECO will use the operational management plan to undertake daily, weekly and monthly inspections to ensure the Project remains compliant with this OEMP during operations and to manage any ad hoc activities.

This OEMP has been revised and updated to provide clear guidance to the Project personnel and any appointed contractor and subcontractor throughout the operational and decommissioning phase. Specifically, it covers:

- **Operational phase (current phase):** the day-to-day management of the Project and its associated activities, including mechanical and maintenance activities; and
- **Decommissioning phase (future phase):** the systematic cessation of Projects operations, including the implementation of appropriate after-care measures following cessation of Projects operations.

The OEMP is also relevant to any future construction that might occur during the life to this Project.

5.1.1 OPERATIONAL PHASE

This section outlines the management, mitigation and monitoring measures to be implemented during the daily operation and management of the solar power plant and its associated activities. To ensure all operational and construction activities should be guided by the following principles:

- To manage operations and activities in ways that minimise disturbance to the surrounding natural environment;
- To encourage and enforce environmentally responsible behaviours;
- To prioritise the conservation of the natural environment by integrating sustainable practices into all aspects of operations;
- To foster partnership with community stakeholders to jointly manage natural resources and conservation initiatives; and
- To actively collaborate with regulatory authorities and stakeholders by maintaining open communication and ensuring full compliance with all approved certificates, licences and their conditions.

The specific environmental management measures and monitoring requirements required for implementation during the operational phase are discussed in Table 4.

Table 4 – Environmental aspects, management and mitigation measures for the operational phase (including maintenance and future construction activities)

Aspect	Potential impact	Management and mitigation measures	Monitoring requirement
Environmental awareness	- Environmental grievances and misconducts are due to a lack of awareness.	- Keep environmental policies and guidelines on file; - Ensure environmental awareness posters are displayed across site; - Ensure the OEMP is revised as required to align with the provisions outlined in environmental policies, regulations and their amendments thereof; - Ensure staff and contractors are inducted on environmental matters and receive regular training to ensure they understand the requirements of the OEMP; - Ensure roles and responsibilities of various staff members are clearly defined in their job descriptions.	- Ad hoc
Corporate social responsibility and stakeholder engagement	- Good community relations.	The Proponent should draft a communication plan which should outline the following as a minimum: - How stakeholders, who require ongoing communication for the duration of operations and any future construction, will be identified and recorded and who will manage and update these records; - How these stakeholders will be consulted on an ongoing basis; and - Make provision for grievance mechanisms – i.e. how concerns can/ will be recorded and how feedback will be delivered, as well as further steps of arbitration in the event feedback is deemed unsatisfactory.	- Ad hoc
Water management	- Improper water usage.	- Develop a water management plan; - Ensure that water volumes used for cleaning PV panels are recorded;	- Daily - Weekly - Monthly

Aspect	Potential impact	Management and mitigation measures	Monitoring requirement
		- Considering alternative sources of cleaning if the water usage agreement with Trekkopje Mine exceeds the agreed-upon volumes; - Natural drainage lines are to be avoided at all costs to ensure water from rainfall follows its natural path to the existing vegetation; and - Ensure employees, contractors and sub-contractors are supplied with potable water compliant with the standards of the Water Resources Management Act, 2013 (No. 11 of 2013).	- Annually
Handling, storage and dispensing of hydrocarbon containers, maintenance of equipment, machinery and vehicles	- Soil contamination. - Visual nuisance. - Surface and groundwater contamination.	Hydrocarbon management requirements: - Maintain good housekeeping; - All vehicles, equipment and machinery must be serviced regularly; - All fuel and chemical containers must be stored on an impervious base, be bunded and capable of containing at least 110% of the total capacity of the storage container; - All fuel and chemical storage containers must be placed on stable ground to prevent them from tipping over or a spillage; - Fully stocked appropriate spill kits are to be kept on-site; and - MSDSs are to be kept for each chemical used on-site. These must be accessible to all personnel and personnel must be trained therein. Spill response measures: The following measures are to be implemented in response to a spill: - Spills are to be stopped at the source as soon as possible; - Spilled material is to be contained to the smallest area possible using a combination of absorbent materials, earthen bunds or containment methods;	- Daily - Weekly - Monthly - Annually

Aspect	Potential impact	Management and mitigation measures	Monitoring requirement
		- Spilled material is to be recovered as soon as possible using appropriate equipment. In most cases, it will be necessary to excavate the underlying soil until clean soil is encountered; - Recovered contaminated soil must be disposed to an appropriate disposal facility; - Management is to be informed as soon as possible in the event of a spill; - A written incident report must be submitted MIM for significant spillages; and - Large hydrocarbon spills (i.e. > 200 L) must be reported immediately to MEFT and DWA if it enters any drainage lines. If the spillage is of a fuel source (i.e. petrol/diesel), the MIM must be notified by completing form PP/11 (telephone: +264 61 284 8111).	
Biodiversity management	- Interaction with biodiversity. - Potential introduction and spread of alien or invasive species. - Poaching, - Bird collision/nesting into/within the solar power plant.	The Nature Conservation Ordinance Act, No. 4 of 1975 and its Regulations, Controlled Wildlife Products and Trade Act, No. 9 of 2008 and the Animal Protection Act, No. 71 of 1962 must be closely followed with regard to any encounters with wildlife within the site boundaries. In addition to this, the following measures must be complied with: Vegetation: - Incorporate indigenous plants into the landscaping and ornamental design and ensure that no alien invasive species are introduced; - Off-roading is strictly prohibited. Movements should be restricted to approved roads and walking trails; - The use of pesticides is strictly prohibited. Mechanical pest control methods should be used instead;	- Daily - Weekly - Monthly - Annually

Aspect	Potential impact	Management and mitigation measures	Monitoring requirement
		- Implement a high efficiency system for cleaning of the panels; - Prevent erosion from water flowing off the panels; - Control the growth of alien invasive plant species (monitor and remove these species); and - Special care should be taken as to not damage lithops should future construction take place. Biodiversity survey 2025 recommendations: - Prevent disturbances to shallow washes as far as reasonably possible; - Prioritise conservation of protected, near-endemic and endemic species; - Protect and prevent the removal of <i>Commiphora</i> sp. and other trees; - Where it cannot be protected, undertake/commission rescue and/or relocation missions (NBRI, etc); - Limit the removal of woody species; and - Conduct ecological walk throughs prior to construction, especially in the area marked as the Lithops risk zone. Preferably after seasonal precipitation when Lithops are potentially in flower. Wildlife: - Domestic pets are not permitted on site; - Feeding wild animals or deliberately interacting with them is strictly prohibited; - Construction activities to be limited to the actual footprint of the solar power plant area; - Off-road driving is strictly prohibited;	

Aspect	Potential impact	Management and mitigation measures	Monitoring requirement
		- Capture, possession and consumption of animals are strictly prohibited; - Wild animals encountered on-site should be captured and relocated (including snakes and lizards); - Set site specific speed limits (ideally 40 km/h) and ensure that appropriate road signages are clearly erected; and - Wildlife incidents (injury to or death of animals) must be recorded. Avifauna: - A monitoring programme is to be developed to monitor the potential impacts of avifauna collisions with the solar plant panels; - Should the monitoring results show that such impacts, including injuries and/or mortalities of birds are taking place, mitigation measures would need to be investigated, if necessary, on a species-specific basis; - These mitigations could include minor modifications of the panel design, in order to reduce the illusory characteristics of these structures; - The solar plant should be fenced with jackal-proof fencing to reduce indirect predation of any bird collision species (if injured and still alive), attraction for the creation of dens, and also to prevent the removal of any carcass material before it is recorded; - Security lighting should be kept to the minimum and directed downward and away from the panels if possible; - The panels themselves should not be directly illuminated;	

Aspect	Potential impact	Management and mitigation measures	Monitoring requirement
		- If numerous bird carcasses are found around the modules/solar arrays, investigate and implement relevant management and mitigation measures to avoid/reduce further impacts; - In addition to formal carcass searches, operational staff should report bird mortalities through the formal incident reporting system; - Maintain records of avifauna and monitor new species on or beneath the solar panel structures; - Should any negative impacts occur, mitigation measures to be implemented to address these impacts; and - Bird nesting activities should be discouraged early in the cycle, before any eggs are laid.	
Small civil works	- Littering - Noise nuisance - Occupational safety risks	- Civil works such as concrete mixing should be undertaken at a designated concrete bay; - Prevent runoffs from the areas of operation; - Collect and remove all debris and surplus materials upon completion of work; - Limit noisy activities to designated working hours (i.e. 07:00 am – 17:00 pm); - Train staff in safe handling of tools, equipment and machinery and on emergency procedures; and - Store fuels and oil containers on stable impermeable surfaces to avoid soil contamination; - Ensure building materials, tools and machinery are stored on stable ground and properly secured to prevent tipping and injury to personnel; and	- Ad hoc and as scheduled

Aspect	Potential impact	Management and mitigation measures	Monitoring requirement
		Contractors and sub-contractors will not be housed on site but in local towns such as Arandis, Swakopmund or Walvis Bay	
On-site solar plant	- Potential risk of avifauna collision with the on-site ground-mounted solar panels. - Attraction of fauna.	- Bird nests discovered on infrastructure should not be removed or destroyed. - Maintain records of bird collisions with the solar power plant; and - Instances of high collision rates must be investigated to identify potential causes and appropriate mitigation measures.	- Daily - Weekly
	- Poor operations. - Erosion risks.	- The ground-mounted solar array must be inspected and cleaned regularly to ensure it remains functional; - Prevent pooling of water to minimise attraction of wildlife or avifauna from nesting; and - Prevent the creation of erosion gullies when utilising water during cleaning operations.	Bi-weekly
	Enhance operations	The ground-mounted solar array must be inspected and cleaned regularly to ensure it remains functional.	Bi-weekly
Domestic waste management	Littering, visual nuisance, odours and health risks.	- Implement the waste management hierarchy across the site: avoid, reuse, recycle, and then dispose of; - Maintain good housekeeping across all operational areas; - Provide clearly labelled waste bins to encourage proper waste sorting by guests and staff; - Separate waste at source into categories such as organic (food waste), recyclable (plastic, paper, metal) and non-recyclable waste;	- Daily - Weekly - Monthly

Aspect	Potential impact	Management and mitigation measures	Monitoring requirement
		- A temporary solid waste storage area must be established, and waste bins must be covered and collected periodically for disposal at a registered waste disposal site off-site; - The waste storage area must always be kept clean and tidy; - Once emptied, food waste bins must be cleaned, dried and returned to their designated areas; and - Ensure used oil is not disposed on-site, but rather trucked to the head office and recycled in collaboration with a registered used oil recycling company.	
Wastewater (effluent) management	- Possible sewage discharge runs. - Leakage and seepage of effluent into water resources. - Odours and disease transmissions.	- No employee may relieve himself or herself in the surrounding environment; - Sewage waste to be removed to an official (municipal) sewage disposal site regularly. Alternatively, pump sewage into sealable containers and store it until it can be removed; - PPE (latex gloves and face masks) provided to employees cleaning toilets; and - Regular inspections to detect leakages from the septic tanks. - Ensure compliance with the Water Resources Management Regulations (No. 269 of 2023): Water Resources Management Act, No. 11 of 2013; - Specifically, Part 13 (sections 68 - 72) of the Water Resources Management Act No. 11 of 2013 and Part 8 (Sections 66 - 68) of the Water Resources Management Regulations (No. 269 of 2023); - Effluent should not be discharged into a sensitive habitat/area (i.e., dam, river or stream); and	- Daily - Weekly - Monthly - Annually

Aspect	Potential impact	Management and mitigation measures	Monitoring requirement
		- If a major pipe burst or leak has been discovered in the sewage system, groundwater and surface water needs to be monitored and tested to ensure that there is no contamination.	
Safety, security and health	- Injury - Veld fires	- No open fires are permitted on-site; - Adequate number of fire extinguishers (charged and within their service period) should be available where required; - Develop an emergency preparedness plan and conduct regular drills; - The solar plant site shall be secured with appropriate perimeter fencing to prevent unauthorised access by people and wildlife; - Controlled access points shall be established at all entrances, with trained security personnel stationed at the main entrance during operational hours; - Regular security patrols shall be conducted along the perimeter fence, access roads and within the facility to deter vandalism, theft and unauthorised entry; - Access roads to the solar plant shall be clearly demarcated and restricted to authorised vehicles and personnel only; - Signage indicating restricted access and safety hazards shall be installed at all entry points and along the perimeter fencing; and - Security measures shall be reviewed periodically and upgraded as necessary to address identified risks or incidents.	- Monthly
Historical, archaeological and cultural heritage	- Potential damage to heritage or undiscovered archaeological finds,	- In the event that heritage objects or sites are discovered, the chance find procedure (Appendix A) must be adopted and followed; - A heritage consent from the National Heritage Council (NHC) will be required for the management of any future heritage finds; and	- Project's lifespan

Aspect	Potential impact	Management and mitigation measures	Monitoring requirement
		- Compliance to the heritage consent conditions will be required (e.g. reporting to NHC on a biannual basis and renewal of the heritage consent throughout the Project lifecycle).	
Career uplifting opportunities	- Skills development.	- Engage in general environmental awareness, skills empowering, career advancing workshops and training (e.g. first aid training, hospitality, technical and software skills training); and - Ensure resources are in place to ensure staff participate in regular training and refresher courses to enhance their skills, knowledge and overall competence.	- Ad hoc basis
Job creation and impacts on the local and regional economy	- Commitment to fair recruitment practices.	- The local authority (town council, local headman etc.) should assist with the recruitment process; and - Where available, ensure that goods and services are sourced from local and regional suppliers to support the surrounding economy (e.g. wood from local farmers).	- Ad hoc basis
Community relations	- Strong working relationship with the neighbouring parks, key stakeholders and regulatory authorities.	- The Proponent must represent the Project by maintaining good working relations with the surrounding communities, external auditors and regulatory authorities; - Ensure that cultural or archaeological objects and sites (if discovered or unearthed) are not damaged and are reported to NHC; and - Maintain a complaints register or similar complaint logging system to ensure any complaint received from the community is recorded and addressed through the appropriate complaint resolution mechanisms.	- Ad hoc basis
Rehabilitation	- Potential obstruction or alteration of natural	- Construction and operational activities shall avoid altering or blocking natural drainage patterns as far as reasonably possible, in order to	- Ad hoc basis

Aspect	Potential impact	Management and mitigation measures	Monitoring requirement
	drainage patterns, leading to erosion and negative impacts on on-site biodiversity.	reduce potential impacts on biodiversity and maintain natural drainage lines on-site.; - Where drainage lines are damaged or disturbed during the construction or operational phases, these areas shall be rehabilitated as soon as possible to restore natural drainage and minimise erosion; and - Rehabilitation measures, where feasible, shall ensure that water can continue to flow through the site in a manner similar to pre-construction conditions, thereby reducing impacts on flora and associated habitats.	

5.1.2 DECOMMISSIONING PHASE

The decommissioning phase follows the operational phase. This section provides a site-specific plan developed to ensure that appropriate environmental and management practices are followed during the decommissioning phase. The section also outlines detailed remediation; site control and monitoring activities that will be conducted once the infrastructure is no longer required.

The decommissioning phase:

- Provide effective and implementable site-specific procedures and mitigation measures to monitor and manage environmental impacts throughout the decommissioning phase. These measures aim to minimise the likelihood and extent of post-decommissioning impacts;
- Establish a long-term management plan for the Project site to ensure its effective transition to its next intended use;
- Aims to eliminate the long-term liability issues and reduce the likely occurrence of irreversible impacts post site closure; and
- Provide a platform for the Proponent to engage/collaborate with local communities, stakeholders and regulatory authorities in the planning and implementation of decommissioning activities, including the disposal of waste, building remnants and post-closure care requirements.

Prior to the implementation of any decommissioning or closure measure, a thorough investigation into potential alternative end uses of the site must be conducted, particularly in collaboration with selected stakeholders. This will ensure that opportunities for sustainable land use and appropriate ecological restoration measures are fully considered and effectively integrated into the overall site closure strategy.

The decommission phase or site closure is yet to be determined. However, should this be required or determined for any reason, the following general conditions outlined in Table 5 shall be followed and implemented, as best practice measures.

Table 5 - Rehabilitation plan

Aspect	Management measures required
Tools and equipment	- All fuel containers and tanks must be removed, and any hydrocarbon stains or spillages within Project work areas must be promptly and thoroughly cleaned up; and - The fuel storage tanks, solar panels mounted arrays, underground cabling, all hand and power tools must be cleared from site prior to site closure.
Wastewater management systems	- All drainage systems, wastewater pipes and components of the septic tanks must be disconnected, dismantled and safely disposed offsite at a registered waste disposal facility or wastewater treatment works; and - Ensure all wastewater is properly drained (i.e. no pooling shall remain on-site upon closure).
Building remnants, scrap metals etc.	- All infrastructure, including concrete foundations must be demolished to ensure there will be no free-standing structures; and - Building remnants should be disposed offsite at a registered waste disposal site.
Solid waste management	- All solid waste generated must be handled in accordance with the site waste handling procedures; and - No waste may be buried on-site.
Gravel roads	- Dis-used roads and site access roads must be rehabilitated to enhance the aesthetic value of the site.
Site closure	- Conduct a final site inspection with the representatives of the conservation and / or regulatory authorities (MEFT, NHC or MAFWLR) to verify satisfaction with decommissioning outcomes; and - Once approval is granted, a satisfaction letter or certificate must be issued to the Proponent by the relevant regulatory or park representatives.
Future land use	- Collaboration with selected stakeholders is required to guide future land use planning.

6 IMPLEMENTATION OF THE OEMP

This ESMP:

- A. Has been revised pursuant to the contract with the Proponent;
- B. Has been revised on the basis of information provided to ECC up to December 2025;
- C. Is for the sole use by the Proponent, employees, contractors and subcontractors during the operational, decommissioning phase and possible future construction activities;
- D. Must not be used by any person other than (1) the Proponent (2) Contractors and subcontractors; and
- E. Must not be copied without the prior written permission of ECC.

APPENDIX A - CHANCE FIND PROCEDURE

This section covers the procedures, reporting and management of sites or items of heritage significance should they be discovered, encountered or unearthed within operational on construction areas.

Scope: The "chance finds" procedure covers the actions to be taken from the discovery of a heritage site or item to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

Compliance: The "chance finds" procedure is intended to ensure compliance with relevant provisions of the National Heritage Act, No. 27 of 2004, especially Section 55 (4) which states that: "a person who discovers any archaeological object must as soon as practicable report the discovery to the Council". The procedure of reporting set out below must be observed so that heritage remains reported to the National Heritage Council (NHC) are correctly identified in the field.

Table 6 provides the environmental aspects and impacts, mitigation and monitoring measures for archaeological and heritage aspects.

Table 6 - Archaeological and heritage aspects

Responsibility:	Operations and maintenance team, asset management team, contractors and subcontractors
Potential issues or impacts:	Impact on heritage features.
Management /mitigation measures	
Potential to unearth heritage objects or resources	- All personnel and contractors should be aware of the protected archaeological site and the legal obligation to report any new findings to the National Heritage Council (NHC) immediately. Should a heritage site or archaeological site be uncovered or discovered, particularly during the construction or operational phase, a chance find procedure should be applied in the order they appear below: - If operating machinery or equipment, stop work; - Demarcate the site with danger tape; - Determine the geographical positioning system (GPS) position if possible; - Report findings, site location and action taken to management; - Cease any works in the immediate vicinity;

	- Visit the site and consult any potentially affected community to determine whether work can proceed without damage to the findings; - Determine and demarcate the exclusion boundary; - Site location and details to be added to the Projects geographic information system (GIS) for field confirmation by an archaeologist; - Inspect the site and confirm addition to the Projects GIS; - Advise the NHC and request written permission to remove findings from work area; and - Recover, package and label findings for transfer to the National Museum.
	Should human remains be found, the following actions must be followed: - Apply the chance find procedure as described above; - Schedule a field inspection with an archaeologist to confirm that the remains are human; - Advise and liaise with the NHC and Police; and - Remains will be recovered and removed to either the National Museum or the National Forensic Laboratory.



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REPORT:

BIODIVERSITY SURVEY REPORT FOR THE SOREXA SOLAR PLANT

PROJECT NUMBER: ECC-43-687-REP-05-C

REPORT VERSION: REV 01

DATE: 09 JANUARY 2026



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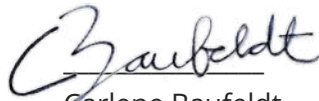
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DISCLAIMER

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TABLE OF CONTENTS

1	Introduction	8
1.1	Project background.....	8
1.2	Biophysical environment overview.....	10
1.3	Biodiversity and ecology	12
1.3.1	Baseline information	12
1.3.2	Field survey	13
1.4	Environmental regulatory requirements	18
1.5	Limitations, uncertainties and assumptions related to this survey.....	19
1.6	Environmental assessment practitioner	20
2	Methodology and results	21
2.1	Methodology.....	21
2.2	Results.....	22
2.2.1	Transect 1	22
2.2.2	Transect 2	24
2.2.3	Transect 3.....	26
2.2.4	Transect 4.....	28
3	Discussion	30
4	Recommendations and Conclusion	33
4.1	Recommendations	33
4.2	Conclusion.....	33
5	References	34

LIST OF TABLES

Table 1 – Plant species identified during the biodiversity survey conducted on 28 October 2025	14
Table 2 - Applicable laws, regulations and best practice methods.....	18
Table 3 - The estimated cover and vegetation findings for transect one (1).....	23
Table 4 - The estimated cover and vegetation findings for transect two (2).....	25
Table 5 - The estimated cover and vegetation findings for transect three (3).....	27
Table 6 - The estimated cover and vegetation findings for transect four (4).....	29

LIST OF FIGURES

Figure 1 - Location of the Sorexa solar plant.....	9
Figure 2 – Showing the difference in moisture content between March 2025 (top) and May 2025 (bottom) (Source: Sinergise Solutions d.o.o. 2025)	11
Figure 3 – Vegetation transect sites within the survey area	17
Figure 4 - Transect 1 N, E, S and W photographs	24
Figure 5 - Transect 2 N, E, S and W photographs	26
Figure 6 - Transect 3 N, E, S and W photographs	28
Figure 7 - Transect 4 N, E, S and W photographs	29

LIST OF APPENDICES

Appendix A – environmental clearance certificate (ECC)	36
Appendix B – Sorexa EIA vegetation survey report	37

EXECUTIVE SUMMARY

The Sorexex solar plant is situated approximately 34 km (direct distance) from Arandis and is accessed via the Trekkopje (Orano) mine access road. Once completed, the Project will consist of a 50 MW solar plant, covering 150 ha. Sorexex has requested that the biodiversity survey cover a 23 ha area that will form part of the Projects amended operational area.

This biodiversity survey aimed to identify plant species that are present within the survey area, which forms part of the additional required operational area, this was done by using random walks and spot checks and transect sampling. Four (4) transects were surveyed to determine species richness, abundance and distribution. Where possible plants were identified to species level and to the family or genus level when unique characteristics were absent.

The Shannon Diversity Index (H') results varied between 1.6 to 2.24, suggesting a moderate overall diversity, where the highest diversity was recorded in transect one (1). Transects one (1) and two (2) had the highest number of near-endemic and endemic species and crossed a mixed habitat of shallow washes and gravel plains.

The results indicated a generally consistent species composition when evaluating species overlap between transects and the Shannon Diversity Index results. The absence of species such as *Lithops*, which was recorded in previous studies within the wider area, emphasises that this survey should not be viewed as a standalone species list or sole reference. Instead, it should be considered together with the study by Mannheimer (2022). The *Lithops* risk zone should be carefully evaluated during any expansion activities and ecological walkdowns are recommended to ensure the detection and protection of any species of conservation importance.

Within and surrounding the survey area, there are various endemic and near-endemic species, as well as protected species and species of conservation concern, such as *Lithops* sp., *Commiphora* sp. and *Larrea trichomanes*.

Overall, the findings of the biodiversity survey provided a reliable indication of plant diversity and composition within the survey area.

The following is recommended for the expansion of the solar plant into the extended area:

- Prevent disturbances to shallow washes as far as reasonably possible;
- Prioritise the conservation of protected, near-endemic and endemic species; and
- Protect *Commiphora* species and other trees from removal.

Where protection is not possible, undertake or commission rescue and/or relocation missions. Limit the removal of woody species and conduct ecological walk-throughs prior to

construction, especially in the area marked as a Lithops risk zone, preferably after seasonal precipitation, when Lithops may potentially be in flower.

ABBREVIATIONS

Abbreviation	Description
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
ECC	Environmental Compliance Consultancy (Pty) Ltd
ECC	environmental clearance certificate
EIA	environmental impact assessment
EMP	environmental management plan
E	east
E (Evenness)	Shannon evenness measure
ha	hectare
H	Shannon Diversity Index
IUCN	International Union for Conservation of Nature
km	kilometre
m	metre
mm/yr	millimetres per year
MW	megawatt
NBRI	National Botanical Research Institute
NEC	Namibian Engineering Corporation
PV	photovoltaic
QGIS	Quantum Geographic Information System
sp.	species
W	west
N	north
S	south

1 INTRODUCTION

1.1 PROJECT BACKGROUND

Environmental Compliance Consultancy (Pty) Ltd (ECC) has been contracted by Sorexex Sun Energy (Sorexex or Proponent), a subsidiary of InnoSun Energy Holding Namibia (InnoSun), to conduct a biodiversity survey for the proposed extension operational area, which will be included in the environmental clearance certificate (ECC) renewal application (APP – 006820) for ECC 2200030 (Appendix A).

Sorexex has finalised the construction of Phase 1 of a 50-megawatt (MW) photovoltaic (PV) solar plant located close to the Trekkopje Mine, referred to as the Project. The Project commenced in August 2023. Ondengu Construction (Ondengu) was contracted to undertake the site preparation work for Phase 1 (9.8 MW), and Namibian Engineering Corporation (NEC) was contracted to carry out the mechanical and electrical scope of the Project. The location and Project footprint are shown in Figure 1.

The Sorexex solar plant is situated approximately 34 km (direct distance) from Arandis and is accessed via the Trekkopje (Orano) mine access road. Once completed, the Project will consist of a 50 MW solar plant, covering 150 ha. Sorexex has requested that the biodiversity survey cover a 23 ha area that will form part of the Projects amended operational area.

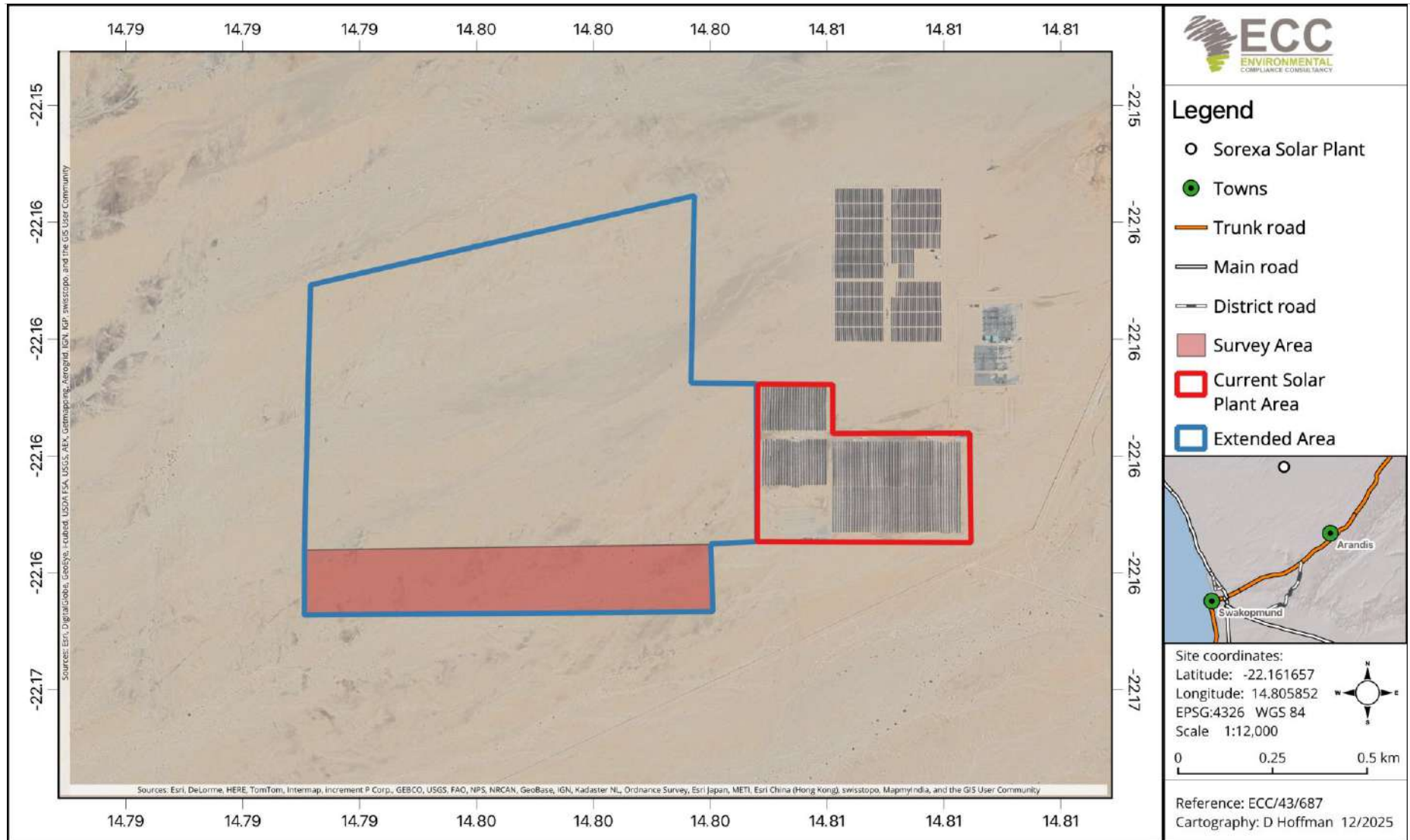
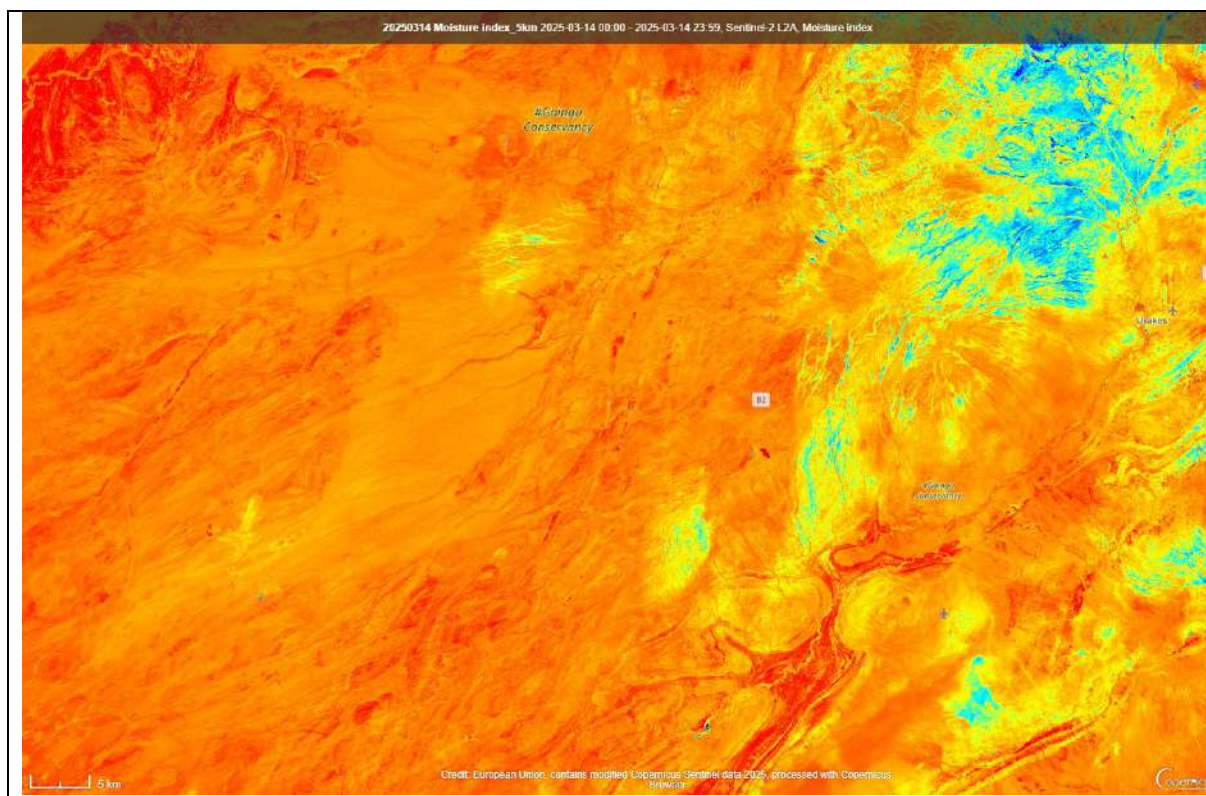


Figure 1 - Location of the Sorexa solar plant

1.2 BIOPHYSICAL ENVIRONMENT OVERVIEW

The Project area falls within the central desert vegetation type of the broader Namib Desert biome. This area is classified as an arid ecosystem with extreme climatic conditions and very low rainfall (0 – 100 mm/yr). It is characterised by harsh temperatures, with annual average, maximum and minimum temperatures ranging between 20 – 22°C, 30 – 32°C and 8 – 10°C, respectively (Atlas of Namibia Team, 2022).

Figure 2 shows images of the study area and areas to the east (upstream, including Usakos), depicting the “Moisture Index” (which may represent water, vegetation, etc.). The images indicate that at the beginning of March 2025, conditions were much drier (larger areas in red and orange). After the rainfall events around 19 March 2025, moisture coverage increased significantly toward the end of May 2025 (evidenced by the shift to yellow and blue), likely due to an increase in vegetation cover.



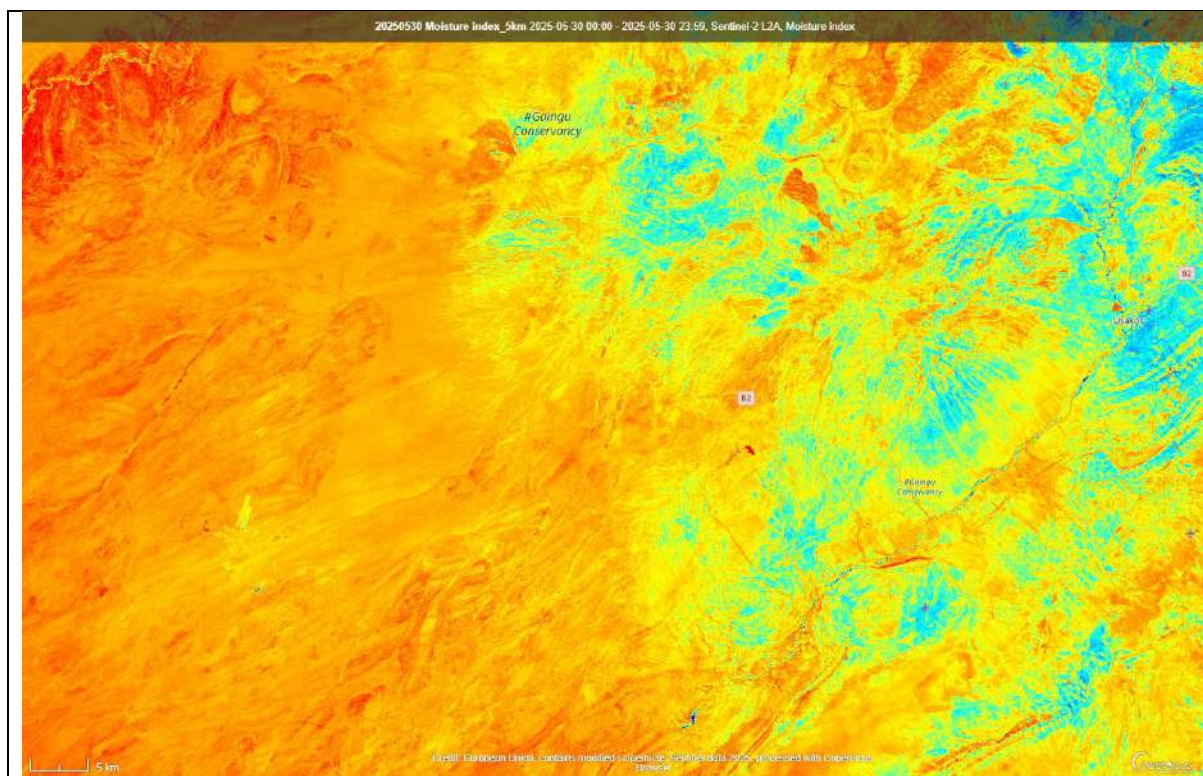


Figure 2 – Showing the difference in moisture content between March 2025 (top) and May 2025 (bottom) (Source: Sinergise Solutions d.o.o. 2025)

The area relies mainly on coastal fog as its primary moisture source; however, it receives less fog than zones closer to the coast, with approximately 25 – 50 fog days per year. Although the central desert ecosystem is known for its sparse vegetation cover, the central Namib supports a high level of endemism, particularly among succulents, annual herbs and geophytes adapted to episodic rainfall and nutrient-poor soils (Atlas of Namibia Team, 2022 and Mannheimer, 2022).

The region between the Swakop and Ugab rivers is considered ecologically important due to its unique fog-dependent species and its diverse microhabitats, including gravel plains, low hills, drainage lines (washes) and rocky substrates. Ephemeral rivers and smaller drainage lines play a crucial role in the Namib Desert biome and function as lateral oases or ecological lifelines. During occasional rainfall/flood events, sometimes years apart, these rivers and channels play an important role in seed dispersal, ecosystem functioning and biodiversity support. Many plant species have seeds that lie dormant until the right conditions trigger germination (e.g., *Mesembryanthemum* sp.). After even a low rainfall event, a noticeable increase in plant growth can be observed, with a much greater impact than what would typically occur further inland.

There is a general lack of surface water in the central desert, where saline springs, pans and calcrete hard-pan areas temporarily store surface water during the rainy season (Burke, 2009). Other important water sources in the area include boreholes, which support human

settlements and, in some locations, are also used to provide water for wildlife, especially during years of extreme drought.

1.3 BIODIVERSITY AND ECOLOGY

1.3.1 BASELINE INFORMATION

While this area of the central Namib is not regarded as an endemic hotspot (relative to the Kaokoveld and southern Namib), it still supports approximately 13 – 30% endemic flora, depending on habitat type (Mannheimer, 2022). Many of these species are relatively slow-growing and highly sensitive to environmental disturbances such as poaching, trampling, earthworks and habitat fragmentation.

The central desert generally has low overall species diversity compared to the central, eastern and northeastern parts of Namibia; however, this area contains highly specialised and often endemic flora and fauna, which are well adapted to these arid conditions (e.g., succulents, specialised annuals, insects, reptiles and small mammals). Coastal and riverine habitats within the Namib biome support higher biodiversity, as these areas provide shelter, movement corridors, food and necessary resources (i.e., Swakop River, dune belts, and Walvis Bay Lagoon) (Atlas of Namibia Team, 2022).

The study area might be on the border of, and/or within, the transitional zone between the central Namib and the central highlands. This is somewhat evident in the vegetation present, which includes a mixture of desert-adapted species and other species.

The habitats where the Project is situated mainly consist of gravel plains and drainage lines (washes). These plains make up the dominant habitat across the site footprint and support a mix of perennial grasses (e.g., *Stipagrostis* spp.), annual herbs and dwarf shrubs that germinate and grow rapidly following occasional rainfall events. Gravel plains generally exhibit low plant densities but moderate species richness, particularly after good rains. Although not identified as highly sensitive, they contain endemic and near-endemic species and contribute to regional ecological connectivity (Mannheimer, 2022).

The Namib Desert hosts extensive lichen fields, comprising approximately 120 documented species (Volkmar, 2010), many of which are endemic. Lichens are not single organisms but symbiotic associations between fungi and algae (cyanobacteria), well-adapted to the desert's extreme conditions. Their distribution varies with fog availability, with some species thriving in fog-rich areas and others in drier zones. These lichens typically colonise soil, rocks and shrubs and are distinct from plants.

Reference should be made to the study by Mannheimer (2022) (Appendix B) for the annotated list of species likely to occur on the Project site. This list consists of a total of 56 species. Of

these identified species, twelve (12) are endemic species, eleven (11) near-endemic species and two (2) species are protected under Namibian legislation.

In addition to these species, the species listed in Table 1 of this report were identified during the biodiversity survey conducted on 28 October 2025 (ECC).

1.3.2 FIELD SURVEY

Approximately eighteen (18) species were positively identified and added to the dataset. In addition, several genera were recorded without references to specific species, due to the absence of sufficient evidence for positive identification.

Within and surrounding the survey area, there are various endemic and near-endemic species, as well as protected species and species of conservation concern, such as *Lithops* sp. *Commiphora* sp. and *Larryleachia marlothii*.

The species added to the dataset represent those found in the transect segments and those found during the random walks and spot checks across the study area. The species list from this study should only be considered an inclusion and should not be used to exclude other species, either known (i.e, from the Mannheimer (2022)) or unknown.

The shallow washes are identified as an ecologically sensitive habitat present within and surrounding the Project area. They collect scarce moisture, especially during occasional precipitation events and hold fine sediments, supporting species that occur less frequently or do not occur at all on the surrounding plains. The Mannheimer (2022) study identified these washes (likely banks or sides of the washes) as preferred habitat for the potential protected *Lithops* population and other specialist species. Disturbance to these microhabitats can cause long-term ecological damage due to their slow recovery rates and the restricted distributions of associated species (Figure 3).

Although overall species diversity is moderate, the presence of endemic and slow-growing taxa heightens the importance of avoiding unnecessary habitat disruption.

Table 1 – Plant species identified during the biodiversity survey conducted on 28 October 2025

Species	Common Name	Conservation Status	Habitat (Found)
<i>Aptosimum arenarium</i> Engl.	Sand Violet (E), Veldviooltjie (A)	Namibian endemic	Gravel plains Shallow washes
<i>Asparagus pearsonii</i> Kies	Desert asparagus (E)	Namibian near-endemic	Shallow washes
<i>Caroxylon</i> sp. (Synonym <i>Salsola</i> sp.)	Salt bush (E), saltworts (E)	Widespread, 2; Endemic, 37.	Shallow washes Gravel plains
<i>Commiphora</i> sp. (Likely <i>Commiphora saxicola</i> Engl.)	Rock corkwood (E), Kanniedood (A)	Namibian near-endemic, Forest Act, Protected Plant Species	Shallow washes Gravel plains
<i>Dyerophytum africanum</i> (Lam.) Kuntze	Desert statice (E), Pronkbos (A)		Shallow washes
<i>Euphorbia phylloclada</i> Boiss.		Namibian near-endemic (also Northern Cape). CITES Appendix II.	Gavel plains Shallow washes
<i>Gazania jurineifolia</i> DC.	White Thistle Gazania (E)		Shallow washes
<i>Geigeria ornativa</i> O.Hoffm.	Common geigeria (E), Common vomitdaisy (E), Vermeerbos (A)		Gravel plains
<i>Gymnosporia senegalensis</i> (Lam.) Loes	Red spike thorn (E), Confetti thorn (E), Pendoring (A)		Shallow washes
<i>Helichrysum</i> sp.	Everlasting (E) Sewejaartjie (A)	Widespread, 2; endemic, 6.	Gavel plains Shallow washes
<i>Heliotropium tubulosum</i> E.Mey. ex DC.	String-of-Stars (E), Grey Heliotrope (E)	Namibian near-endemic (also Northern Cape).	Gravel plains Shallow washes
<i>Hermannia</i> sp.	Hermannia (E), Dollsroses (E),	Widespread, 9; endemic, 11.	Gravel plains Shallow washes
<i>Hermbsaedia spathulaefolia</i> (Engl.) Baker (Synonym <i>Hermbsaedia spathulifolia</i> (Engl.) Baker)		Namibian endemic.	Gavel plains Shallow washes

Species	Common Name	Conservation Status	Habitat (Found)
<i>Indigofera auricoma</i> E.Mey.	Pink desert-indigofera (E)	Namibian near-endemic (also Northern Cape)	Gravel plains Shallow washes
<i>Jamesbrittenia maxii</i> (Hiern) Hilliard	Painted Jaybee (E), Stinkmuishondbos (A)		Shallow washes
<i>Kersia carnosa</i> (Pax) Roalson & J.C.Hall (Synonym <i>Cleome carnosa</i> (Pax) Gilg & Gilg-Ben.)	Mouse-whiskers (E), Cleome (E)	Namibian endemic.	Gavel plains Shallow washes
<i>Leobordea</i> sp. (Suspect <i>Leobordea platycarpa</i> B.-E.van Wyk & Boatwr.			Gravel plains Shallow washes
<i>Mesembryanthemum guerichianum</i> Pax	Ice plant (E), Brakslaai (A)		Gavel plains
<i>Mesembryanthemum</i> sp. (Suspect <i>Mesembryanthemum cryptanthum</i> Hook.f.)	Ice plant (E)		Gravel plains
<i>Orthanthera albida</i> Schinz	Milkweed (E), Pale Starjasmine (E), Melkbos (A)	Namibian near-endemic.	Shallow washes
<i>Pogonospermum cleomoides</i> (S.Moore) I.Darbysh. & Kiel	Namib perdebos (A)	Namibian near-endemic (also Southwestern Angola).	Shallow washes
<i>Pogonospermum desertorum</i> (Engl.) I.Darbysh. & Kiel (Synonym <i>Monechma desertorum</i> (Engl.) C.B.Clarke)		Namibian endemic.	Gavel plains Shallow washes
<i>Sarcocaulon salmoniflorum</i> Moffett (Synonym <i>Monsonia salmoniflora</i>)	Bushman candle (E)		Gavel plains
<i>Sesuvium sesuviodes</i> (Fenzl) Verdc.	Desert pink (E), Oukraal Seapurslane (E)		Gravel plains Shallow washes

Species	Common Name	Conservation Status	Habitat (Found)
<i>Stipagrostis ciliata</i> (Desf.) De Winter	Tall Bushman Grass (E)		Gravel plains Shallow washes
<i>Stipagrostis</i> sp.		Widespread, 3; endemic, 18.	Gravel plains Shallow washes
<i>Stipagrostis subacaulis</i> (Nees) De Winter		Namibian near-endemic	Gravel plains
<i>Tephrosia dregeana</i> E.Mey.	Namaqua Hoarypea (E)		Shallow washes
<i>Tetraena cylindrifolia</i> (Schinz) Beier & Thulin (Synonym <i>Zygophyllum cylindrifolium</i> Schinz)			Shallow washes Gravel plains
<i>Tetraena simplex</i> (L.) Beier & Thulin (Synonym <i>Zygophyllum simplex</i> L.)	Simple-leaved Bean Caper (E), Volstruiskos (A)		Shallow washes Gravel plains
<i>Tetraena stapffii</i> (Schinz) Beier & Thulin (Synonym <i>Zygophyllum stapffii</i> Schinz)	Dollar bush (E), Daalderplant (A)	Namibian endemic	Gravel plains Shallow washes
<i>Tripteris microcarpa</i> Harv. (Synonym <i>Osteospermum microcarpum</i>)	Tall desert-daisy (E), Miniseed Boneseed (E)		Shallow washes Gravel plains

*Afrikaans common names (A) and English common names (E)

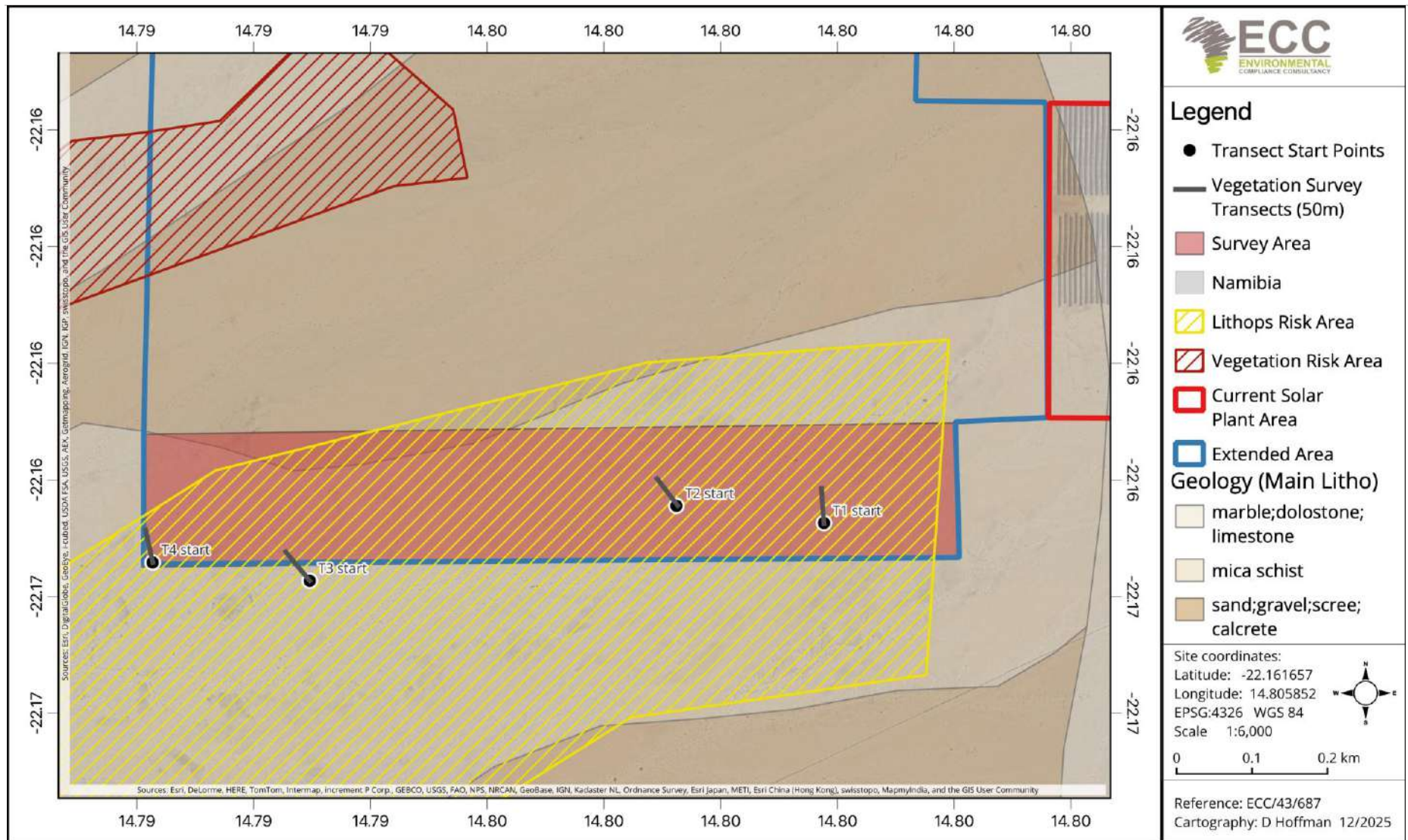


Figure 3 – Vegetation transect sites within the survey area

1.4 ENVIRONMENTAL REGULATORY REQUIREMENTS

The Project triggers listed activities as stipulated in the Environmental Management Act, No. 7 of 2007 and its Regulations, promulgated in 2012. An environmental scoping report, environmental impact assessment (EIA) and environmental management plan (EMP) are required for the Project. The EIA and EMP for the Project were submitted in 2022 by Environ Dynamics and the Project received an approved ECC on 12 December 2022 (ECC-2200030). This biodiversity survey report will be submitted with the renewal application.

Sorexex will need to ensure that all the relevant licences / permits are applied for, for the clearing of land, removal or relocation of plant species, especially considering any protected species on-site.

Legislation that should be adhered to or is relevant to the Project includes the following, as mentioned in Table 2.

Table 2 - Applicable laws, regulations and best practice methods

National regulatory regime	Relevance to the Project
Atmospheric Pollution Prevention Ordinance 11 of 1976	Social and biophysical landscape protection
Environmental Management Act, No. 7 of 2007 and its regulations, including the Environmental Impact Assessment Regulations, No. 30 of 2012	Environmental management and impact assessment process includes public engagement
Soil Conservation Act, No. 76 of 1969 and the Soil Conservation Amendment Act, No. 38 of 1971	Biophysical protection
Water Resources Management Regulations (No. 269 of 2023): Water Resources Management Act, No. 11 of 2013.	Water source protection Wastewater management
The Forestry Act, No. 12 of 2001 as amended by the Forest Amendment Act, No. 13 of 2005	Vegetation protection
Nature Conservation Ordinance Act No. 4 of 1975 and its regulations.	Biodiversity protection
CITES (Convention on International Trade in Endangered Species)	Biodiversity protection
Convention on Biological Diversity (CBD)	Biodiversity protection
International Union for Conservation of Nature (IUCN)	Biodiversity protection

1.5 LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS RELATED TO THIS SURVEY

This biodiversity survey was conducted during the dry season on 28 October 2025. Despite the seasonal timing, the 2025 rainfall period was notably above average for the central desert and central highlands to the east, resulting in much needed moisture availability and an observable increase in plant productivity. Evidence of this increased growth was still present within and around the study area at the time of assessment, including persistent grass cover, herbs, succulents and shrubs. As no wet season survey was conducted, some important phenological phases were not captured, particularly the emergence of geophytes, flowering events and the seasonal appearance of short-lived annual species. This potentially resulted in certain taxa being absent above ground or not easily noticeable.

Certain plant species were difficult to identify to species level due to the absence of seeds (grasses), leaves (e.g., *Commiphora* sp.) and their altered physical appearance in an arid desert environment compared to what they would typically look like in higher-rainfall areas. In these cases, assumptions were made based on the best available resources, which may still leave some room for identification errors.

The biodiversity survey made use of transects along with random spot checks and walks; however, these methods may still result in certain species being missed or overlooked within the survey area. An important species previously recorded in a shallow wash during the Trekkopje study was *Lithops ruschiorum* (Mannheimer, 2022). Although no *Lithops* individuals were observed during the current survey, this does not confirm their absence from the area. The *Lithops* risk zone (Figure 3) should therefore continue to serve as a precautionary guideline during the construction phase of the solar plant expansion, once approved. Ecological walkdowns are recommended to ensure that any sensitive species are identified and avoided and that the necessary permits are obtained should removal or relocation be required.

The exact location of the *Lithops* previously recorded should be obtained from the National Botanical Research Institute (NBRI), as recommended in the May 2006 EIA for the proposed Trekkopje Uranium Project. As *Lithops* are highly cryptic, camouflaging effectively with their surroundings and retreating below the surface, it is best to conduct surveys after rainfall events and/or during the flowering season. These periods offer the greatest likelihood of detecting the plants and accurately identifying the species.

The estimated cover as discussed in the report, is based on a field estimation; by viewing the transect and its segments, no formal measurements were taken and thus can differ between assessors.

This report should be considered complementary to the detailed desktop study by Mannheimer (2022) and is not intended to replace that study.

1.6 ENVIRONMENTAL ASSESSMENT PRACTITIONER

The report has been prepared by Environmental Compliance Consultancy (Pty) Ltd (ECC) (Reg. No. 2022/0593) on behalf of the Proponent. Authored by ECC employees with no material interest in the report's outcome, ECC maintains independence from the Proponent and has no financial interest in the Project apart from fair remuneration for professional fees. Payment of fees is not contingent on the report's results or any government decision. ECC members or employees are not, and do not intend to be, employed by the Proponent, nor do they hold any shareholding in the Project. Personal views expressed by the writer may not reflect ECC or its client's views. The environmental report's information is based on the best available data and professional judgment at the time of writing. However, please note that environmental conditions can change rapidly, and the accuracy, completeness, or currency of the information cannot be guaranteed.

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2 METHODOLOGY AND RESULTS

2.1 METHODOLOGY

The biodiversity survey was conducted on 28 October 2025, during which four (4) vegetation transect surveys were carried out to determine the species diversity of the area. In addition to the transects, random spot checks and walks were conducted to identify any additional species within the survey area (i.e., protected species or species of concern such as *Lithops*).

The transects were selected prior to the site visit using QGIS software. They were plotted to ensure coverage of both the gravel plains and shallow washes, allowing for an effective evaluation of both habitats and helping to include species that might have been overlooked if only one habitat type had been surveyed per transect.

The vegetation transects, as shown in Figure 3, were conducted along a straight line and measured 50 m in length and 2.5 m in width. All plant species rooted within each transect were counted. Photographs were taken of all species and species that could not be identified in the field were identified using various available resource books and online software, such as iNaturalist. Where plants could not be identified to species level, they were instead identified to the genus or family level.

The transects were laid out using a 50 m rope with markers every 10 m. A 1 m measuring stick and a measuring tape were used to measure the width of the transects, with the 2.5 m width divided into 1.25 m on each side of the transect line for all transects. Avenza offline mapping software was used to record the coordinates of important areas or species, as well as to log the tracks for the random walks and spot checks.

The strip transect survey method was used, which involves sampling the area with a series of long, narrow plots; these results could also be used to extrapolate the results to the total Project area (Carthy *et al.*, 2005). Furthermore, each 50 m transect was divided into five (5) 10 m segments to allow for detailed assessment of different portions of the transect and to help identify potential differences between microhabitats, such as gravel plains and washes.

A total of nine (9) photographs were taken at each transect: four (4) at the start of the transect in the northern (N), eastern (E), southern (S), and western (W) directions, as well as one (1) photograph in a northern direction along the transect line for each of the five (5) segments.

The following has been recorded or calculated:

1. Species richness: total number of species recorded.
2. Abundance: total number of plants per species and transect.
3. Shannon diversity index (H): This is an ecological metric that is used to determine the species diversity within a community, accounting for both the number of species and

their relative abundance within a sampled area. The following formulas were used, $H = -\sum[(p_i) \times \ln(p_i)]$ for the Shannon diversity index and $E = H / \ln(k)$ for evenness (E) calculations. Where p_i is the proportion (number of species divided by the total number of individuals counted) and k is the number of species (Rain, 2022).

- a. There is no upper limit for the Shannon diversity index, but usually in real world ecological contexts the value ranges between 1.5 -3.5, with the higher value suggesting higher diversity.
- b. Evenness provides a value between zero (0) and one (1); a habitat's diversity is usually higher with a value closer to one (1) (Rain, 2022).

2.2 RESULTS

2.2.1 TRANSECT 1

In transect one (1), a total of 18 species were recorded, with approximately 333 individual plants counted overall. The transect crossed gravel plains and small drainages (shallow washes). An overview of the estimated cover, number of species and number of total plants for transect one (1) and the five segments is provided in Table 3 and photos from the start of the transect can be seen in Figure 4. The estimated vegetation cover of the transect is 22%, with the majority of the transect consisting of bare ground. The approximate average height of the grasses and shrubs in this transect is between 10 cm and 15 cm and around 3 cm for succulents, with the dominant species being *Stipagrostis ciliata* and *Indigofera auricoma*.

The first segment mainly crossed a gravel plain descending into a small drainage line (shallow wash) and contained four (4) species (22% of the species recorded for transect one (1)). This segment had limited vegetation cover, consisting mainly of grasses and herbs.

The second segment extended across a shallow wash and contained twelve (12) species (67% of the species recorded for transect one (1)). The estimated vegetation cover increased to approximately 35%, also mainly consisting of grasses and herbs.

The third segment also extended across a shallow wash and contained ten (10) species (56% of the species recorded for transect one (1)). Vegetation cover decreased slightly compared to segment two (2), with an estimated 30% vegetation cover, again dominated by grasses and herbs.

The fourth segment started in a shallow wash and extended onto a gravel plain, containing thirteen (13) species (72% of the species recorded for transect one (1)). The estimated vegetation cover increased to 40%, mainly consisting of small shrubs and grasses.

The fifth segment extended across a gravel plain and contained three (3) species (17% of the species recorded for transect one (1)), with a very low estimated vegetation cover of 1%.

Table 3 - The estimated cover and vegetation findings for transect one (1)

Segment	Estimated cover			Species richness	Total abundance
	Vegetation cover (%)	Bare ground (%)	Litter / rock cover (%)		
1	4	95.5	0.5	4	36
2	35	64	1	12	101
3	30	68	2	10	77
4	40	58	2	13	92
5	1	98.5	0.5	3	27
Total T1	22	76.8	1.2	18	333

Transect one (1) contained a total of three (3) species that were unique to this transect. These were *Asparagus pearsonii* (shrub), *Geigeria ornativa* (herb) and *Hermannia* sp. (herb). The area within and surrounding transect one (1) had the following important species for consideration, *Commiphora* sp. (likely *Commiphora saxicola*, the Rock Corkwood), which is endemic to Namibia according to Le Roux and Müller (2007) and is listed as a protected species in the Forestry Act of Namibia under Annexure 2. This specie(s) was also observed in various other locations within the survey area.

The transect contained four (4) endemic species (*Aptosimum arenarium*, *Hermannia* sp. (*Hermannia complicata* and *Hermannia solaniflora* are endemic), *Kersia carnosa* and *Tetraena stapffii*), five (5) near-endemic species (*Asparagus pearsonii*, *Heliotropium tubulosum*, *Indigofera auricoma*, *Pogonospermum cleomoides* and *Stipagrostis subacaulis*) and one (1) species that is near-endemic and listed in the CITES Appendix II (*Euphorbia phylloclada*).

Near this transect, within the survey area, there were two (2) *Gymnosporia senegalensis* trees. Although these trees are not specifically protected, they contain bird nests, which indicates their importance in an arid environment such as this. Trees are rare in these arid environment(s) and their removal is therefore not recommended as far as reasonably possible.

A Shannon Diversity Index (H') of 2.24 was recorded for transect one (1), with an evenness value of 0.775. This indicates moderate species diversity for this transect and the evenness value suggests that the species are generally well distributed, with no single species dominating the area.

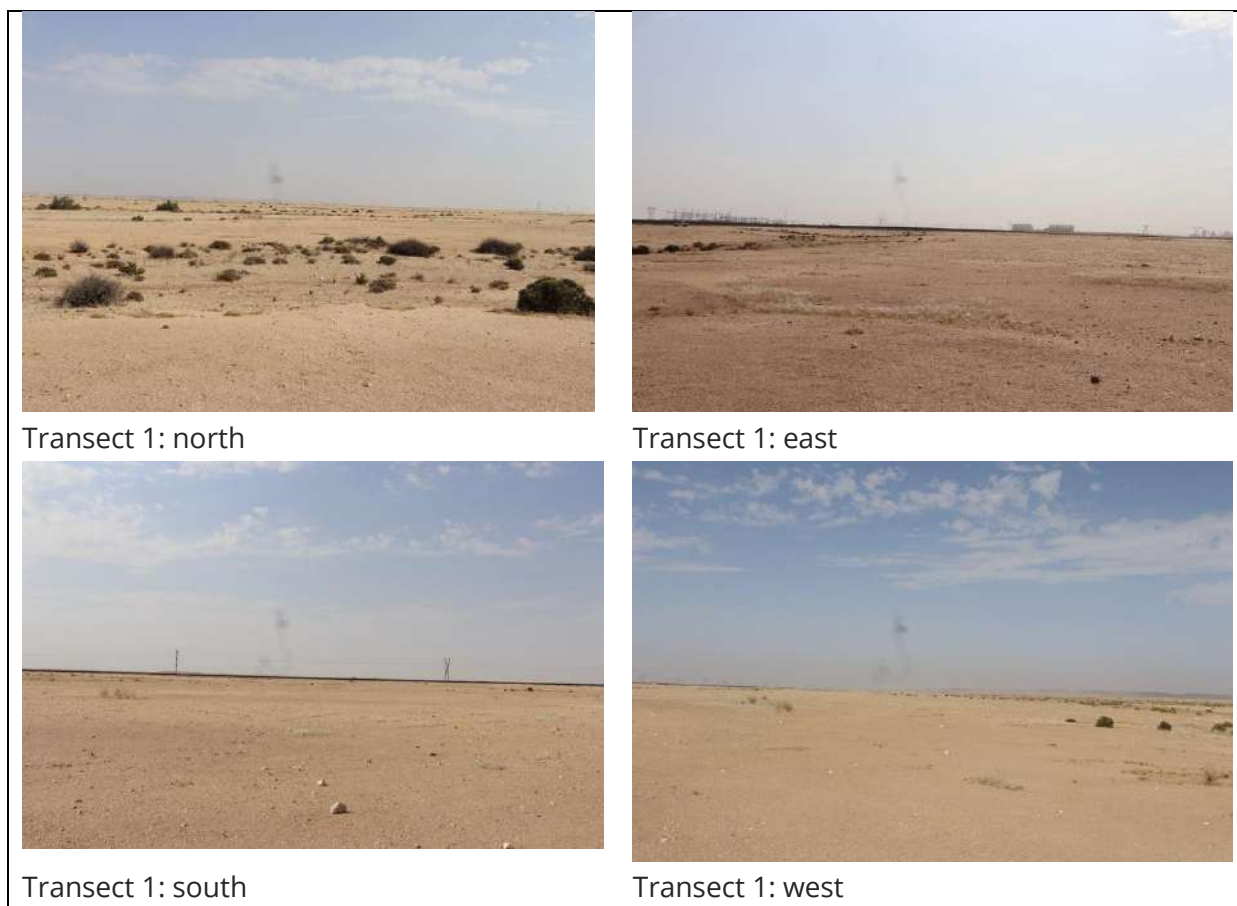


Figure 4 - Transect 1 N, E, S and W photographs

2.2.2 TRANSECT 2

In transect two (2), a total of 19 species were recorded, with approximately 317 individual plants counted overall. The transect crossed gravel plains and small drainages (shallow washes). An overview of the estimated cover, number of species and number of total plants for transect two (2) and the five segments is provided in Table 4 and photos from the start of the transect can be seen in Figure 5. The estimated vegetation cover of the transect is 14.5%, with the majority of the transect consisting of bare ground. The approximate average height of vegetation in this transect is around 30 cm for grasses and shrubs and between 5 cm to 15 cm for herbs, with the dominant species being *Stipagrostis* sp. (mainly *Stipagrostis ciliata*), *Indigofera auricoma* and *Tripteris microcarpa*.

The first segment mainly crossed a gravel plain and contained eight (8) species (42% of the species recorded for transect two (2)). This segment had limited vegetation cover, around 20 %, consisting mainly of grasses.

The second segment continued across the gravel plain and contained ten (10) species (53% of the species recorded for transect two (2)). The estimated vegetation stayed at approximately 20%, mainly consisting of grasses and shrubs.

The third segment mainly extended across a shallow wash and contained nine (9) species (47% of the species recorded for transect two (2)). Vegetation cover decreased compared to segment two (2), with an estimated 7% vegetation cover, the drainage channel was mainly bare ground with a couple of shrubs and grasses.

The fourth segment extended across a gravel plain into a small drainage line, containing seven (7) species (37% of the species recorded for transect two (2)). The estimated vegetation cover increased to 10%, mainly consisting of grasses.

The fifth segment extended across a gravel plain and contained ten (10) species (53% of the species recorded for transect two (2)), with an estimated vegetation cover of 15%, consisting mainly of a small shrub and grasses.

Transect two (2) contained a total of three (3) species that were unique to this transect. These were *Caroxylon* sp. (shrub), *Helichrysum* sp. (herb) and *Tephrosia dregeana* (herb).

The transect contained five (5) endemic species (*Aptosimum arenarium*, *Caroxylon* sp., *Helichrysum* sp., *Hermestaedtia spathulaefolia* and *Tetraena stapffii*), four (4) near-endemic species (*Heliotropium tubulosum*, *Indigofera auricoma*, *Pogonospermum cleomoides* and *Stipagrostis subacaulis*) and one (1) species that is near-endemic and listed in the CITES Appendix II (*Euphorbia phylloclada*).

A Shannon Diversity Index (H') of 2.12 was recorded for transect two (2), with an evenness value of 0.719. This indicates moderate species diversity for this transect and the evenness value suggests that the species are generally well distributed, with no single species dominating the area.

Table 4 - The estimated cover and vegetation findings for transect two (2)

Segment	Estimated cover			No. of species	Total No. of plants
	Vegetation cover (%)	Bare ground (%)	Litter / rock cover (%)		
1	20	79	1	8	72
2	20	79	1	10	67
3	7	91.5	0.5	9	35
4	10	89	1	7	41
5	15	83.5	1.5	10	102
Total T2	14.5	84.5	1	19	317

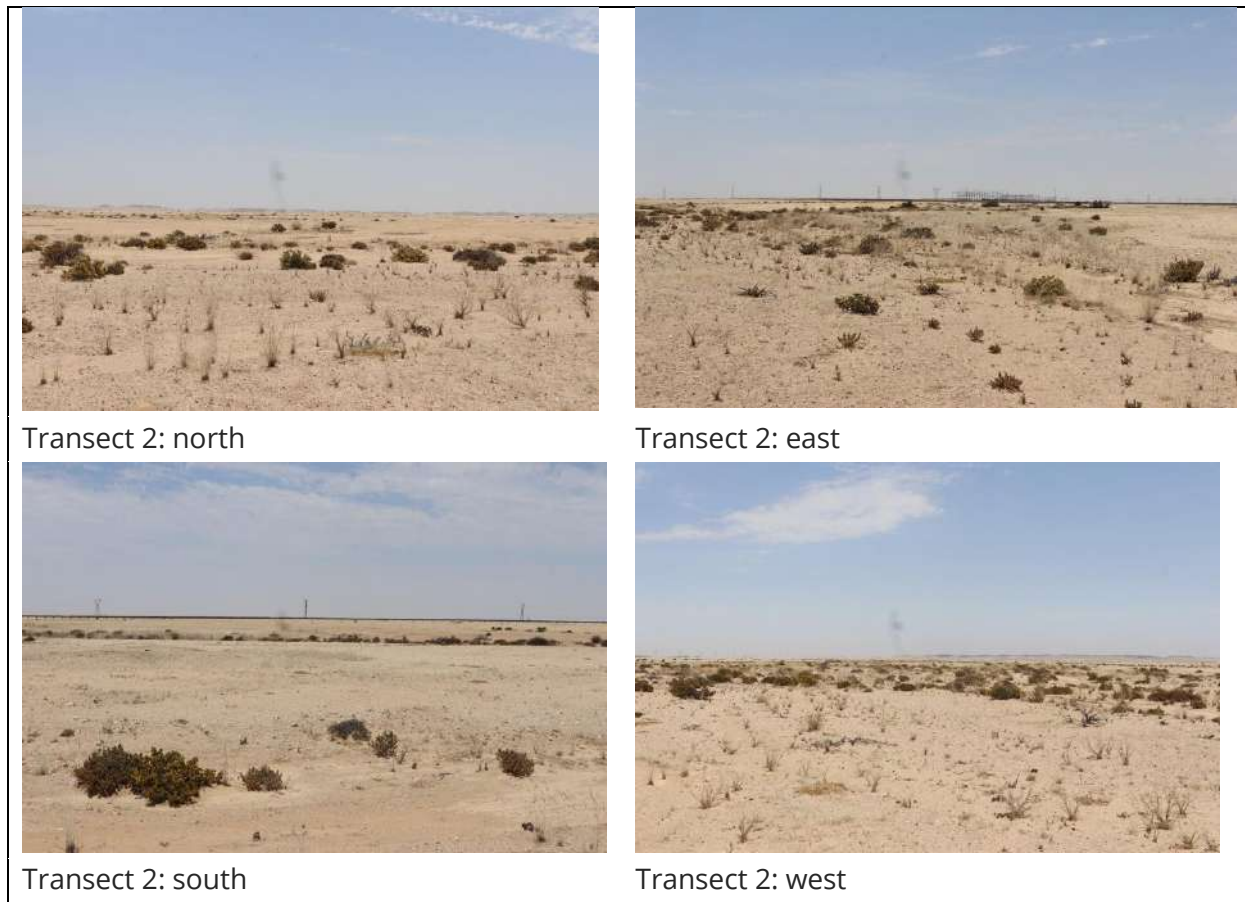


Figure 5 - Transect 2 N, E, S and W photographs

2.2.3 TRANSECT 3

In transect three (3), a total of 13 species were recorded, with approximately 306 individual plants counted overall. The transect crossed gravel plains and small drainages (shallow washes). An overview of the estimated cover, number of species and number of total plants for transect three (3) and the five segments is provided in Table 5 and photos from the start of the transect can be seen in Figure 6. The estimated vegetation cover of the transect is 24.6%, with the majority of the transect consisting of bare ground. The approximate average height of vegetation in this transect is around 45 cm for grasses, 30 cm for shrubs and around 10 cm for herbs, with the dominant species being *Stipagrostis* sp.

The first segment mainly crossed a shallow wash with a thin gravel plain and contained four (4) species (31% of the species recorded for transect three (3)). This segment estimated vegetation cover of approximately 40% consisting mainly of grasses.

The second segment extended across a shallow wash leading onto a gravel plain and contained six (6) species (46% of the species recorded for transect three (3)). The estimated vegetation cover increased to approximately 55%, also mainly consisting of grasses.

The third segment also extended from a gravel plain across a shallow wash and contained nine (9) species (69% of the species recorded for transect three (3)). Vegetation cover

decreased compared to segment two (2), with an estimated 15% vegetation cover, dominated by grasses and herbs.

The fourth segment started in a shallow wash and extended onto a gravel plain, containing eight (8) species (62% of the species recorded for transect three (3)). The estimated vegetation cover decreased to 10%, mainly consisting of grasses.

The fifth segment extended across a gravel plain and contained three (3) species (23% of the species recorded for transect three (3)), with a very low estimated vegetation cover of 3%.

Transect three (3) contained no unique species that were not present in the other transects.

The transect contained three (3) endemic species (*Hermestaedia spathulaefolia*, *Pogonospermum desertorum* and *Tetraena stapffii*) and four (4) near-endemic species (*Heliotropium tubulosum*, *Indigofera auricoma*, *Pogonospermum cleomoides* and *Stipagrostis subacaulis*).

A Shannon Diversity Index (H') of 2.08 was recorded for transect two (2), with an evenness value of 0.81. This indicates moderate species diversity for this transect and the evenness value suggests that the species are generally well distributed, with no single species dominating the area.

Table 5 - The estimated cover and vegetation findings for transect three (3)

Segment	Estimated cover			No. of species	Total No. of plants
	Vegetation cover (%)	Bare ground (%)	Litter / rock cover (%)		
1	40	55	5	4	47
2	55	38	7	6	76
3	15	84	1	9	92
4	10	88	2	8	53
5	3	96	1	3	38
Total T3	24.6	72.2	3.2	13	306



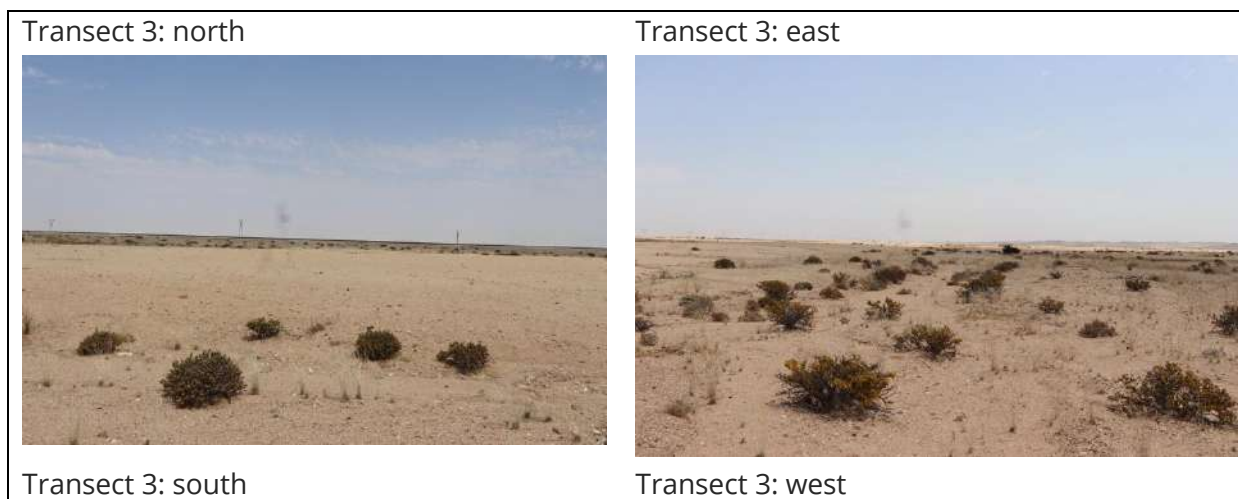


Figure 6 - Transect 3 N, E, S and W photographs

2.2.4 TRANSECT 4

In transect four (4), a total of eleven (11) species were recorded, with approximately 293 individual plants counted overall. The transect crossed gravel plains and a small drainage line. An overview of the estimated cover, number of species and number of total plants for transect four (4) and the five segments is provided in Table 6 and photos from the start of the transect can be seen in Figure 7. The estimated vegetation cover of the transect is 13.2%, with the majority of the transect consisting of bare ground. The approximate average height of vegetation in this transect is around 20 cm for grasses, 80 cm for shrubs and around 10 cm for herbs, with the dominant species being *Stipagrostis ciliata* and *Kersia carnosa*.

The first segment mainly crossed a gravel plain descending into a small drainage line (shallow wash) and contained seven (7) species (70% of the species recorded for transect four (4)). This segment has an estimated vegetation cover of 20%, consisting mainly of grasses and herbs.

The second segment extended across a shallow wash and contained six (6) species (55% of the species recorded for transect four (4)). The estimated vegetation cover increased to approximately 30%, mainly consisting of grasses and a medium sized shrub (Dollar bush).

The third, fourth and fifth segments extended across a gravel plain containing seven (7), four (4) and four (4) species respectively (64%, 36% and 36% respectively of the species recorded for transect four (4)). The estimated vegetation cover decreased from 10% in segment three (3) to 5% in segment four (4) and 1% in segment five (5).

Transect four (4) contained no unique species that were not present in the other transects. This transect was, however, the only one that contained lichen species (specifically *Stellarangia elegantissima*). Although it was the only transect with lichens, numerous lichen species were observed throughout the survey area. This lichen species was not included in the calculations for this transect.

The transect contained three (3) endemic species (*Kersia carnosa*, *Pogonospermum desertorum* and *Tetraena stapffii*) and two (2) near-endemic species (*Indigofera auricoma* and *Stipagrostis subacaulis*).

A Shannon Diversity Index (H') of 1.6 was recorded for transect four (4), with an evenness value of 0.669. This indicates lower species diversity for this transect and the evenness value suggests that the species are generally well distributed, with some species being more dominant in the area.

Table 6 - The estimated cover and vegetation findings for transect four (4)

Segment	Estimated cover			No. of species	Total No. of plants
	Vegetation cover (%)	Bare ground (%)	Litter / rock cover (%)		
1	20	77	3	7	62
2	30	68	2	6	66
3	10	85	5	7	96
4	5	92	3	4	48
5	1	95	4	4	21
Total T4	13.2	83.4	3.4	11	293



Transect 4: north



Transect 4: east



Transect 4: south



Transect 4: west

Figure 7 - Transect 4 N, E, S and W photographs

3 DISCUSSION

The biodiversity survey included the evaluation of plant species across four (4) transects, which provided a good overview of species richness, abundances, distribution patterns and habitats within the survey area for the Sorexa solar plant expansion. Overall, the results indicated that the study area has a moderate species diversity and a relatively high number of endemic and near-endemic plant species. The site is classified as arid and falls within the central desert and is dominated by grasses (mainly *Stipagrostis* sp.), small shrubs (e.g., dollar and pencil bushes), succulents and herbs. Localised increases in vegetation cover and species richness occur mainly along drainage lines (shallow washes). The overall vegetation cover across the survey area is generally low, which is expected for gravel plains within the central Namib Desert.

The study area consists of numerous drainage lines of varying sizes, most of which support several plant species. Some drainages contained an abundance of particular species, while others supported a greater diversity of species.

Species richness differed moderately between the four (4) transects, ranging from eleven (11) species in transect four (4) to nineteen (19) species in transect two (2). The highest abundance (total number of plants per transect) was recorded in transect one (1), with 333 individuals, whereas transect four (4) recorded 293 individuals, representing the lowest abundance. Although there were differences in species richness and abundance, the overall pattern showed that shallow washes supported significantly higher species richness and vegetation density than the gravel plains in the area. This is common in arid ecosystems, where drainage lines accumulate more moisture and fine sediments, creating more favourable habitat conditions that support a wider variety of plant species.

The results from the segments also reflected this pattern and showed that segments extending through shallow washes had higher overall species richness and estimated vegetation cover when compared to segments extending across gravel plains. For example, segment two (2) of transect one (1) contained twelve (12) species and had a vegetation cover of 35%, while segment two (2) of transect three (3) contained six (6) species and recorded an estimated vegetation cover of 55%, which was the highest across the study area. In contrast, segments crossing gravel plains, such as segment five (5) of transect one (1) and segment four (4), had an estimated vegetation cover of only 1%. Overall, the gravel plains supported low species richness and vegetation cover.

The Shannon Diversity Index (H') results varied between 1.6 to 2.24, suggesting a moderate overall diversity, with noteworthy differences between transects:

- Transect 1: $E = 0.775$ and $H' = 2.24$
- Transect 2: $E = 0.719$ and $H' = 2.12$
- Transect 3: $E = 0.81$ and $H' = 2.08$

- Transect 4: $E = 0.669$ and $H' = 1.6$

The highest diversity was recorded in transect one (1). Although transect two (2) had a higher species richness of nineteen (19) compared to eighteen (18), the evenness in transect one (1) was higher, suggesting that species were more evenly distributed. This influenced the Shannon Diversity Index results. Transects one (1) and two (2) also had the highest number of near-endemic and endemic species and crossed a mixed habitat of shallow washes and gravel plains. The lowest diversity value was recorded in transect four (4), mainly due to its lower species richness and the dominance of a few species (i.e., *Stipagrostis ciliata* and *Kersia carnosa*).

Transects one (1) to three (3) recorded evenness values close to 0.8, which suggests that individuals were relatively well distributed among species. Only transect four (4) displayed lower evenness, indicating dominance by a few species.

These findings indicate that, while all four (4) transects have a similar vegetation structure and species composition, habitat variations, particularly the presence of drainage lines (shallow washes), significantly influence species distribution and diversity within the area.

Transects one (1) and two (2) contained species that were not present in the other transects. These included *Asparagus pearsonii*, *Geigeria ornativa* and *Hermannia* sp. in transect one (1), and *Caroxylon* sp., *Helichrysum* sp. and *Tephrosia dregeana* in transect two (2).

Transects three (3) and four (4) contained no unique species but contributed to the overall species richness and distribution, indicating a high degree of species overlap between transects. The results clearly show that the eastern side of the survey area (transects one (1) and two (2)) has higher species richness and estimated vegetation cover compared to transect four (4) on the western side, which recorded the lowest species richness and abundance.

All transects contained endemic species (3 – 5 per transect) and near-endemic species (2 – 5 per transect). Within and surrounding the survey area, *Commiphora* sp. (likely *Commiphora saxicola*, the Rock Corkwood), which is endemic to Namibia (Le Roux & Müller, 2007) and listed as a protected species under Annexure 2 of the Forestry Act of Namibia, was observed in several locations. Near transect one (1), within the survey area, two (2) *Gymnosporia senegalensis* trees were also recorded. Although not specifically protected, these trees contained bird nests, highlighting their ecological importance in an arid environment. Trees are rare in such habitats, and their removal is therefore not recommended where it can reasonably be avoided.

The study area is characterised by overall low estimated vegetation cover (13 – 25%), consistent with what is expected on gravel plains in the central desert. Shallow washes support significantly higher plant densities and better structural variability, contributing to increased species diversity and richness. Dominant grass species (*Stipagrostis ciliata*,

Stipagrostis sp.) and small shrubs (*Indigofera auricoma*, *Pogonospermum cleomoides*) reflect the typical desert-adapted flora capable of surviving prolonged dry periods.

Some notable findings within the study are included: *Gazania jurineifolia* was an interesting observation, as this species is generally associated with winter rainfall areas. However, it is not an isolated find in the Erongo Region, as several sightings have been recorded on iNaturalist by observers. Bushmancandles were found on the gravel plains between the drainage lines and in slightly elevated areas. A large *Commiphora* specimen was recorded in one of the larger drainages, which also supported trees and more established vegetation. The smaller *Commiphora* species were mainly scattered across the gravel plains throughout the study area. Lichen communities were observed across the site, occurring on stones, rocky sands, and even on shrub-like vegetation. Species identified included *Xanthodactylon turbinatum*, *Stellarangia elegantissima* (syn. *Caloplaca elegantissima*, Namib Sun), *Stellarangia namibensis* (syn. *Caloplaca namibensis*), *Xanthoparmelia* sp., *Caloplaca* sp., *Acarospora gypsi-deserti* and several unidentified species. Cyanobacteria/soil crust communities were also present. Mesembs (ice plants) were observed in the southwestern corner of the site.

Overall, species diversity and abundance in the area were moderate compared to other parts of Namibia but relatively high for an arid environment.

4 RECOMMENDATIONS AND CONCLUSION

4.1 RECOMMENDATIONS

The following is recommended for the expansion of the solar plant into the extended area:

1. Prevent disturbances to shallow washes as far as reasonably possible.
2. Prioritise conservation of protected, near-endemic and endemic species.
3. Protect and prevent the removal of *Commiphora* sp. and other trees. Where it cannot be protected, undertake/commission rescue and/or relocation missions (NBRI, etc).
4. Limit the removal of woody species.
5. Conduct ecological walk throughs prior to construction, especially in the area marked as Lithops risk zone. Preferably after seasonal precipitation when Lithops are potentially in flower.

4.2 CONCLUSION

The biodiversity survey for the required expansion of Sorex solar plant revealed a moderate plant species diversity within the survey area. Species are dispersed relatively evenly across the site, with no single species being overly dominant. While some identification challenges were encountered, particularly due to the absence of leaves and seeds, reasonable confidence was achieved through the use of high-quality Namibian resources that assisted with the identification and compilation of the species list.

The results indicated a generally consistent species composition when evaluating species overlap between transects and the Shannon Diversity Index results. The absence of species such as *Lithops*, which was recorded in previous studies within the wider area, emphasises that this survey should not be viewed as a standalone species list or sole reference. Instead, it should be considered together with the study by Mannheimer (2022) (Appendix B). The Lithops risk zone should be carefully evaluated during any expansion activities, and ecological walkdowns are recommended to ensure the detection and protection of any species of conservation importance.

The survey also highlighted the ecological importance of drainage lines (shallow washes), which supported the highest species diversity within this arid landscape. These areas should be prioritised for mitigation planning, avoidance or buffering where feasible. The upstream and downstream impacts should also be considered and prioritised during any construction planning, and disturbances to drainage lines should be avoided as far as reasonably possible.

The results from this survey conducted will inform the updated environmental and social management plan for the environmental clearance renewal process for this Project.

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APPENDIX A – ENVIRONMENTAL CLEARANCE CERTIFICATE (ECC)

APPENDIX B – SOREXA EIA VEGETATION SURVEY REPORT