

## **Updated Environmental Management Plan (EMP)**

**The Operations and Maintenance of the Existing 3-Megawatt (MW) Solar (Photovoltaic (PV)) Park within the Townlands of Arandis, Erongo Region –  
Application for the Renewal of an Environmental Clearance Certificate (ECC)**



**ECC Renewal Application No.:**

**APP-005933**

**Current ECC No.:**

**ECC APP-10344**

**Current ECC Holder (Developer):**

**OLC Arandis Solar Energy (Pty) Ltd**

**P. O. Box 16 Windhoek, Namibia**



**June 2025**

## Declaration of authorship

APPLICATION NUMBER: DD 5933

Project Title:

The Operations and Maintenance of the Existing  
3-Megawatt(MW) Solar Photovoltaic (PV) Park within the  
Townlands of Arandis, Erongo Region - Application for the  
Renewal of the ECC NO. 10344

I, Fredrika Shagama (full name of Environmental Assessment Practitioner - EAP) understand and agree that the information I have furnished in this submission will be reviewed by the Office of the Environmental Commissioner (OEC). I accept that the Environmental Commissioner, will hold me accountable in terms of Section 43(1)(b) of the Environmental Management Act, Act No. 7 of 2007 for any inaccurate or misleading information knowingly provided in the following documentation.

Tick the box (es) applicable to your submission:

- ☐ Pro Forma Environmental Contract for Mining Claim(s)
- ☐ Environmental Questionnaire For Mining
- ☐ Scoping report
- ☐ Environmental Impact Assessment (EIA)
- ☒ Environmental Management Plan (EMP),
- ☐ Consent from Relevant Authority

I certify, and, acknowledge that the provision of such information will impede the lawful carrying out of the duties, responsibilities and functions of the Environmental Commissioner. I declare that the information submitted is my own work. All direct or indirect sources used are acknowledged as references.

Consultancy Name: Serija HGE Consultants cc

EAP Signature: 


Date: 19.06.2025

**NB- To be submitted jointly with Scoping Report, EIA, EMP documents to the Office of the Environmental Commissioner**

## DOCUMENT INFORMATION

Title: Updated Environmental Management Plan (EMP): The Operations and Maintenance of the Existing 3-Megawatt (MW) Solar (Photovoltaic (PV)) Park within the Townlands of Arandis, Erongo Region

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<b>Date:</b>	18 June 2025

## **SERJA'S STATEMENT OF INDEPENDENCE AND DISCLAIMER**

As the Appointed Environmental Consultant to apply for the ECC renewal of Operations and Maintenance of the Existing 3-Megawatt (MW) Solar (Photovoltaic (PV)) Park within the Townlands of Arandis, Erongo Region and update the 2022 Environmental Management Plan (EMP) compiled by Serja Hydrogeo-Environmental Consultants cc (*Serja HGE Consultants*) declares that we:

- do not have, to our knowledge, any information or relationship with the Project owner (OLC Arandis Solar Energy (Pty) Ltd), their Team nor the Ministry of Environment, Forestry and Tourism (MEFT)'s Department of Environmental Affairs and Forestry (DEAF) that may reasonably have the potential of influencing the outcome of this ECC renewal application and the new ECC applied for.
- have knowledge of and experience in conducting environmental assessments, the Environmental Management Act (EMA) No. 7 of 2007, and its 2012 Environmental Impact Assessment (EIA) Regulation, as well as other relevant national and international legislation, guidelines, policies, and standards that govern the proposed project as presented herein.
- have performed work related to the ECC renewal application objectively, even if the results in views and findings, or some of these may not be favorable to the ECC holder/new ECC applicant.
- declare that we do not have and will not have any involvement or financial interest in the undertaking/implementation of the proposed project, other than remuneration (professional fees) for work performed to apply for the ECC renewal in terms of the EIA Regulations' requirement as an Environmental Assessment Practitioner (EAP).

**Disclaimer:** Serja HGE Consultants will not be held responsible for any omissions and inconsistencies that may result from information that was not available at the time this document was prepared and submitted for evaluation.



.....  
Signature

Date: 18 June 2025

Fredrika N. Shagama: Principal Environmental Assessment Practitioner & Hydrogeologist



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## List of Abbreviations

ABBREVIATION	MEANING
AC	Alternating Current
DC	Direct Current
DEAF	Department of Environmental Affairs and Forestry
EAP	Environmental Assessment Practitioner
ECB	Electricity Control Board of Namibia

<b>ABBREVIATION</b>	<b>MEANING</b>
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
ErongoRed	Erongo Regional Electricity Distributor Company (Pty) Ltd
HSE	Health, Safety, and Environment
kV	Kilovolt
MAFWLR	Ministry of Agriculture, Fisheries, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism
MEIYSAC	Ministry of Education, Education, Innovation, Youth, Sport, Arts and Culture
MHSS	Ministry of Health and Social Services
MIME	Ministry of Industries, Mines and Energy
MWp	Megawatt-peak
MWT	Ministry of Works and Transport
NHC	National Heritage Council of Namibia
O&L	Ohlthaver & List Group
PPE	Personal Protection Equipment
PV	Photovoltaic
SHE	Safety, Health & Environment
SMEs	Small and medium businesses

# 1 INTRODUCTION

## 1.1 Background and Project Location

OLC Arandis Solar Energy (Pty) Ltd (hereinafter referred to as *OLC Arandis Solar Energy*) operates and maintains a 3-Megawatt (MW) Solar Park (Plant) in Arandis. The Solar Park and its associated infrastructure are located on the immediate southwestern side of Arandis (Figure 1-1) and Figure 1-2), within the declared townlands in the Erongo Region (hereinafter referred to as the project site or the project). The Project Site is well located in proximity (west) of the existing Arandis' Erongo Regional Electrical Distributor (ErongoRed) Substation, to ensure easy connection to the national grid. The Plant covers an area of twelve (12) hectares (Ha). The coordinates of the site boundaries and significant infrastructures are as provided in Table 1.

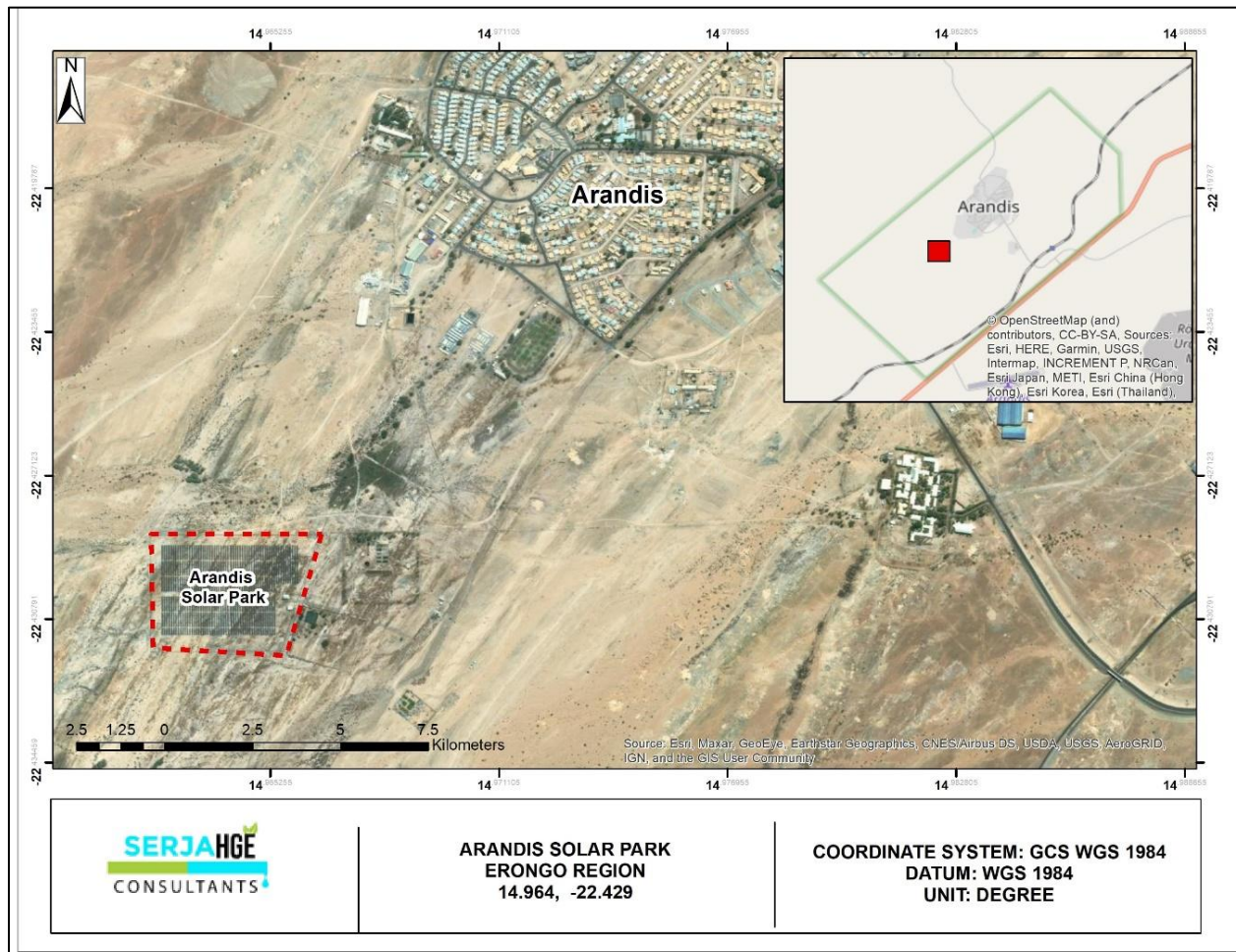


Figure 1-1: Locality map of the OLC Arandis Solar Energy Site in Arandis Town, Erongo Region

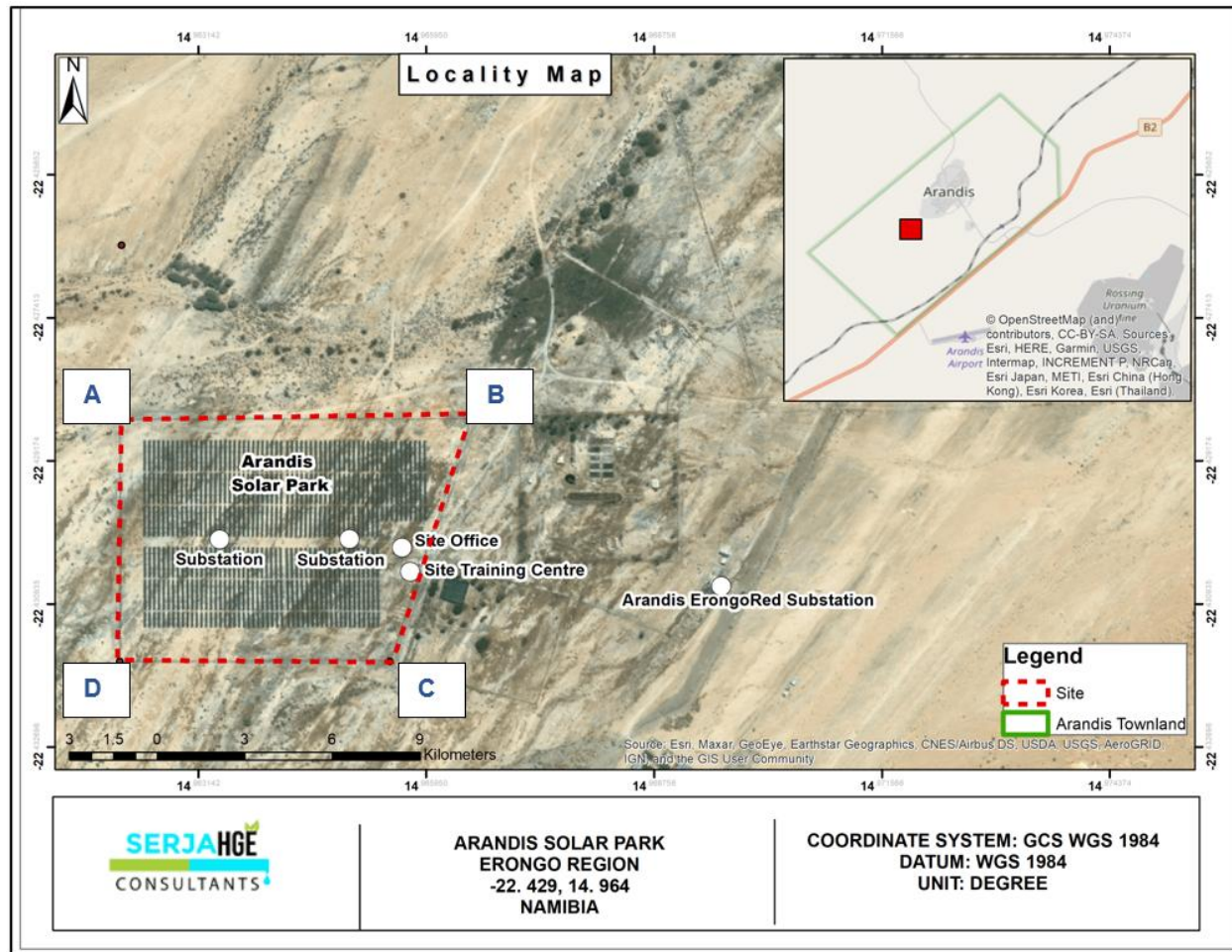


Figure 1-2: OLC Arandis Solar Energy Site with supporting infrastructure

Table 1-1: GPS Coordinates of the OLC Arandis Solar Energy Site and some of its significant features

Site Feature	GPS Coordinates
Point A	-22.428652° 14.962197°
Point B	-22.428661° 14.966492°
Point C	-22.431642° 14.965503°
Point D	-22.431644° 14.962174°
Substation 1	-22.430140° 14.963403°
Substation 2	-22.430135° 14.965003°
Site Training Centre	-22.430535° 14.965750°

Site Feature	GPS Coordinates
Site Office / OLC Arandis Transfer Substation	-22.430242° 14.965651°

## 1.2 Environmental Clearance Certificate and the Need for Renewal

The project and associated activities are listed in the Environmental Impact Assessment (EIA) Regulations (2012) of the Environmental Management Act (EMA) No. 7 of 2007, which stipulate that they may not be undertaken without an Environmental Clearance Certificate (ECC). Thus, the ECC must be renewed every three years.

The associated listed activities in the EIA Regulations include:

- LISTED ACTIVITY 1: ENERGY GENERATION, TRANSMISSION, AND STORAGE ACTIVITIES
- 1. The ~~construction of facilities for -~~
- (a) The generation of electricity (**from the Solar/PV Plant**)
- (b) The transmission and supply of electricity (**supplying of electricity to the ErongoRED grid that is connected to the site**);
- ~~(c) refining of gas, oil, and petroleum products; and~~
- ~~(d) nuclear reaction, including production, enrichments, processing, reprocessing, storage, or disposal of nuclear fuels, radioactive products, and waste.~~

To fulfil this requirement, the project was issued an Environmental Clearance Certificate (ECC) on the 26<sup>th</sup> of September 2022 (Appendix A) upon approval of a 2022 Comprehensive Environmental Management Plan (EMP) by Serja HGE Consultants. The ECC will expire on the 26<sup>th</sup> of September 2025. Thus, a renewal is required to continue with the project activities.

Added to that, for the project to remain compliant with the environmental legislation and ensure sustainability, the ECC renewal should be applied for (accompanied by an updated EMP) and submitted to the Environmental Commissioner at the Ministry of Environment, Forestry and Tourism (MEFT).

Subsequently, to ensure continued compliance with the EMA and its 2012 EIA, OLC Arandis Solar Energy appointed Serja Hydrogeo-Environmental Consultants CC, independent Environmental Consultants, to apply for the ECC renewal, accompanied by an updated EMP.

The updated EMP would include information on what may have changed between the date of ECC issuance and to date, as well as the confirmation of actual implementation of the environmental management and mitigation measures recommended upon approval of the first EMP. The updated EMP is then submitted to the Environmental Commissioner at MEFT for ECC renewal consideration.

### 1.3 Project Need and Desirability

In terms of the project's need and desirability to continue operations, the OLC Arandis Solar Energy project contributes to the global and national vision for clean, renewable energy to combat climate change, thus reducing dependence on fossil fuels and ensuring long-term energy security. Solar energy is abundant, sustainable, and environmentally friendly, producing no greenhouse gas emissions during operation.

The desirability of this project lies in its potential to provide cost-effective electricity, promote energy independence, and create local employment opportunities. Added to that, the project supports national and international commitments to reduce carbon footprints and transition toward a low-carbon economy. Hence, the need to continue operations

### 1.4 The Aim of this EMP

This document has been compiled to inform the Ministry of Environment, Forestry and Tourism (MEFT) of what has happened on the project site since the issuance of the expired ECC to date, to enable the renewal of the ECC. The aim is also to report on the progress of actual work done on site, implementation of the environmental management and mitigation measures of potential impacts identified.

For the project to remain compliant with the environmental legislation and ensure sustainability, a new ECC should be applied for by launching an application with MEFT.

The ECC renewal is aimed at ensuring that the project activities are undertaken in an environmentally friendly and sustainable manner. This is done by ensuring effective implementations of environmental management and mitigation measures recommended in the previously approved EMP to minimize the adverse identified impacts while maximizing the positive impacts. Not only by the mere implementation of these measures, but also by bi-annual monitoring of this implementation through audit and project activities' compliance exercises on site throughout the project life cycle and validity of the ECC over time.

Subsequently, to comply with the EMA and its 2012 EIA Regulations, OLC Arandis Solar Energy appointed an independent Environmental Consultant to undertake the necessary tasks for their ECC renewal. The required tasks include assessing the site, checking the status of the implementation of the old EMP/management and mitigations, compiling an updated EMP, and submitting the ECC renewal application and EMP to the MEFT for evaluation.

The description of the current operational site activities is presented in the next chapter.

## 2 DESCRIPTION OF CURRENT ACTIVITIES ONSITE

As part of the ECC renewal application, a site audit was done by Serja HGE Consultants on the 13<sup>th</sup> of June 2025. The audit was aimed at confirming the implementation of the 2022 EMP onsite and ascertaining new changes onsite (if any) before the ECC renewal application can be submitted to the MEFT alongside the updated EMP for evaluation and consideration of a new ECC.

### 2.1 Operational Activities

OLC Arandis Solar Energy operations at the PV Plant started (first energy production) in July 2017, with the Plant capacity being 3.84MWp (DC), and the Output is 3.3MW AC at 11kV. The total annual energy production from the Solar Park is 9,533 MWh, and under optimal operational outputs, small deviations can occur due to a variety of factors (Serja Consultants, 2022).

The project comprises a single-axis tracking PV power plant, which is synchronised to the existing ErongoRed grid infrastructure. Approximately 12,000 crystalline solar modules are used to produce the Direct Current (DC) power, which is then inverted to Alternating Current (AC) and stepped up via a transformer to feed into the network.

### 2.2 Maintenance Activities

The maintenance of the project site is done following the documented maintenance schedule and will be done continuously for the envisaged twenty-five-year lifespan of the facility to ensure correct operation and enhanced energy yield.

The solar panels' life expectancy is usually 20 to 25 years, and therefore, they have not been replaced yet. However, the panels will be done if any of the panels are damaged. The only maintenance currently done is the cleaning of panels when required. The indication of whether the panels need to be cleaned or not (dirt) is determined by the installed sensor placed on one of the solar panel arrays next to Substation 1 onsite.

For cleaning, among other panel cleaning methods, such as dry cleaning, the wet cleaning option is used. This is normal washing with fresh water through pipelines connected from the two onsite taps. The pipes are designed to spray water on the solar panels once alerted by the sensor, therefore ensuring their cleanliness to promote energy production efficiency. The cleaning of the panels is done manually (Serja HGE Consultants, 2022).

### 2.3 Services, Infrastructures, and Resources

The following supporting services and infrastructure are on-site.



### 2.3.1 Project personnel and accommodation

Given the fact that the project is of small to medium scale size, the project employs four people who are onsite every day, i.e., one solar plant operator (technician) and three security guards, of which two work the night shifts and one security guard on the day shift. The site operator ensures maintenance of the site when and where necessary.

All four (4) employees commute to the site from Arandis Town; therefore, no on-site accommodation is required.

### 2.3.2 Water consumption

The current record of total water consumption for the period between July 2021 to February 2025 stands at 469m<sup>3</sup>, which indicates a monthly average of 10.6m<sup>3</sup>. The water is primarily used for human consumption (drinking), ablution, and cleaning of solar panels when necessary.

### 2.3.3 Power supply

The Site is supplied with power by ErongoRed via a local connection (substation). The power supply is used for supplying electricity to the control systems and offices on site, to ensure continued operations if the plant does not operate.

### 2.3.4 Fuel supply

The actual solar operations do not require fuel. Therefore, there are no fuel tanks on site. The project vehicles are refuelled off-site at the fuel stations in Arandis Town.

### 2.3.5 Supporting site infrastructure

The site is equipped with an administration/office and control rooms. The Solar Park project is equipped with two administration buildings, one of which serves as a site office (equipped with a toilet) on the western section and the OLC Transfer Station (from the Solar Park to ErongoRed grid) on the eastern side/section - Figure 2-1. At the entrance of the site, there is a security control room, and next to it is the Site Training Centre.



**Figure 2-1: A - The site office (western part of the administrative building) with the Training Centre pointed by the red arrow, B – OLC Transfer Station (eastern side of the administrative building), and C - the security control room at the site gate**

### 2.3.6 Site accessibility (roads)

The PV Plant site is accessible via a local access road. The site and Arandis Town are then connected to the nearest towns, such as Usakos/Karibib and Swakopmund, by the main road (B2). The site is accessed from Arandis Town Centre via an unpaved access road.

### 2.3.7 Waste Management

Different waste onsite is handled and managed as follows:

- Sanitation (sewage): The site is provided with flush toilets that are connected to the Town Council sewer reticulation system.
- Operational solid (general) waste: The waste generated at the site is minimal. This waste is sorted in two waste bins on site and collected once or twice a month for disposal at the dumping site by the Town Council's waste removal contractor. From observations and the absence of vegetation cover (bare desert soils), the site surface is clean with no littering nor oil spills, or leaks on the ground. The central waste storage and collection point onsite near the gate is shown in Figure 2-2.



**Figure 2-2: Central solid waste collection point onsite (drum and refuse bags awaiting collection by the Arandis Town Council)**

- Old and or damaged solar panels (waste): The solar panels function for a period of 20 to 25 years before they can be replaced. The Plant has been in operation for 8 years now (by 2025); therefore, there are no observed or recorded malfunctioning panels.  
Despite the above, as part of the maintenance check onsite, the solar panels are inspected regularly. Should there be any damaged panels that are considered unfit for the project, their serial numbers will be recorded before they are written off. These written-off panels will then be removed and disposed of at the approved and designated hazardous waste management facility.

### 2.3.8 Site safety and security

Apart from the security guards, the project site is well fenced off, with animal-proof wire on the outside and an electrical fence on the inside - Figure 2-3. The fencing is aimed at keeping animals out and preventing the theft and vandalism of the site infrastructure. The electrical fence is connected to a security alarm system that reports to the Plant Operator's phone in the event of a loss of power or breach.



**Figure 2-3: The meshed electric security fence around the Site**

For safety reasons, there is an open space (about 10m) between the panels and the fence to safeguard the panels from outside vandalism by people when they throw things such as stones or objects on top of the panels. The site also has installed spotlights in and around the Plant to provide lighting at night for safety and security measures (Figure 2-4). These lights are self-powered through solar battery power (Serja HGE Consultants, 2022).



**Figure 2-4: Some of the self-powered spotlights that are onsite**



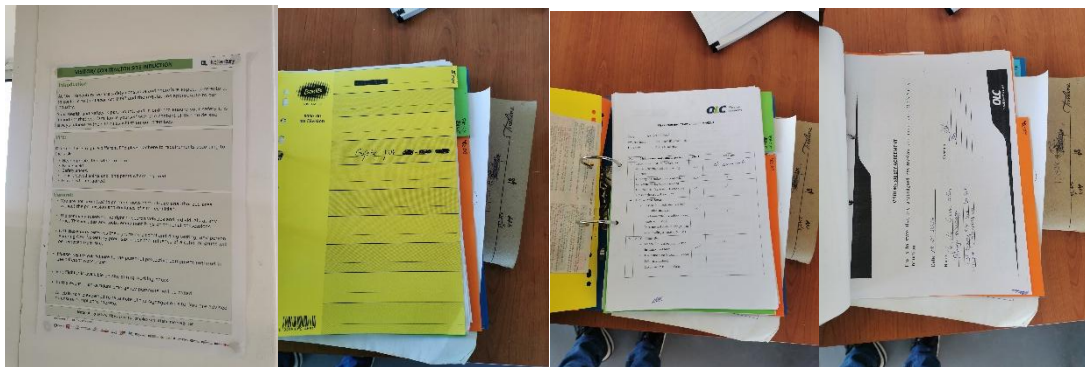
### 2.3.9 Occupational health and safety

All project workers are equipped with appropriate and adequate personal protective equipment (PPE) - Figure 2-5. For minor occupational injuries, there is a first aid kit onsite, and major ones are referred to health facilities in Arandis and or Swakopmund, if necessary.



**Figure 2-5: The Site operator with PPE and Serja HGE Consultants personnel onsite**

To ensure the health and safety of site visitors, health and safety Inductions are provided to visitors and Contractors before visiting the site as per the OLC Arandis Solar Energy standard procedure to ensure continued safety onsite (Figure 2-6).



**Figure 2-6: Health and safety induction notices and files on record in the Site Office**

Moreover, there are emergency response guidelines as well as first aid response (such as heat stress) as well as emergency contact numbers displayed on the office wall - Figure 2-7.



Figure 2-7: The emergency response guidelines and contact numbers

Warning and safety signage: There are warning or cautionary signs onsite, such as the speed limit, PPE and vehicle requirements, and assembly point markings at the site entrance (Figure 2-8).



Figure 2-8: The warning and safety signs (including the assembly point sign) at the Site gate

### 2.3.10 Accidental fire management

A. The site has four fire extinguishers (one for the office, one in the transformer room, and two at the inverter area). The extinguishers are well-serviced with the next service due in August 2025. Photos of the fire extinguishers in the Site office and at the substations are shown in Figure 2-9.





Figure 2-9: Some of the fire extinguishers at the Site (in the office and at the substations)

### 2.3.11 Environmental management and requirements

The site activities are all environmentally cleared, and the ECC was issued on the 26<sup>th</sup> of September 2022 and is valid until the 26<sup>th</sup> of September 2025. The copy of the ECC is pasted in the administration building, as shown in Figure 2-10. To ensure that the ECC remains valid after the 3-year validity period, the ECC renewal application is submitted with the updated EMP to the Environmental Commissioner in June 2025 to allow time for the evaluation of the application for renewal consideration.



Figure 2-10: The copy of the valid ECC in the Site Office

### 3 LEGAL FRAMEWORK: OPERATIONAL PERMITTING & LICENSES

The project's activities are undertaken in a biophysical and social environment. These activities or some of them may even a minimal impact on some of these environmental components. It is therefore necessary to consider the legislation and legal requirements governing the project and its associated activities. The main legal framework presented herein is that of Namibia for the relevant project component under the scope of this document, and this is regarding the authorizations and permitting for project activities as presented in **Error! Not a valid bookmark self-reference..** Regardless, the list of regulatory frameworks provided in the 2022 EMP is still valid for the project activities and should be adhered to.

**Table 3-1: The List of applicable legislation, where required, permits or licenses for the Solar Plant activities**

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this Project
Environmental Management Act EMA (No 7 of 2007)	The Act and its 2012 EIA Regulations aim to ensure that the potential impacts of the development on the environment are carefully considered.	The EMA should inform and guide this EMP development and its implementation for:
Environmental Impact Assessment (EIA) Regulations Government Notice 28-30 (Government Gazette 4878) of February 2012A: <b>Regulated under the Ministry of Environment, Forestry and Tourism (MEFT)</b>	<p>The Act aims to promote the sustainable management of the environment and the use of natural resources. The Environmental Management Act (EMA) is broad, regulating land use development through environmental clearance certification and/or Environmental Impact Assessments. The Act provides for the clearance certification for " <i>(1) The construction of facilities for (a) the generation of electricity and (b) transmission and supply of electricity</i>" which is relevant to the Project.</p> <p>For new projects, the Act requires that projects with significant environmental impacts be subject to an environmental assessment process (Section 27). Regardless of the Solar Park, mitigation measures should be developed for implementation during operations.</p>	<p>-ECC Amendment/Transfer and Renewal: Should the Proponent consider amending/transferring the Project activities, the need to renew the ECC (every 3 years before its expiry date) should be done in application to the Department of Environmental Affairs &amp; Forestry (DEAF):</p> <p><b>Office of the Environmental Commissioner:</b></p> <p><b>Mr. Timoteus Mufeti</b></p> <p><b>Tel: +264 61 284 2701</b></p>

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this Project
	<p>Details requirements for public consultation within a given environmental assessment process (Government Notice No. 30 Section 21).</p> <p>The details the requirements for what should be included in an Environmental Scoping Report (Government Notice No. 30 S8) and an EIA Report (Government Notice No. 30 Section 15).</p>	<p>The Project is already in its operational phase. However, if necessary and required, constant consultations and engagements with the interested and affected parties (stakeholders) should be continued. In case of grievances raised by the neighbouring land users or the Arandis Town Council to the Proponent, this should be addressed and resolved amicably.</p>
<p>Electricity Act No. 4 of 2007: <b>Regulated under the Ministry of Industries, Mines and Energy (MIME) (with Licensing issued by the Electricity Control Board (ECB) of Namibia)</b></p>	<p>The Act provides information on the requirements for electricity generation, trading, transmission, supply, distribution, importation, and export. The ECB of Namibia, under the MIME, exercises control over the provision, use, and consumption of electricity in Namibia; ensures efficiency and security of electricity provision; ensures a competitive environment in the electricity industry in Namibia; and promotes private sector investment in the electricity industry. The board provides for the requirements and conditions for obtaining licenses for the provision of electricity and provides for other incidental matters.</p> <p>All the relevant electricity permits and licenses (such as <b>generation</b>, distribution, and supply licenses) should be applied for and obtained from the relevant regulatory authorities. Part 4 (License, section 17 – Duty to obtain a license or licenses. Subsection 1 (a) generation and (d) supply of electricity. The Proponent should comply with the relevant Sections of Part 4 of the Act that govern the Project activities and ensure timely renewals as stipulated.</p>	<p>The Project activities involve the generation, supply, and transmission of electricity. OLC Arandis Solar Energy is required to apply for the relevant license (electricity generation and transmission) for their operational activities. The Electricity General License should be renewed on time as per the existing License conditions. <u>The Proponent should also notify the ECB (for approval) of any intentions to change or amend the License.</u></p> <p><b>Electricity Control Board (ECB) of Namibia</b></p> <p><b>Tel: +264 61 374 300 (switchboard)</b></p> <p><b>Mr. Francois Robinson:</b></p> <p><b>Manager: Regulatory Support Services</b></p> <p><b>Tel: +264 61 374 319</b></p>



Legislation/Policy/ Guideline	Relevant Provisions	Implications for this Project
Namibia's Green Plan, 1992: <b>Regulated under the Ministry of Environment, Forestry and Tourism (MEFT)</b>	The National Green Plan was drafted by the Ministry of Environment, Forestry and Tourism (MEFT). The document analysed the main environmental challenges facing Namibia and specified actions required to address them. This included a strategic plan for integrated and sustainable environmental management, which outlines key focus areas for sustainable development.	The Proponent should assist in implementing this Plan by sustainably operating in the environment and at the same time, taking care of the environment for its management and protection.
Forestry Act No. 12 of 2001: <b>Regulated under the MEFT</b>	The Act provides for the management and use of forests and related products/resources. It offers protection to any living tree, bush, or shrub growing within 100 metres of a river, stream, or watercourse on land that is not a surveyed erf of a local authority area. In such instances, a licence would be required to cut and remove any such vegetation. These provisions are only guidelines.  The Project is in a desert environment where vegetation is scarce, and some of which are sensitive species.	The Site is in a desert environment with very little to no vegetation. Furthermore, the site is already disturbed by the PV Plant establishment and installation of services and infrastructure. However, young plants such as pax herbs seldom grow onsite under some panels and were observed during the site visit.
Soil Conservation Act (No 76 of 1969): <b>Regulated under the Ministry of Agriculture, Fisheries, Water, and Land Reform (MAFWLR)</b>	The Act makes provision for the prevention and control of soil erosion and the protection, improvement, and conservation of soil, vegetation, and water supply sources and resources, through directives declared by the Minister.	Duty of care must be applied to soil conservation and management measures must be included in the EMP, given the sensitivity of the project site area (desert environment). This is mainly aimed at soil disturbance through unnecessary creation of new tracks and pollution from project-related activities.
The National Heritage Act (No. 27 of 2004)	The Act extends the protection of archaeological and historical sites to private and communal land and defines permit procedures regarding activities at such sites.	Should heritage resources (e.g., artefacts, human remains/bones in the subsurface, etc.) be discovered at some point on and /or around the site, these should be reported to the National Heritage Council (NHC) of Namibia for relocation.
	The Act enables the proclamation of national monuments and protects archaeological sites.	

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this Project
The National Monuments Act (No. 28 of 1969): <b>Regulated under the Ministry of Education, Innovation, Youth, Sport, Arts and Culture (MEIYSAC)</b>		<b>Contact: Mrs. Erica Ndalikokule (NHC Director)</b>  <b>Or Ms. Agnes Shiningayamwe (Regional Heritage Officer)</b>  <b>Tel: +264 61 301 903</b>
Pollution Control and Waste Management Bill: <b>Regulated under the MEFT</b>	The bill aims to “prevent and regulate the discharge of pollutants to the air, water and land” Of particular reference to the Project is: Section 21 “(1) Subject to sub-section (4) and section 22, no person shall cause or permit the discharge of pollutants or waste into any water or watercourse.”  Section 55 “(1) No person may produce, collect, transport, sort, recover, treat, store, dispose of or otherwise manage waste in a manner that results in or creates a significant risk of harm to human health or the environment.”	The Proponent and their workers should continue with the good waste management work (directly or indirectly) to ensure that the waste does not cause an environmental threat and degradation.  <b>No permit or license required.</b>
Public Health Act (No. 36 of 1919): <b>Regulated under the Ministry of Health and Social Services (MHSS)</b>	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.”	The Proponent and all its employees should ensure compliance with the provisions of these legal instruments. This includes the provision of health and safety measures, wearing of Personal Protective Equipment (PPE), Health & Safety Training, etc.  <b>No permit or license required.</b>
Health and Safety Regulations GN 156/1997 (Government Gazette 1617): <b>Regulated under the MHSS</b>	Details various requirements regarding the health and safety of labourers.	
Public and Environmental Health Act No. 1 of 2015: <b>Regulated under the MHSS</b>	To provide a framework for a structured, uniform public and environmental health system in Namibia, and to provide for incidental matters.	

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this Project
Road Traffic and Transport Act, No. 22 of 1999: <b>Regulated under the Ministry of Works and Transport (MWT) (Roads Authority of Namibia)</b>	The Act provides for the establishment of the Transportation Commission of Namibia; for the control of traffic on public roads, the licensing of drivers, the registration and licensing of vehicles, the control and regulation of road transport across Namibia's borders; and for matters incidental thereto.	<p>Mitigation measures should be provided for if the roads and traffic impact cannot be avoided. The relevant access road permits must therefore be applied for.</p> <p>The Proponent should continue compliance with access roads and regulations, as well as permit conditions that may have been issued to them by the Ministry of Works and Transport's Roads Authority. If not in possession, a Road Access should be applied for from the Roads Authority.</p> <p><b>Contact: Mr Eugene de Paauw (Roads Authority – Specialist Road Legislation), MWT</b>  <b>Tel.: -264 61 284 7027</b></p>
Labour Act (No. 6 of 1992): <b>Regulated under the Ministry of Justice and Labour Relations (MJLR)</b>	MJLR is aimed at ensuring harmonious labour relations through promoting social justice, occupational health and safety, and enhanced labour market services for the benefit of all Namibians. This ministry ensures effective implementation of the Labour Act No. 6 of 1992, specifically its Regulations, No. 156 Labour Act, 1992: Regulations relating to the health and safety of employees at work.	<p>The Proponent should ensure that the Solar Park operations and maintenance works do not compromise the safety and welfare of workers.</p> <p>No permit or license required. However, if there is a need to run 12-hour shifts onsite, permission is needed from the MJLR.</p> <p><b>Contact: Ms. Kyliki Sihlala, Labour Commissioner; Tel. +264 61 206 6111</b></p>

## 4 ENVIRONMENTAL IMPACT AND MANAGEMENT ACTION PLANS

This chapter presents the potential impacts that were identified at the time the environmental clearance was issued, the environmental management measures recommended, and the implementation checklist (status of EMP implementation). It is under this chapter that the Environmental Consultant indicates whether the OLC Arandis Solar Energy has been maintaining the implementation of management and mitigation action plans on site to manage and mitigate the significance of the adverse potential impacts stemming from the current project phase and associated activities.

### 4.1 Key Potential Impacts

The main potential (positive and negative) impacts associated with the project activities are as follows:

#### Positive impacts (benefits)

- Production of renewable energy.
- Contribution to local and national rates, levies, and taxes, as well as leasehold and rates to the Arandis Town Council.
- Employment opportunities: The Project operations have created some job opportunities for the four onsite people (one technician/operator and three security guards. i.e., one guard for the day shift and two guards for the night shift), as well as offsite personnel, like at the offices outside Arandis (in Windhoek).
- Goods and Services procurement opportunities.
- Skills development and Training in the solar (renewable) energy sector

#### Negative (adverse) impacts

- Impact on local biodiversity (fauna and flora), low in significance and is well-managed.
- Environmental pollution (solid waste and wastewater): There is minimal waste generated onsite. Therefore, the impact significance is low.
- Health and safety risks: The mishandling of site equipment and machinery could lead to injuries to workers and visitors. The site has good existing safety and health procedures (inductions and PPE) in place. Therefore, the risk is low.
- Visual impact to locals and travellers on the B2: The site is in an already disturbed area of the Arandis Townlands, with other surrounding land uses such as the Town Council's sewage management works northeast of the site and a garden to the immediate east of the site. Therefore, the impact significance is low.
- Vehicle traffic safety: The site has low traffic flow as the only vehicles are the operational ones that are occasionally on-site. Therefore, the impact significance is low.

## 4.2 EMP Implementation Roles and Responsibilities

This section is presentation of the roles of different parties involved in the project cycle (for its operations and maintenance) and their respective responsibilities towards the implementation of the EMP.

This EMP informs all relevant parties listed below and everyone employed at the site of their duties in the fulfillment of the legal requirements for the project activities. This is done to prevent and mitigate the potential negative environmental impacts. All parties should note that obligations imposed by the EMP are legally binding in terms of the Environmental Clearance granted by MEFT to:

- Ensure compliance with regulatory authority stipulations and guidelines, which may be local, provincial, national, and/or international.
- Verify environmental performance through information on impacts as they occur.
- Provide feedback for continual improvement in environmental performance.
- Identify a range of mitigation measures that could reduce and mitigate the potential impacts to minimal or insignificant levels.
- Detail specific actions deemed necessary to assist in mitigating environmental impacts.
- Create management structures that address the concerns and complaints that may be raised by interested and affected parties (I&APs) about the project; and
- Establish a method of monitoring and auditing environmental management practices for the project.

OLC Arandis Solar Energy (the Proponent) is ultimately responsible for the implementation of this EMP. To ensure the full implementation of the EMP, the O&L Centre will be committed to providing and assigning the following resources to OLC Arandis Solar Energy (the Proponent), who will:

- Assist with safety-related inspections and audits (the Safety Officer); and
- Conduct Bi-annual reporting and assist with inspections and audits from an environmental perspective (Environmental Officer).

The roles and responsibilities of all delegates/parties involved in the effective implementation of this EMP are set in. Table 4-1.

**Table 4-1: The EMP implementation roles and responsibilities**

Role	Responsibilities
OLC Arandis Solar Energy (The Proponent)	-Managing the implementation of this EMP and updating and maintaining it when necessary.  -Management and monitoring of individuals and/ or equipment on-site in terms of compliance with this EMP  -Liaising between the local and regional leadership and the community.

Role	Responsibilities
	<ul style="list-style-type: none"> <li>-Ensure effective communication with stakeholders, media (if necessary), and the public.</li> <li>-Managing public relations issues and collaborating with personnel, and maintaining project-related open communication among personnel.</li> </ul>
Project or Site Manager (as appropriate)	<ul style="list-style-type: none"> <li>-Ensure that relevant commitments contained in the EMP Action Plans are adhered to.</li> <li>-Ensure relevant staff are trained in procedures entailed in their duties.</li> <li>-Maintain records of all relevant environmental documentation for the project.</li> <li>-Cooperate with all relevant interested and affected parties/stakeholders.</li> <li>-Development and management of schedules for daily activities.</li> </ul>
Safety Officer	<ul style="list-style-type: none"> <li>-Enforce compliance with health, safety, and environmental regulations.</li> <li>-Develop and implement site-specific safety policies and procedures.</li> <li>-Conduct regular safety audits and inspections.</li> <li>-Identify potential hazards (electrical, fire, working at heights, etc.).</li> <li>-Perform risk assessments and recommend control measures.</li> <li>-Monitor the implementation of safety measures and controls.</li> <li>-Conduct safety inductions for new workers and visitors at the site.</li> <li>-Organize regular safety training and toolbox talks.</li> <li>-Promote awareness of the use of personal protective equipment (PPE).</li> <li>-Investigate accidents, incidents, and near-misses, and maintain incident and accident records.</li> <li>-Recommend and follow up on corrective and preventive actions.</li> <li>-Maintain records of safety inspections, permits, and training.</li> <li>-Monitor and report on safety performance indicators.</li> <li>-Develop and test emergency response and evacuation plans.</li> <li>-Ensure the availability of first aid kits and trained first aiders.</li> <li>-Coordinate fire drills and emergency simulations.</li> <li>-Supervise safe handling and storage of hazardous materials (e.g., batteries, chemicals).</li> </ul>

Role	Responsibilities
Plant Operator (as assisted by the assigned O&L Centre Resource for safety and environment)	<p>-Conducting site inspections of all areas for the implementation of this EMP (monitor and audit the implementation of the EMP).</p> <p>-Advising the Project Manager on the removal of person(s) and/or equipment not complying with the provisions of this EMP.</p> <p>-Undertaking an annual review of the EMP and recommending additions and/or changes thereto (this document).</p> <p>-Ensuring that the Project activities on site are conducted per the International System organization (ISO) standard 14001: 2015.</p> <p>-Reviewing the EMP annually and amending the document when necessary.</p>
Site (Project) Workers and Visitors	<p>The project workers have a personal responsibility to aid in the implementation of the EMP while present and working on site. Therefore, they will be required to adhere to the relevant management and mitigation measures to collectively protect the environment and promote environmental sustainability.</p> <p>Site visitors should be inducted on the site's operational procedures, particularly environmental, health, and safety measures.</p>

### 4.3 Updated Environmental Management and Mitigation Measures

The 2022 EMP has been reviewed and revised based on the period between September 2022 (when the ECC was issued) and June 2025 (current conditions onsite and the time of applying for an ECC renewal). This has been done to confirm the implementation of the management and mitigation measures between September 2022 to when the ECC renewal application is done (June 2025). Where further recommendations or action plans (measures) are required to improve environmental sustainability and ensure compliance with legal requirements, this is indicated in Table 4-2. The measures provided herein focus on managing and mitigating adverse (negative) impacts associated with or potentially arising from different project activities. The aim is to reduce the significance of these impacts while maximizing the benefits (positive impacts) of the overall project.

It should be noted that OLC Arandis Solar Energy has been consistent with submitting bi-annual environmental monitoring reports to the MEFT, and these are well-documented in their files. Please refer to the proof of submission of the bi-annual environmental monitoring reports attached hereto (Appendix B).

The Management action plans (measures) recommended for the potential impacts and updated (where deemed necessary) are based on the following phases:

- Operational and Maintenance Phase (Table 4-2), and Decommissioning measures (Table 4-3). These would be considered should the Proponent consider ceasing the Plant operations.

Table 4-2: Project Operations and Maintenance – Current and Updated Management and Mitigation Measures

Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
Management and Monitoring	Lack of EMP implementation and adherence to the ECC conditions	<ul style="list-style-type: none"> <li>-Adhere to all Namibian Legislation, including Best Practice Guidelines.</li> <li>-Ensure that all aspects related to the Environmental Management Plan (EMP) are implemented.</li> </ul>	-OLC Arandis Solar Energy	None. However, continued improvement should be made when and where necessary.
A reporting system for monitoring aspects of operations and maintenance as outlined herein	Reporting	<ul style="list-style-type: none"> <li>-Establish a reporting system to report on aspects of operation and maintenance.</li> <li>-Keep monitoring reports (Bi-annual reporting) on file for submission with ECC renewal applications where needed.</li> </ul>	<ul style="list-style-type: none"> <li>-OLC Arandis Solar Energy</li> <li>-Environmental Officer</li> </ul>	None.
Training, including awareness and inductions	Lack of safety, health, and environmental training for workers, as well as inductions for site visitors	<ul style="list-style-type: none"> <li>-Train employees in matters related to the project's social and environmental performance and Namibia's regulatory requirements.</li> <li>-Ensure adequate environmental awareness training for all personnel. Give environmental induction presentations to all personnel.</li> </ul>	-Project Manager	None. However, continued improvement should be made when and where necessary.



Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
Environmental clearance	Renewal of the ECC and submission of bi-annual monitoring reports, as well as amendments to the ECC and EMP	-None	-OLC Arandis Solar Energy  -Project Manager	-The ECC should be renewed every 3 years (preparing to commence at least 2 months before expiry (if necessary) and submission of the ECC renewal application to reach the MEFT office at minimum 1 month before the expiry date of the current ECC.  -Amendments to the EMP should be communicated to the Office of the Environmental Commissioner.  -Plans to transfer the ECC to a different person or company should be communicated to the Environmental Commissioner by applying for the ECC Transfer and submitting the updated EMP.
Labour and Recruitment, as well as procurement of goods and services	Appointments	-Appointment of contractors and employees, and enter into an agreement which includes the EMP.  -Ensure that the contents of the EMP are understood by the employees, contractors, and all personnel present on site.	-OLC Arandis Solar Energy (Human Resources)	None.

Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
	Employment and hiring of local and skilled people to run the Plant and local contractors for specialized Site operational and maintenance	<p>-Where skills exist, local Namibian contractors and employees must be contracted and employed, respectively. Deviations from this must be justified.</p> <p>-The tenders for the provision of locally available goods and services should be given to local small and medium businesses (SMEs).</p>	-OLC Arandis Solar Energy (Procurement)	None. However, continued improvement should be made when and where necessary.
Management system in Safety, Health and Environment (SHE)	Provision and effective implementation of SHE management systems	<p>-Make provisions to have a SHE Coordinator to implement the EMP and oversee occupational health and safety onsite.</p> <p>-Risk Management / Mitigation / Emergency Response Plan and SHE Manuals, such as Induction pamphlets, should be in place and updated as deemed necessary.</p> <p>-There should be adequate protection and liability insurance coverage for incidents.</p> <p>-Ensure compliance with the provisions of all relevant safety standards.</p> <p>-There should be procedures, equipment, and materials required for emergencies.</p>	<p>-OLC Arandis Solar Energy</p> <p>-Project Manager</p>	None. However, continued improvement should be made when and where necessary.

Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
Vehicular Traffic Use and Safety	The site is located off the main B2 road, and operational activities may potentially have some impact on the movement of traffic to the site (on the B2 and site access roads) when transporting material, supplies, and equipment.	<ul style="list-style-type: none"> <li>-The project activities and vehicles should only make use of the existing access road to the site and avoid the creation of new tracks.</li> <li>-The vehicle drivers should have valid and appropriate driver's licenses.</li> <li>-No person shall drive or use any vehicle on site whilst under the influence of alcohol or any other narcotic substance or in such a way that is dangerous to human life or that may cause damage to any property or the environment.</li> <li>-Proper traffic management systems are in place.</li> <li>-Adherence to the speed limit to avoid running over reptiles and amphibians.</li> <li>-Appropriate road signage and warnings should be erected or put up at the site access roads.</li> <li>-Existing tracks leading to the site should be used, and unnecessary new tracks or roads should not be created.</li> <li>-Traffic management plans on and around the site should be developed when necessary.</li> </ul>	<ul style="list-style-type: none"> <li>-Project Manager</li> <li>-Plant Operator</li> </ul>	None. However, continued improvement should be made when and where necessary.
Labour and Working Conditions	Poor labourers and working conditions on-site	<ul style="list-style-type: none"> <li>-Establish, maintain, and improve the worker-management relationship. The employment relationship should be based on equal opportunity and fair treatment, and discrimination is not allowed.</li> <li>-Comply with Namibia's labour and employment laws.</li> </ul>	<ul style="list-style-type: none"> <li>-OLC Arandis Solar Energy</li> <li>-Project Manager</li> </ul>	None. However, continued improvement should be made when and where necessary.

Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
		<ul style="list-style-type: none"> <li>-Promote safe and healthy working conditions and the protection and promotion of worker health.</li> <li>-Document and communicate the Working Conditions and Terms of Employment.</li> <li>-Respect Collective Agreements and the right of workers to organise and bargain collectively.</li> <li>Implement a Grievance Mechanism.</li> </ul>	-Safety Officer	
Occupational and Community Health and Safety and Security	Potential injuries and health risks associated with a lack of proper mitigation measures	<ul style="list-style-type: none"> <li>-Adhere to all Namibia's Health and Safety Regulations (Labour Act, 1992: Regulations Relating to the Health and Safety of Employees at Work).</li> <li>-A SHE Representative should be appointed once the staff complement reaches 20.</li> <li>-Occupational Health and Safety Training to be provided to all employees. Ensure that qualified first aid can be provided at all times.</li> <li>-Comply with all safety regulations regarding electricity supply.</li> <li>-Ensure that employees are trained in the use of appropriate firefighting equipment and ensure that such equipment is on hand at all times.</li> <li>-Provide and ensure the active use of PPE.</li> </ul>	<ul style="list-style-type: none"> <li>-OLC Arandis Solar Energy</li> <li>-Project Manager</li> <li>-Safety Officer</li> </ul>	None. However, continued improvement should be made when and where necessary.

Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
		<p>-Prevent communicable disease (e.g. Sexually Transmitted Infections (STIs) such as HIV transmission): provide surveillance and active screening and treatment of employees; prevent illness among employees (through health awareness and education initiatives); ensure ready access to medical treatment, confidentiality and appropriate care, particularly concerning migrant workers; and promote immunization.</p> <p>-Ensure that security arrangements are in place.</p>		
Water Resources Use	Over-utilization and wastage of water resources	<p>-Water should be used efficiently, and recycling and reusing of water onsite should be encouraged.</p> <p>-Water conservation awareness and saving measures training should be provided to all the Site Personnel so that they understand the importance of conserving water and become accountable.</p>	<p>-Project Manager</p> <p>-Plant Operator</p> <p>-Environmental Officer</p>	None. However, continued improvement should be made when and where necessary.
Accidental Fires	Outbreak of uncontrolled or accidental fires due to the use of machinery or the presence of open fires made by workers onsite.	<p>-Firefighting measures as per the Material Safety Data should be provided, implemented, and adhered to.</p> <p>-The fire extinguisher should be properly serviced, with service date plans indicated.</p> <p>-Open fires are strictly prohibited on-site.</p>	<p>-Project Manager</p> <p>-Plant Operator</p> <p>-Safety Officer</p>	None. However, continued improvement should be made when and where necessary.

Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
		<p>-All personnel must be sensitised about responsible fire protection measures and good housekeeping, such as the removal of flammable materials, including waste, dry wood, and hydrocarbon-soaked soil from the vicinity of the site. Regular inspections should be carried out to check and remove these materials from the site.</p> <p>-The Site should be equipped with sufficient firefighting resources. Regular surveys of the firefighting equipment should be carried out.</p> <p>-A responsive fire prevention plan does not solely include the availability of firefighting equipment, but more importantly, it involves premeditated measures and activities to timely prevent, curb, and avoid conditions that may result in fires.</p>		
Health, Safety, and Security	Mishandling of different operational equipment, materials, and tools may lead to injuries and health risks or life-threatening risks.	<p>-All Health and Safety standards specified in the Labour Act should be complied with. The responsible contractor must ensure that all staff members are briefed about the potential risks of injuries on site.</p> <p>-Appropriate signage and warnings should be erected or put up at risky or danger-prone site areas, if any.</p>	<p>-Project Manager</p> <p>-Plant Operator</p> <p>-Safety Officer</p>	None. However, continued improvement should be made when and where necessary.

Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
		<p>-Ensure all workers are issued with protective eyewear and applicable PPE when working with photovoltaic panels or handling other materials and equipment on site.</p> <p>-Adhere to Health and Safety Regulations of personal protective clothing, first aid kits, warning signs, etc.</p> <p>-Ensure that adequate emergency facilities, including first aid kits, are available on site, and knowledge of administering them is provided to workers. <u>A SHE Induction should be provided to every new person entering the site.</u></p> <p>-Equipment that must be locked away on site and must be placed in a way that does not encourage criminal activities.</p> <p>-Security personnel should prohibit unauthorised entry to the Site.</p>		
Soils	Physical disturbance of sensitive desert land (soils) by the movement of operational vehicles and machinery, and physical site works	<p>-Adjacent areas to the project site and unused areas within the site should not be disturbed.</p> <p>-The use of existing tracks, such as access roads, is essential to minimize the footprints on the already sensitive desert soils over time.</p>	<p>-Project Manager</p> <p>-Plant Operator</p> <p>-Environmental Officer</p>	None. However, continued improvement should be made when and where necessary.

Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
		<p>-Ensure that when areas outside the project site boundaries are disturbed by project-related activities, rehabilitation should be conducted immediately once the activity has been completed.</p> <p>-Consider a Monitoring and Response Approach if the 10-year period splash flooding events occur. This would include setting up a channel that acts as a diversion of runoff (rainwater flowing down the panels) to the drainage point where the water can freely flow elsewhere in the area to recharge groundwater resources and without eroding a significant amount of site soils.</p>		
Dust and gaseous emissions	Dust and emissions generated during the operations are expected from untarred roads, particularly on windy days, from exposed desert soils.	<p>-Site Personnel are to be issued with dust masks for health reasons when needed.</p> <p>-Regular visual inspections should be done.</p> <p>-A complaint register should be kept on site.</p>	<p>-Project Manager</p> <p>-Plant Operator</p> <p>-Safety Officer</p>	None. However, continued improvement should be made when and where necessary.
Waste generation and management	There is a generation of both general and human waste on-site.	<p>-The waste should continue to be disposed of at an approved and appropriate waste site (in Arandis).</p> <p>-Temporary waste disposal facilities should be present on site. This should include separate containers for products that can be reused or recycled.</p>	<p>-Project Manager</p> <p>-Plant Operator</p> <p>-Environmental Officer</p>	None. However, continued improvement should be made when and where necessary.



Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
	Potential soil polluted by hydrocarbons that may be handled on site, especially from accidental oil or fuel leaks from vehicles or equipment, should be treated as hazardous waste.	<p>-Recycling of solid waste should be encouraged to minimise the amount of waste that goes to landfill.</p> <p>-The Site Personnel and visitors should continue using the provided ablution facilities to ensure continued better sewage management.</p> <p><b><u>-Solid waste removal from the Plant:</u></b> The issue of waste falling and blown off the garbage trucks during transportation from the Site should be reported to the Arandis Town Council for their waste collection/removal contractor to secure the waste and improve on this, thus preventing further environmental pollution.</p> <p>-For solar panels that will be unfit for the project or damaged, their storage and disposal should be controlled and managed by ensuring that they end up at an approved waste site.</p>		
	Management of old and damaged solar panels	-Full installation inspection should be conducted monthly, and the results of the inspection will be included in the Operational Maintenance Report. If any of them is found to be faulty and beyond repair, they should be removed, handled with care, and disposed of at the approved waste management facility in Arandis, or any waste disposal or storage facility preferred by the Proponent.	<p>-Project Manager</p> <p>-Plant Operator</p> <p>-Environmental Officer</p>	None. However, continued improvement should be made when and where necessary.

Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
		<p>-Old solar panels should be stored separately on site, i.e., in their own secured space, until such a time that they can be safely transported away to the approved waste management facility off-site.</p> <p>-No written off/damaged or project-unfit solar panels should be disposed of at any other waste facility other than the designated waste facility.</p>		
Water resources (groundwater) and soil contamination	<p>Porous surface substrate can allow unwanted, hazardous, and ecologically detrimental substances to seep down to the water table either at the site of a spill or after being washed away by surface flow during heavy rainy seasons (flash floods).</p> <p>Accidental spills of fuel and other chemicals that may be used on-site might occur.</p>	<p>-All precautions are to be taken to prevent contamination of the soil, as this could enter the ecosystem.</p> <p>-Proper training of project personnel would reduce the possibility of the impact occurring, especially with onsite soil contamination.</p> <p>-Contaminated soil must be transported away from the site to an approved, appropriately classified waste disposal site. Contaminated soil should be remediated.</p>	<p>-Project Manager</p> <p>-Plant Operator</p> <p>-Environmental Officer</p>	None. However, continued improvement should be made when and where necessary.
Archaeological and Heritage Impact	<p>Sites or objects with archaeological or cultural significance might be uncovered on site. These can include graves, stone walls, or cultural artefacts.</p>	<p>-Upon discovery of such sites or objects at some point on site or surroundings, it must be reported to the National Heritage Council of Namibia for further action/handling, and permit issuance for possible conservation.</p> <p>-The destruction, damage, or displacement of such sites is not allowed, but should be reported to the National Heritage Council of Namibia.</p>	<p>-Project Manager</p> <p>-Plant Operator</p>	None. However, continued improvement should be made when and where necessary.

Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
Visual Impact	This is an impact that affects the aesthetic appearance of the site.	<p>-Keep the site neat and dispose of waste regularly.</p> <p>-The current colour of the solar panels and associated structures should be maintained and kept the same colour, but not repainted to a colour that will further cause a significant contrast leading to visual nuisance (uncomfortable glare) to visitors or travellers.</p>	<p>-OLC Arandis Solar Energy</p> <p>-Project Manager</p> <p>-Plant Operator</p>	None. However, continued improvement should be made when and where necessary.
Impact on biodiversity (fauna and flora) and ecosystem	Impacts on the ecosystem from the increase in the human footprint in the area may lead to land degradation, illegal collection of plant materials, and poaching by project workers and others.	<p>-Operational activities should be limited within the site boundaries. Further land clearing should be avoided to prevent unnecessary habitat loss.</p> <p>-All employees should be educated about the value of biodiversity preservation.</p> <p>-Strict conditions prohibiting the harvesting of fauna and the poaching of fauna should be incorporated into employment contracts.</p> <p>-Killing, injuring, hunting, capturing, disturbing, or feeding of any wild animal (reptiles or mammals) or removing any part of any wild animal, whether alive or dead, is prohibited.</p> <p>-The removal, destruction, damage, or disturbance of any egg, nest, or burrow on and around the site is strictly prohibited.</p>	<p>-Project Manager</p> <p>-Plant Operator</p> <p>-Environmental Officer</p>	None. However, continued improvement should be made when and where necessary.

Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
		<p>-The birds that are nesting on the roofs of the Site Substations should not be disturbed or removed. The removal of nests should only be done if they pose a health risk or interfere with the operations. This should be communicated with MEFT's Park Directorate.</p> <p>-There are encounters of Puff Adder (<i>Bitis arietans</i>) snakes crossing the Site. These should not be killed or harmed, but allowed to move away. Alternatively, the MEFT's Park should be notified for safe removal and release into the wild.</p> <p>-It is prohibited to pick, collect, destroy, damage, tamper with, disturb, or remove any vegetation, mineral, or any other object of botanical, zoological, geological, archaeological, historical, or any other scientific interest, or part thereof. <b>Appropriate permits should be obtained if there are intentions to carry out any or some of these forms of "disturbance" to biodiversity.</b></p> <p>-Should the encountered pax (the small plants under the panels) be found to be inconveniencing the Plant operations, the Project Manager should consult with the Forestry Directorate at MEFT to safely translocate the vegetation off-site.</p>		

Aspect	Activity/Impact	Current EMP Implementation Measures	Responsibility	Additional recommended mitigation measures
		-A register of plant species and dead animals or snakes found on site should be kept. Photos should be taken and recorded. The details should include date of encounter, animal/plant name, and location (location reference/description or GPS coordinates).		

**Table 4-3: The Decommissioning and Rehabilitation Measures of Project Activities**

Aspect	Impact	Rehabilitation Measures	Responsibility	Key Performance Indicator (KPI)
Rehabilitation	Disturbance and damage to land (site areas)	<p>-All drilled holes related to the project activities, such as array establishment, should be backfilled.</p> <p>-All waste generated and stored on site at the time of closure should be disposed of at the respective nearest solid waste management site.</p> <p>-The stockpiled topsoil should be levelled.</p> <p>-Any temporary setup on site should be dismantled, and the area rehabilitated as far as practicable.</p> <p>-Disturbed site areas should be progressively rehabilitated by stockpiling and backfilling.</p> <p>-Provision of both financial and technical resources for rehabilitation should be made.</p>	-OLC Arandis Solar Energy	<p>-Backfilled holes and levelled stockpiled topsoil and overburden rocks</p> <p>-No sign of waste or littering seen on site and around site areas, and carrying away of waste, and removal of vehicles and equipment from the site</p> <p>-Site structures are dismantled, and materials are taken away from the site.</p>

## 5 ENVIRONMENTAL MONITORING, COMPLIANCE, AND AUDITING

To ensure that the implementation of recommended environmental management measures is working and produces the desired results (to maintain the low significance ratings of impacts), the impacts and implementation of measures will need to be monitored and reported on.

### 5.1 Monitoring of EMP Implementation and ECC Renewal

Environmental (during the validity period of the ECC): Bi-Annual Compliance Monitoring of the EMP implementation should be continued throughout the project cycle, i.e., twice a year (every 6 months). Should the ECC be renewed, environmental monitoring reports will be compiled and submitted to the DEAF for archiving through provision made on the ECC Portal (as currently done for the ECC APP-10344). This practice will make the ECC renewal easier when it is about to expire in the future. Therefore, the EMP implementation should be effectively monitored, and monitoring reports submitted to the DEAF at the MEFT. The submission is not only done for record-keeping purposes, but also in compliance with the environmental legislation and conditions of the new ECC.

### 5.2 Environmental Awareness

OLC Arandis Solar Energy should ensure that the employees and any third party who carries out all or part of their obligations are adequately trained regarding the implementation of the EMP, as well as regarding environmental legal requirements and obligations. Training may be conducted by the Safety Officer, where necessary.

Environment and health awareness training programmes should be targeted at three distinct levels of employment, i.e., the executive, middle management, and labour. Environmental awareness training programmes shall contain the following information:

- The names, positions, and responsibilities of personnel to be trained.
- The framework for appropriate training plans.
- The summarized content and schedule for the presentation of the training courses.
- The Safety Officer shall ensure that records of all training interventions are kept by record-keeping and documentation control requirements as set out in this EMP. The training records shall verify each of the targeted personnel's training experience.

The recommendations and conclusions made for this document are in the next chapter.

## 6 RECOMMENDATIONS AND CONCLUSIONS

### 6.1 Recommendations

The project and associated activities are well limited within the site boundaries, and OLC Arandis Solar Energy has been compliant with the EMP requirements as recommended, as well as submitting bi-annual environmental monitoring reports to the MEFT between September 2022 and June 2025. Thus, OLC Arandis Solar Energy has been committed to environmental management and ensuring sustainability.

Therefore, Serja Consultants are confident that the potential negative impacts associated with the project activities onsite can continue to be mitigated by effectively implementing the recommended management action measures. Furthermore, with more effort and commitment put into continuous improvement on EMP implementation, the protection of the environment and management of negative impacts can be achieved. It is therefore recommended that the project and its associated activities be granted a new ECC, provided that:

- All the management measures (mitigations) recommended herein continue to be implemented effectively, with compliance emphasis pointed out in Table 4-2 and where required, improvement should be effectively put in place.
- All required permits, licenses, approvals, and document renewals for the project activities now and in the future are obtained as required and renewed accordingly.
- OLC Arandis Solar Energy and its project workers, contractors (and subcontractors), and or specialists comply with the legal requirements governing their project and its associated activities.
- All the necessary environmental and social (occupational health and safety) precautions are adhered to.
- To ensure timely renewal of the next ECC, the ECC renewal application should be submitted at least one month before the expiry date of the valid ECC (as stated in the current ECC). This is to allow time for the evaluation of the ECC application and updated EMP by the DEAF and approval by the Environmental Commissioner.
- The EMP implementation monitoring (bi-annual environmental monitoring) should be continued, and bi-annual environmental monitoring reports submitted to the MEFT as usual, and reports uploaded on the ECC Portal. This would make the next ECC renewal processes easier because of the in-between track records of monitoring before the expiry date of the previous ECCs.

## 6.2 Conclusions

The Environmental Consultant recommends that the 2022 ECC be renewed so that OLC Arandis Solar Energy can continue with the project activities and continue to positively contribute to the local, regional, and national development through this economic opportunity (particularly the employment, food security, and revenue).

The site is generally well-kept and equipped with the necessary and required services infrastructure, well-maintained, and adheres to the site and activity-specific environmental management requirements. Therefore, the Environmental Consultant trusts that OLC Arandis Solar Energy will continue to maintain the same commitment towards environmental sustainability and ensure the timely renewal of all their ECCs in the future.

In conclusion, OLC Arandis Solar Energy, its management, workers, contractors, and or specialists should continue with the effective implementation of the recommended management measures to protect both the biophysical and social environment and promote sustainable development.



**APPENDIX A: COPY OF THE CURRENT AND VALID  
ENVIRONMENTAL CLEARANCE CERTIFICATE (ECC) –  
ECC NO. APP-10344**



**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**

**OLC Arandis Solar Energy (Pty) Ltd**  
**P. O. Box 16, Windhoek**

**TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY**

**The Operations and Maintenance of the Existing 3-Megawatt (MW) Solar  
Photovoltaic (PV) Park within the Townlands of Arandis, Erongo Region.**

Issued on the date: **2022-09-26**

Expires on this date: **2025-09-26**



**ENVIRONMENTAL COMMISSIONER**

**(See conditions printed over leaf)**

This certificate is printed without erasures or alterations

**Reduce**  
**Reuse**  
**Recycle**





REPUBLIC OF NAMIBIA

## MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM

Tel: (00 26461) 284 2111

Fax: (00 26461) 232 057

Cnr Robert Mugabe &  
Dr Kenneth Kaunda Street  
Private Bag 13306  
Windhoek  
Namibia

### OFFICE OF THE ENVIRONMENTAL COMMISSIONER

#### NOTIFICATION OF DECISION

REF NUMBER: ECC- AP10344

DATE OF ISSUE: 26 SEPTEMBER 2022

#### DETAILS OF PROPONENT:

OLC Arandis Solar Energy (Pty) Ltd  
P. O. Box 16  
Windhoek  
Namibia

Dear Sir/ Madam

**SUBJECT: NOTIFICATION ON APPLICATION FOR ENVIRONMENTAL CLEARANCE TO UNDERTAKE THE PROPOSED LISTED ACTIVITY:** The Operations and Maintenance of the Existing 3-Megawatt (MW) Solar Photovoltaic (PV) Park within the Townlands of Arandis, Erongo Region.

**Notice is herewith given** in accordance with section 37(2) of the Environmental Management Act, Act 7 of 2007 and Environmental Impact Assessment Regulations of 2012 (GG 4878): that a decision in respect to your application No. **APP 10344** for Environmental Clearance Certificate to undertake a listed activity has been reached.

#### DECISION

An Environmental Clearance Certificate (ECC) to undertake the listed activities specified in the environmental assessment report and draft management plan dated June 2022, is granted (ECC- AP10344). The applicant / proponent is therefore advised to comply with conditions of approval set out in **Section C** of this notification.

#### A. DETAILS OF THE PROPOSED ACTIVITY

##### A1: TITLE OF THE PROPOSED ACTIVITY

The Operations and Maintenance of the Existing 3-Megawatt (MW) Solar Photovoltaic (PV) Park within the Townlands of Arandis, Erongo Region.

**“Stop the poaching of our rhinos”**

1  
All official correspondence must be addressed to the Executive Director





## **A2: DETAILS OF ASSESSMENT PRACTITIONER**

Serja Hydrogeo-Environmental Consultants

Mobile: +264 81 749 9223

Email: [eias.public@serjaconsultants.com](mailto:eias.public@serjaconsultants.com)

Postal Address: P. O. Box 27318 Windhoek, Namibia

## **A3: LOCATION OF PROPOSED ACTIVITY**

(Annexure A – proposed site map)

## **B. RELEVANT LISTED ACTIVITIES**

Legislation	Description of Listed Activity	Relevance to Proposed Activity
Regulation 29(sub-regulation 5) of Government Notice No. 29 of 2012	INFRASTRUCTURE 10.1 The construction of- (a) oil, water, gas and petrochemical and other bulk supply pipelines; (b) public roads; (c) railways and harbours; (d) airports and airfields; (e) any structure below the high water mark of the sea; (f) cableways; (g) communication networks including towers, telecommunication and marine telecommunication lines and cables; (h) motor vehicle and motorcycle racing and test tracks; (i) the outdoor racing sites of motor powered vehicles including - (i) motorcars; (ii) trucks; (iii) motorcycles; (iv) quad bikes; (v) boats; and (vi) jet skis; (j) masts of any material or type and of any height, including those used for telecommunication broadcasting and radio transmission, but excluding - (i) flag poles; and (ii) lightning conductor poles. 10.2 The route determination of roads and design of associated physical infrastructure where - (a) it is a public road; (b) the road reserve is wider than 30 meters; or (c) the road caters for more than one lane of traffic in both directions.	The Operations and Maintenance of the Existing 3-Megawatt (MW) Solar Photovoltaic (PV) Park within the Townlands of Arandis, Erongo Region.

## **C. CONDITIONS**

### **C1: Conditions of Approval**

1. This certificate does not in any way hold the Ministry of Environment 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.
2. This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project.
3. Regular environmental monitoring and evaluations on environmental performance should be conducted. Targets for improvements should be established and monitored throughout this process.



4. This environmental clearance is valid for a period of 3 (three) years, from the date of issue unless withdrawn by this office.

**C2: Clearance Certificate Validity**

1. On expiry of the ECC, the proponent is required to submit within a period not exceeding one month, and in the prescribed form and manner an application to the Office of the Environmental Commissioner for the renewal of the ECC.
2. Failure to renew an expired environmental clearance certificate shall result in permanent termination of the environmental clearance certificate.
3. In terms of Section 3 (2)C of the Environmental Impact Assessment, you are instructed to, within 14 days of this notice issuance date, ensure that all registered interested and affected parties ("I&APs") are notified that an environmental clearance certificate has been issued in respect to your application and of their right to appeal

**C3: Compliance with authorization under other laws**

4. All other applicable and required permits or authorization from relevant competent authorities must be obtained prior to commencing the proposed activities and accordingly adhered to.

**C4: Implementation and Monitoring**

5. The granting of the Environmental Clearance Certificate (ECC) constitute, an approval for the implementation of mitigation measures proposed in your approved Environmental Management Plan (EMP), hence making the approved EMP legally binding document.
6. The proponent shall appoint a suitably experienced environmental control officer, or site agent where appropriate, before the commencement of any listed activities to ensure compliance with the conditions of approval and mitigation stipulated in the approved EMP
7. A copy of the Environmental Clearance Certificate (ECC), EMP, Environmental Audit and monitoring reports must be kept at the site of the authorized activity and readily available for inspection by officials of the Ministry and registered Interested and affected Parties (I&APs) on request.
8. Should any heritage remains be exposed during excavations or any other actions on the site, these must immediately be reported to the National Heritage Council of Namibia. Heritage remains uncovered or disturbed during earthworks must not be further disturbed until the necessary approval has been obtained from National Heritage Council.
9. Using the best and affordable methodology, the Proponent must ensure that all listed activity's operations footprints are thoroughly rehabilitated prior to closure of the operation. Wherever possible, the Proponent must proceed with the rehabilitation process concurrently with the progression of the project rather than wait until the damage is far beyond the available means of management.
10. The general standard for all rehabilitation processes must at all costs aim at restoring the natural character of the environment to the satisfaction of the Ministry of Environment and Tourism. Such rehabilitation processes shall be inspected and certified satisfactory or unsatisfactory by the Ministry of Environment and Tourism. Where a certificate of unsatisfactory is issued, the Proponent shall be advised to carry-out certain tasks to meet the requirements. Failure to meet the basic rehabilitation requirements shall be regarded by this Ministry as a breach of this contract and of which serious consequences shall follow.



11. Officials of the environmental commissioner's office may from time-to-time conduct spot-inspection (non-auditing) without prior notice and or Auditing Inspection (dates to be agreed prior to arrival to the site), hence access to the site and the aforementioned documentation must be granted to any authorized official representing the Office of the Environmental Commissioner and Registered Interested and Affected Parties (I&APs)
12. Any changes to, or deviations from the scope of the alternative described in section B above must be accepted or approved, in writing, by the Office of the Environmental Commissioner before such changes or deviations may be implemented. In assessing whether to grant such acceptance/ approval or not, the Competent Authority may request information in order to evaluate the significance and impacts of such changes or deviations, and it may be necessary for the holder to apply for further authorization in terms of the applicable legislation.
13. Officials representing the Office of the Environmental Commissioner must be, in possession and or by request and for the purpose of inspection referred to in C4(11) present their staff identification card in order to gain entry to the premises
14. The proponent is required, from the date of commencing implementation of project activities, to compile and submit environmental monitoring reports (on project progress and the environmental management profile) on a bi-annual basis to Office of Environmental Commissioner
15. Any changes to, or deviations from the scope of project activities approved in respect to the assessment received and reviewed for the purpose of granting this ECC Number (ECC- AP10344) are subject to an amendment application and approval by the Environmental Commissioner prior to adopting / implementing any such changes / deviations.
16. For the purpose of amending and or transferring the ECC, the proponent submit in the prescribed form and manner an application to the Office of the Environmental Commissioner, clearly indicating the need for amendment and or transfer of the ECC
17. Non-compliance with a condition of this Environmental Clearance Certificate or EMP may render the Proponent liable to criminal prosecution.

#### **D. DISCLAIMER**

1. The decision taken by the Office of Environmental Commission is based mainly on information provided by the proponent or their representative, therefore, it must be noted here that the proponent is accountable for any wrong and misleading information that may have been presented in the environmental assessment documents.

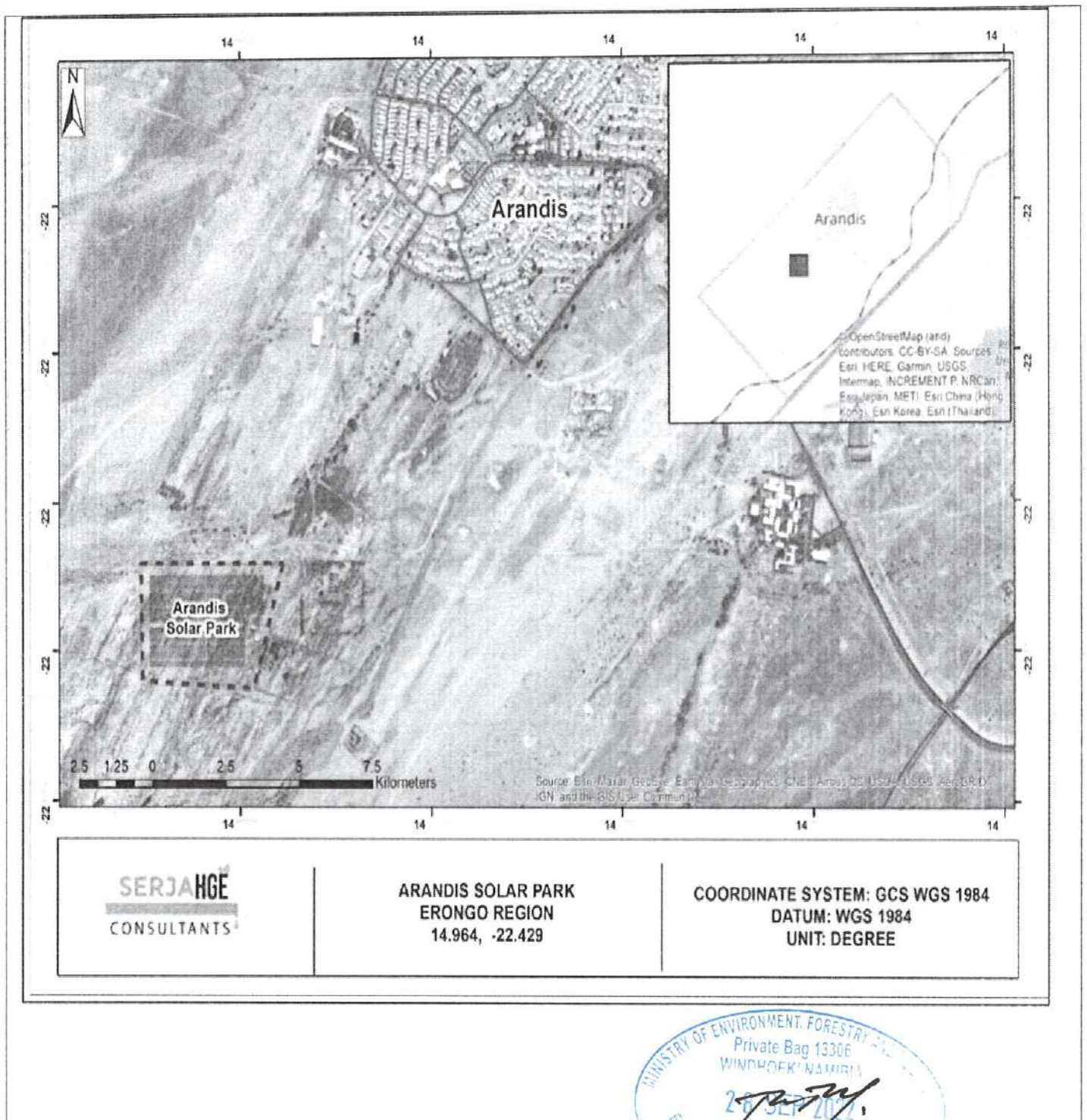
Yours sincerely,

Timoteus Mufeti

**ENVIRONMENTAL COMMISSIONER**



# ANNEXURE A: SITEMAP / SITE LAYOUT



**APPENDIX B: PROOFS OF SUBMISSIONS OF BI-  
ANNUAL ENVIRONMENTAL MONITORING REPORTS  
SUBMITTED TO THE MEFT BY OLC ARANDIS SOLAR  
ENERGY BETWEEN 203 AND MID 2025**



## Bi-Annual Report Information

Operations and Maintenance of the Existing 3-Megawatt (MW) Solar Photovoltaic (PV) Park within the Townlands of Arandis, Erongo Region	
<b>APPLICATION NR</b>	APP-10344
<b>ECC EXPIRATION DATE</b>	26 September 2025
<b>REPORTING PERIOD</b>	April 2023 – Oct 2023
<b>REVIEW DATE</b>	October 2023
<b>DOCUMENT AUTHOR</b>	Gloudi de Beer (Group Manager: Environmental Management)
<b>RESPONSIBLE PERSON</b>	Peter-John Christiane

## Source Document Information

Comprehensive Environmental Management Plan for the Operations and Maintenance of the Existing 3-Megawatt (MW) Solar Photovoltaic (PV) Park within the Townlands of Arandis, Erongo Region	
<b>DATE</b>	July 2022
<b>PREPARED FOR</b>	OLC Arandis Solar Energy (Pty) Ltd P.O. Box 16 Windhoek Namibia
<b>PREPARED BY</b>	SerjaHGE Consultants P.O. Box 27318 Windhoek Namibia
<b>AUTHOR OF EMP</b>	Fredrika N Shagama

## Reports submitted to date

Previous Bi-annual Reports Submitted	
<b>Review 1</b>	<u>Review:</u> February / March 2023
<b>Review 2</b>	<u>Review:</u> November 2023
<b>Review 3</b>	
<b>Review 4</b>	
<b>Review 5</b>	
<b>Review 6</b>	

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## **1. Introduction**

The purpose of this report is to provide a documented update on the implementation of the Environmental Management Plan developed as part of the Environmental Clearance Certificate application (APP-003456) for the continued operation of the Arandis Solar Energy Facility.

This review was done by Gloudi de Beer, Group Manager: Environmental Management for the O&L Group of Companies. Information collated in this document is for April 2023 – October 2023, and were provided by the relevant persons employed at the Arandis Solar Energy Facility at the time of the audit.

## **2. Disclaimer and Copyright**

The information stated in this document was correct as at the time of the audit. Any operational changes which have occurred after the audit will be duly reflected in subsequent reports. This document has undergone the rigorous document review process of the O&L Group of Companies to ensure quality and transparency.

The author of this document is not in the direct employment of OLC Arandis Solar Energy (Pty) Ltd or any of its subsidiaries and have no interest in the project other than the fulfilment of the compliance and assurance duties assigned to them by their scope of work.

The author does not accept any responsibility or liability in respect of losses, damages or costs suffered or incurred by the proponent, either directly or indirectly, because of the findings or recommendations stipulated in this report. The author cannot be held liable for any inaccurate, misleading, or incomplete information provided, or due to acts or omissions of any person other than themselves.

SerjaHGE Consultants also does not carry any liability with regards to the content of this document since the organisation did not provide any inputs to this document other than the electronic submission thereof of the relevant portals of the Ministry of Environment, Forestry and Tourism.

Copyright on this document is reserved. No part of this document may be utilised without the written permission of the author.

## **3. Site overview**

Shagama (2022) provided the following site description and overview of activities in the original source document (as mentioned above)

*“The Solar Park and its associated infrastructure are located on the immediate southwestern side of Arandis (within the declared townlands) in the Erongo Region (hereinafter referred to as The Project Site or Project). The Project Site is well located in proximity (west) of the existing Arandis’ Erongo Regional Electrical Distributor (ErongoRed) Substation, to ensure easy connection to the national grid. The Plant covers an area of twelve (12) hectares (Ha).”*

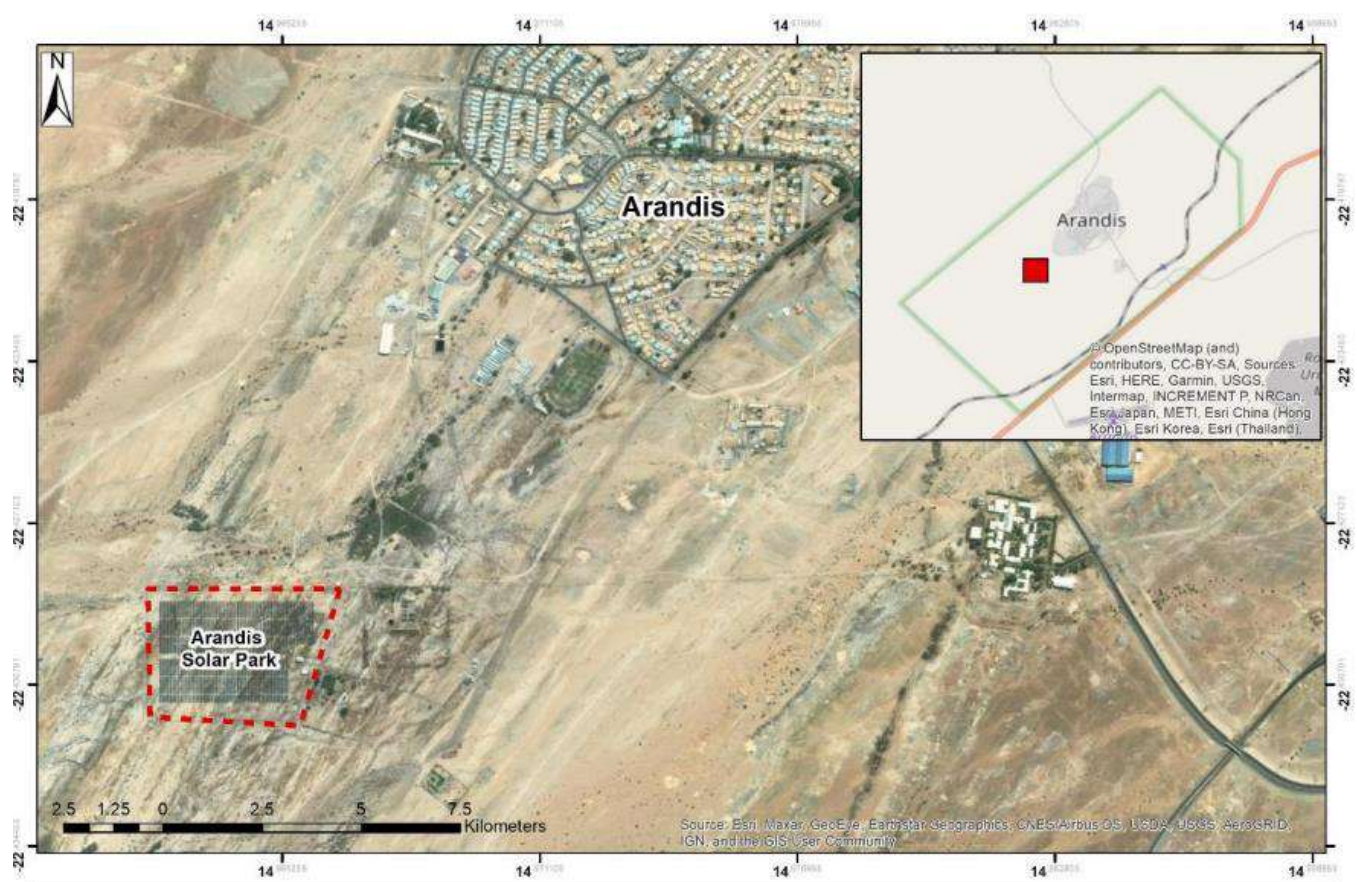


Figure 1. Project site location (Shagama, 2022)

## 4. Environmental Management Plan Compliance Overview

### 4.1. General administration

#### Status

**October 2023:** Process to recruit new employee for site is currently underway. All alignment and training processes undertaken with the previous employee will now need to be repeated once the new individual has been recruited. Status remains otherwise the same.

**March 2023:** At present the site only has one full time employee, while all other services are supplied remotely thus maintaining ownership of the recommended controls and setting standards for excellence in management have proven difficult. At present all operational permits are in place. Processes are in place to ensure review of compliance as per the permit requirements, and an operational procedure is in place to ensure the renewal of the ECC within the stipulated timeframes.

Open line of communication is being maintained with relevant stakeholders, with regular formal and informal engagement sessions held with the town council and other stakeholders. No complaints from the public or other I&AP have been received for the period under review.

Further work will need to be undertaken to ensure that the requirements regarding a formally documented grievance mechanism is developed and implemented. There are processes in place at present, but none that will fulfil the minimum requirements of the EMP.

Care should be taken to ensure that all relevant data are readily available. Data collation and reporting needs will need to be established and maintained for the site.

## 4.2. Labour and recruitment

### Status

**October 2023:** Status remains the same.

**March 2023:** recruitment is done, and contractors are used that are based either in Walvis Bay / Swakopmund / Arandis or in surrounding areas. The Group Contractor Management Program is yet to be rolled out but is likely to be done before December 2023. Programs are in place to keep employees informed about general conditions of employment, as well as company policies and procedures. A formal awareness program will need to be developed for all permanent or temporary employees or contractors which may at any time work on site.

## 4.3. Occupational and community health, safety, and security

### Status

**October 2023:** New legal appointments will need to be made and retrained – previous appointments no longer employed on site. Status remains otherwise the same.

**March 2023:** No injuries have been reported for the period under review. Safety risk assessment and management plan has been finalised for the site and are being implemented. Wellness services are on offer to employees as well, dependent on the need of the employees. A dedicate safety officer has been assigned to the organisation, with site visits occurring at least every six months – dependent on need.

## 4.4. Vehicle traffic and safety

### Status

**October 2023:** Status remains the same.

**March 2023:** The main access road is used by all visitors to site. Driving within the solar park, itself, is prohibited unless required for maintenance or repair purposes. All other vehicles driving to and from the site belong to either guests or service providers. No other vehicles owned or operated onsite, apart from private vehicles.

## 4.5. Water resource use

### Status

**October 2023:** Status remains the same.

**March 2023:** More can be done to communicate need for improved resource stewardship. Data needs to be maintained for water consumed on site.

## 4.6. Fires

### Status

**October 2023:** Status remains the same.

**March 2023:** Risk of fire is generally low under normal operational conditions. To prevent fires from starting in the event of equipment failure, it will be necessary to ensure that regular inspections and maintenance are done. The required firefighting equipment should be always available, in the event of a fire. List of all hazardous materials should also be drafted and maintained, with regular inspections to ensure that conditions of materials are still good and storage requirements are met.

## 4.7. Soils

### Status

**October 2023:** Status remains the same.

**March 2023:** Operational activities are maintained within the stipulated project boundaries. Constant informal monitoring is done to ensure that soil conditions remain unaffected by operational activities and weather events.

Controls recommended by the consultant are not applicable to this specific site and its operations.

#### **4.8. Dust and gaseous emissions**

Status

**October 2023:** Status remains the same.

**March 2023:** PPE policy and PPE matrix for the site must be formalised in order to ensure that adequate provisions for PPE is made.

#### **4.9. Waste generation**

Status

**October 2023:** Status remains the same. Decision was made to donate 2 crates of solar panels to NIMT for training purposes. They will need to be held responsible for safe disposal at end of life.

**March 2023:** Minimal waste generated on site, but the organisation must employ a proactive approach to the management and responsible disposal of redundant or damaged solar panels. Access to formal waste management services is limited. Some windblown litter from local dumpsite can be readily observed on site. Regular inspections and maintenance on solar panels must be continued, to ensure that redundant or damaged panels are removed from operations in the shortest possible amount of time, thus minimising the risk of pollution as well as ensuring adequate waste management.

#### **4.10. Water resources and soil contamination**

Status

**October 2023:** Status remains the same.

**March 2023:** No hazardous materials, likely to result in detrimental spills, are stored or used on site. Regular inspections on solar panels are done and must be continued to pro-actively identify damaged solar panels and thus reduce the probability of environmental contamination.

#### **4.11. Heritage impact**

Status

**October 2023:** Status remains the same.

**March 2023:** No items or artefacts of historical significance have been observed on site. Likelihood of chance finds during operations are low unless the site is expanded, or extreme weather events cause erosion which may expose significant artefacts.

#### **4.12. Visual impact**

Status

**October 2023:** Status remains the same.

**March 2023:** Site and infrastructure are generally well maintained. Litter, carried by the wind from the nearby town dumpsite can be observed along the outer edges of the site, but addressing the issue falls outside the locus of control of the proponent.

#### **4.13. Biodiversity and ecosystem impacts**

Status

**October 2023:** Status remains the same.



**March 2023:** No evidence observed of operational activities outside the site boundaries. Aspects related to poaching are included in the disciplinary policy for the Group and all employees are required to adhere to these guidelines (as stipulated in contracts of employment). Birds' nests are currently not a concern on site – though present they do not interfere with operations. No snake encounters have been reported for the period under review. Vegetation growing on site currently do not pose an operational risk.

#### **4.14. Rehabilitation and environmental restoration**

Status

**October 2023:** Status remains the same.

**March 2023:** All post construction rehabilitation has been done. At present no further need for rehabilitation exists, but this may change should any expansions on site be required. Resources available to ensure that adequate rehabilitation can be done upon closure, needs to be sourced proactively.

### 5. Focus areas for next 6 months

Aspect	Action	Responsible person	Due date
General administration	Ensure that newly recruited employee is onboarded and aware of contents of EMP and responsibilities in terms of it.	SHE officer	31 March 2024
Water resources use	Establish process to records and communicate water consumption figures monthly.	Project Manager	29 February 2024
Fires	Ensure that evidence is maintained on site as it pertains to fire risk management and equipment availability and maintenance.	SHE officer	31 March 2024
	Develop and maintain list of all hazardous materials used and stored on site and ensure that MSDS documents are readily available.	SHE officer	31 March 2024
Dust and gaseous emissions	Ensure that PPE policy and PPE matrix is available on site and communicated to all relevant parties	SHE officer	31 March 2024
Waste generation	Continuously investigate alternative options regarding disposal of solar panels.	Project Manager	Ongoing
	Facilitate donation of panels to NIMT and ensure all documentation are in place holding them accountable for donation.	Project Manager	31 March 2024
Biodiversity and ecosystem impacts	Establish protocol and policy for biodiversity interaction reporting	Group Environmental Manager	29 February 2024
	Ensure that all employees are aware of protocol and policy	SHE officer	31 March 2024
Soils	Develop inspection checklist for soils	Group Environmental Manager	29 February 2024
	Implement soil inspection checklist	SHE officer	31 March 2024



## **6. Updates required to Environmental Management Plan**

The following are items which should be re-evaluated for applicability during the review of the EMP upon renewal of the ECC as the recommendations made by the consultant are not applicable / practicable under current operational conditions:

- Aspects related to vehicle movement and control.
- Aspects related to the management of public or municipal infrastructure.

## **7. Document Control**

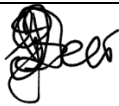
This document is considered a true reflection of the level of compliance on site as at the time of the audit. Management accepts responsibility for ensuring that all corrective actions are completed with a reasonable timeframe.


The information in this document will be checked and verified by the Consultant responsible for the development of EMP and the management of the ECC application process.

The latest dated, signed PDF copy of this document should be considered the official copy of this document and must be uploaded to the relevant folder on SharePoint.

A hard copy of this document must be submitted to the Ministry of Environment, Forestry and Tourism, while an electronic copy will be submitted to the relevant consultants to be uploaded to the online portal.

### 8. Document sign-off

<b>Date</b>	7 December 2023	<b>Author signature</b>	
<b>Author declaration</b>	<p>The author hereby acknowledge that the accuracy and reliability of the information contained in this report are contingent upon the data and details supplied by the proponent and has made every effort to ensure the accuracy and integrity of the information presented herein.</p> <p>The author affirms that they have no vested interest, financial or otherwise, in the proponent or any related entities and does not hold any positions, investments, or affiliations that could potentially bias the content or findings of this report.</p>		

<b>Name of responsible party</b>	Peter-John Christiane	<b>Responsible party signature</b>	
<b>Position of responsible party</b>	Project Manager	<b>Date</b>	2023-12-14
<b>Responsible party declaration</b>	<p>The proponent is committed to:</p> <ul style="list-style-type: none"> <li>providing accurate and reliable information to all stakeholders and parties that rely on our data and reports.</li> <li>adhering to all relevant reporting standards in the preparation and dissemination of information.</li> <li>maintain transparency in its operations, processes, and information sharing and will provide clear and comprehensive documentation timeously to ensure that our stakeholders have a complete understanding of our activities.</li> <li>ensuring that the necessary resources are made available (including time and people) to support the reporting process.</li> <li>continuous improvement.</li> </ul>		

# Department of Environmental Affairs – Bi-Annual Report OLC Arandis Solar Energy

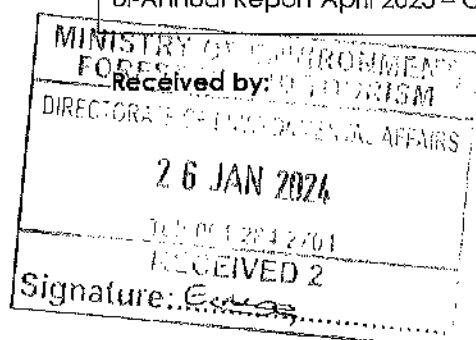
## PART A: DETAILS OF SUBMISSION

1. NAME	OLC Arandis Solar Energy (Pty) Ltd Peter-John Christiane
2. CORRESPONDENCE ADDRESS:	OLC Arandis Solar Energy (PTY) LTD P.O. Box 16 Windhoek Namibia
3. SUBMITTED BY	Gloudi de Beer Group Environmental Manager : O&L 081 127 2583
4. ENVIRONMENTAL ASSESSMENT PRACTITIONER	Fredrika N Shagama SerjaHGE Consultants (Pty) Ltd PO Box 27318 Windhoek Namibia
5. APPLICATION NUMBER	APP - 10344

Type of documents submitted

Bi-Annual Report April 2023 – October 2023 (Report nr 2)

Date: 26 January 2024



# Department of Environmental Affairs – Bi-Annual Report OLC Arandis Solar Energy

## PART A: DETAILS OF SUBMISSION

1. NAME	OLC Arandis Solar Energy (Pty) Ltd Bernd Walbaum
2. CORRESPONDENCE ADDRESS:	OLC Arandis Solar Energy (PTY) LTD P.O. Box 16 Windhoek Namibia
3. SUBMITTED BY	Gloudi de Beer Group Environmental Manager : O&L 081 127 2583
4. ENVIRONMENTAL ASSESSMENT PRACTITIONER	Fredrika N Shagama SerjaHGE Consultants (Pty) Ltd PO Box 27318 Windhoek Namibia
5. APPLICATION NUMBER	APP - 10344


Type of documents submitted
Bi-Annual Report May 2024 - November 2024 (Report nr 4)

Received by:

Date: 29 Jan 2025

MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM
DIRECTORATE OF ENVIRONMENTAL AFFAIRS
29 JAN 2025
Tel: 061 254 2701
RECEIVED 2
Signature: _____



 <b>Ohlthaver &amp; List</b>	<b>Environmental Management Plan: Bi-Annual Compliance Report</b>	NXA-EMP R04/2024
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### Bi-Annual Report Information

Operations and Maintenance of the Existing 3-Megawatt (MW) Solar Photovoltaic (PV) Park within the Townlands of Arandis, Erongo Region	
APP-10344	
26 September 2025	
November 2023 – April 2024	
September 2024	
Gloudi de Beer (Group Manager: Environmental Management)	
Bernd Walbaum	

### Source Document Information

Comprehensive Environmental Management Plan for the Operations and Maintenance of the Existing 3-Megawatt (MW) Solar Photovoltaic (PV) Park within the Townlands of Arandis, Erongo Region	
July 2022	
OLC Arandis Solar Energy (Pty) Ltd P.O. Box 16 Windhoek Namibia	
SerjaHGE Consultants P.O. Box 27318 Windhoek Namibia	
Fredrika N Shagama	

### Reports submitted to date

Previous Bi-annual Reports Submitted	
<u>Review:</u> February / March 2023	
<u>Review:</u> November 2023	
<u>Review:</u> February 2024	
<u>Review:</u> September 2024	

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## 1. Introduction

The purpose of this report is to provide a documented update on the implementation of the Environmental Management Plan developed as part of the Environmental Clearance Certificate application (APP-003456) for the continued operation of the Arandis Solar Energy Facility.

This review was done by Gloudi de Beer, Group Manager: Environmental Management for the O&L Group of Companies. Information collated in this document is for November 2023 – April 2024 and were provided by the relevant persons employed at the Arandis Solar Energy Facility at the time of the audit.

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SerjaHGE Consultants also does not carry any liability with regards to the content of this document since the organisation did not provide any inputs to this document other than the electronic submission thereof of the relevant portals of the Ministry of Environment, Forestry and Tourism.

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## 3. Site overview

Shagama (2022) provided the following site description and overview of activities in the original source document (as mentioned above)

*"The Solar Park and its associated infrastructure are located on the immediate southwestern side of Arandis (within the declared townlands) in the Erongo Region (hereinafter referred to as The Project Site or Project). The Project Site is well located in proximity (west) of the existing Arandis' Erongo Regional Electrical Distributor (ErongoRed) Substation, to ensure easy connection to the national grid. The Plant covers an area of twelve (12) hectares (Ha)."*

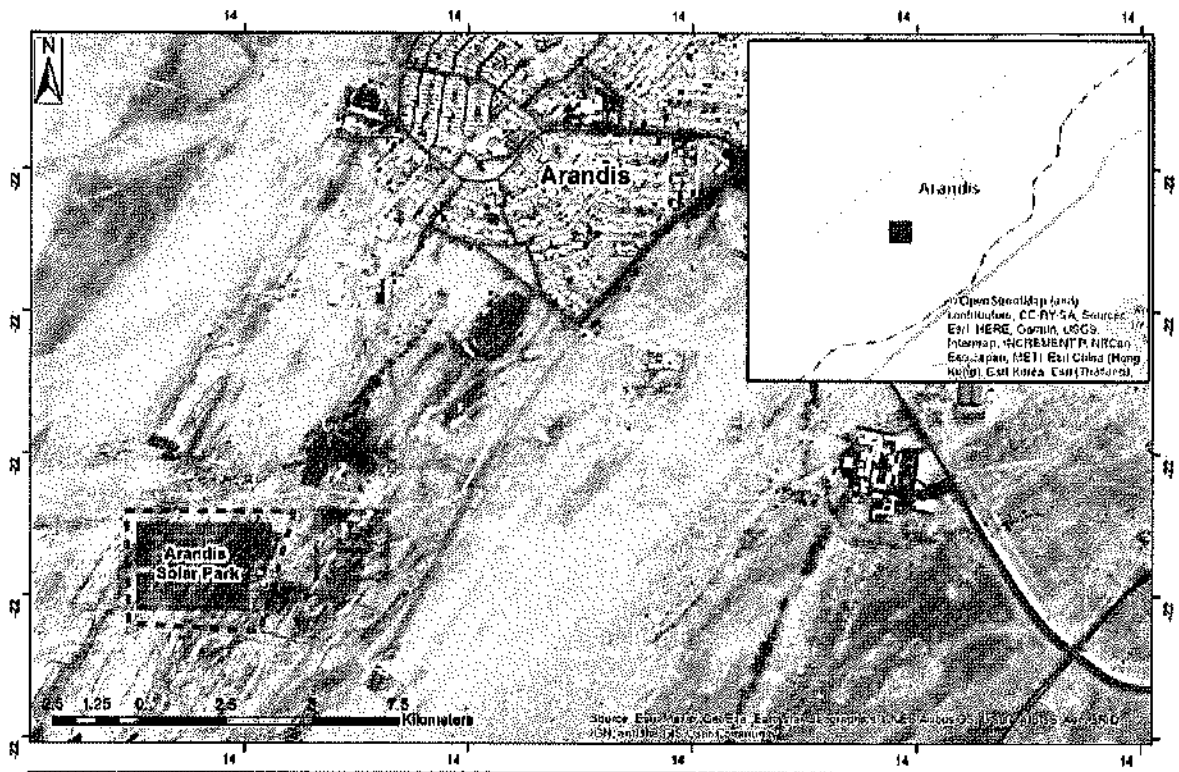


Figure 1. Project site location (Shagama, 2022)

## 4. Environmental Management Plan Compliance Overview


### 4.1. Focus Areas

#### 4.1.1 Current Focus Areas

Aspect	Action	Responsible Person	Due Date
	Finalise priorities areas previously identified	As per section 4.1.2 below	31 May 2025

#### 4.1.2 Update on Previous Focus Areas

Aspect	Action	Comments	Status
General administration	Ensure that newly recruited employee is onboarded and aware of contents of EMP and responsibilities in terms of it.	Onboarding process has been initiated but will be a continuous learning process.  EMP file needs to be reviewed and updated to ensure it contains the relevant information.	WIP
Water resources use	Establish process to records and communicate water consumption figures monthly.	Process has been established, need to ensure consistent reporting now.	WIP

 Ohlthaver & List	<b>Environmental Management Plan: Bi-Annual Compliance Report</b>	NXA-EMP R04/2024
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Aspect	Action	Comments	Status
Fires	Ensure that evidence is maintained on site as it pertains to fire risk management and equipment availability and maintenance.	Process has been established, need to ensure consistent reporting now.	WIP
	Develop and maintain list of all hazardous materials used and stored on site and ensure that MSDS documents are readily available.	Process has been established, need to ensure consistent reporting now.	WIP
Dust and gaseous emissions	Ensure that PPE policy and PPE matrix is available on site and communicated to all relevant parties	Process has been established, need to ensure consistent reporting now.	WIP
Waste generation	Continuously investigate alternative options regarding disposal of solar panels.	Continuous scanning of the operational sphere required along with continued engagement with role players in Namibia.	WIP
	Facilitate donation of panels to NIMT and ensure all documentation are in place holding them accountable for donation.	Process has been established, need to ensure consistent reporting now.	WIP
Biodiversity and ecosystem impacts	Establish protocol and policy for biodiversity interaction reporting	Biodiversity management policy has been drafted and needs to be approved. Once this is done, further protocols for reporting and management can be established.	WIP
	Ensure that all employees are aware of protocol and policy		WIP
Soils	Develop inspection checklist for soils	Currently consolidating requirements for soil management across various EMPs into one document to ensure a holistic approach to this throughout the Group.	WIP
	Implement soil inspection checklist		WIP

## 4.2. General administration

### Status

**September 2024:** Status remains the same. Please see figure 2 for a screenshot for the permit's dashboard being maintained for the site.

Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8
Electricity Generation license	Ministry of Mines and Energy - license issued by the Electricity Control Board		OLC Arandis Solar Energy (Pty) Ltd	Mr. K. Duval	01-Oct-28		Valid for 10 years
Environmental Clearance Certificate	Ministry of Environment, Forestry and Tourism		OLC Arandis Solar Energy (Pty) Ltd	Mr. K. Duval	24-Sep-23		
Fitness Certificate	City of Windhoek		OL Arandis Solar Energy	Wika Duval	21-Oct-24		Health inspection was done 27/01/2024, no further action

Figure 2. Screenshot of the online permit dashboard being maintained for the site


**February 2024:** New employee has been appointed. There is still only one full time employee on site. Clear split needs to happen between administrative and operational functions, as it pertains to the EMP, to take competency of all parties involved in the process into account and to ensure that relevant persons take responsibility for the right aspects.

**October 2023:** Process to recruit new employee for site is currently underway. All alignment and training processes undertaken with the previous employee will now need to be repeated once the new individual has been recruited. Status remains otherwise the same.

**March 2023:** At present the site only has one full time employee, while all other services are supplied remotely thus maintaining ownership of the recommended controls and setting standards for excellence in management have





 <b>Ohlthaver &amp; List</b>	<b>Environmental Management Plan: Bi-Annual Compliance Report</b>	<b>NXA-EMP R04/2024</b>
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proven difficult. At present all operational permits are in place. Processes are in place to ensure review of compliance as per the permit requirements, and an operational procedure is in place to ensure the renewal of the ECC within the stipulated timeframes.

Open line of communication is being maintained with relevant stakeholders, with regular formal and informal engagement sessions held with the town council and other stakeholders. No complaints from the public or other I&AP have been received for the period under review.

Further work will need to be undertaken to ensure that the requirements regarding a formally documented grievance mechanism is developed and implemented. There are processes in place at present, but none that will fulfil the minimum requirements of the EMP.

Care should be taken to ensure that all relevant data are readily available. Data collation and reporting needs will need to be established and maintained for the site.

#### **4.3. Labour and recruitment**

##### Status

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** The amount of employment opportunities available on site is limited. Where possible, local recruitment is done, and contractors are used that are based either in Swakopmund / Arandis or in surrounding areas. The Group Contractor Management Program is yet to be rolled out but is likely to be done before December 2023. Programs are in place to keep employees informed about general conditions of employment, as well as company policies and procedures. A formal awareness program will need to be developed for all permanent or temporary employees or contractors which may at any time work on site.

#### **4.4. Occupational and community health, safety, and security**

##### Status

**September 2024:** Status remains the same. Please see a screenshot from the monthly report done for the site under Figure 3.

**February 2024:** Windhoek based legal appointments in place. No legal appointments required for employee complement on site (as per legal requirements and aligned to risk profile). SHE management program in place for the site and being monitored.

**October 2023:** New legal appointments will need to be made and retrained – previous appointments no longer employed on site. Status remains otherwise the same.

**March 2023:** No injuries have been reported for the period under review. Safety risk assessment and management plan has been finalised for the site and are being implemented. Wellness services are on offer to employees as well, dependent on the need of the employees. A dedicated safety officer has been assigned to the organisation, with site visits occurring at least every six months – dependent on need.

Incident Information - Reporting Month				
Near Miss Incidents	First Aid Incidents	Medical Treatment Cases	Lost Time Injuries	Fatalities
0	0	0	0	0

Incident Information - FY25				
Near Miss Incidents	First Aid Incidents	Medical Treatment Cases	Lost Time Injuries	Fatalities
0	0	0	0	0

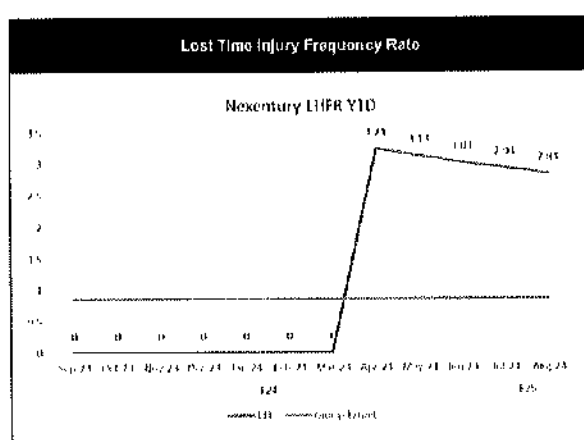


Figure 3. Screenshot from Safety Management Monthly report for October 2024.

#### 4.5. Vehicle traffic and safety

##### Status

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** The main access road is used by all visitors to site. Driving within the solar park, itself, is prohibited unless required for maintenance or repair purposes. All other vehicles driving to and from the site belong to either guests or service providers. No other vehicles owned or operated onsite, apart from private vehicles.

#### 4.6. Water resource use

##### Status

**September 2024:** Status remains the same.

**February 2024:** Monitoring program for monitoring water consumption has been implemented. With relevant data, further management programs can be considered.

**October 2023:** Status remains the same.

**March 2023:** More can be done to communicate need for improved resource stewardship. Data needs to be maintained for water consumed on site.

#### **4.7. Fires**

Status

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** Risk of fire is generally low under normal operational conditions. To prevent fires from starting in the event of equipment failure, it will be necessary to ensure that regular inspections and maintenance are done. The required firefighting equipment should be always available, in the event of a fire. List of all hazardous materials should also be drafted and maintained, with regular inspections to ensure that conditions of materials are still good and storage requirements are met.

#### **4.8. Soils**

Status

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** Operational activities are maintained within the stipulated project boundaries. Constant informal monitoring is done to ensure that soil conditions remain unaffected by operational activities and weather events. Controls recommended by the consultant are not applicable to this specific site and its operations.

#### **4.9. Dust and gaseous emissions**

Status

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** PPE policy and PPE matrix for the site must be formalised in order to ensure that adequate provisions for PPE is made.

#### **4.10. Waste generation**

Status

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same. Decision was made to donate 2 crates of solar panels to NIMT for training purposes. They will need to be held responsible for safe disposal at end of life.

**March 2023:** Minimal waste generated on site, but the organisation must employ a proactive approach to the management and responsible disposal of redundant or damaged solar panels. Access to formal waste management services is limited. Some windblown litter from local dumpsite can be readily observed on site. Regular inspections and maintenance on solar panels must be continued, to ensure that redundant or damaged panels are removed from operations in the shortest possible amount of time, thus minimising the risk of pollution as well as ensuring adequate waste management.



 <b>Ohlthaver &amp; List</b>	<b>Environmental Management Plan: Bi-Annual Compliance Report</b>	<b>NXA-EMP R04/2024</b>
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#### **4.11. Water resources and soil contamination**

Status

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** No hazardous materials, likely to result in detrimental spills, are stored or used on site. Regular inspections on solar panels are done and must be continued to pro-actively identify damaged solar panels and thus reduce the probability of environmental contamination.

#### **4.12. Heritage impact**

Status

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** No items or artefacts of historical significance have been observed on site. Likelihood of chance finds during operations are low unless the site is expanded, or extreme weather events cause erosion which may expose significant artefacts.

#### **4.13. Visual impact**

Status

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** Site and infrastructure are generally well maintained. Litter, carried by the wind from the nearby town dumpsite can be observed along the outer edges of the site, but addressing the issue falls outside the locus of control of the proponent.

#### **4.14. Biodiversity and ecosystem impacts**

Status

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** No evidence observed of operational activities outside the site boundaries. Aspects related to poaching are included in the disciplinary policy for the Group and all employees are required to adhere to these guidelines (as stipulated in contracts of employment). Birds' nests are currently not a concern on site – though present they do not interfere with operations. No snake encounters have been reported for the period under review. Vegetation growing on site currently do not pose an operational risk.

#### **4.15. Rehabilitation and environmental restoration**

Status


 <b>Ohlthaver &amp; List</b>	<b>Environmental Management Plan: Bi-Annual Compliance Report</b>	<b>NXA-EMP R04/2024</b>
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**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.


**March 2023:** All post construction rehabilitation has been done. At present no further need for rehabilitation exists, but this may change should any expansions on site be required. Resources available to ensure that adequate rehabilitation can be done upon closure, needs to be sourced proactively.

	<b>Environmental Management Plan: Bi-Annual Compliance Report</b>	<b>NXA-EMP R04/2024</b>
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## 5. Updates required to Environmental Management Plan

The following are items which should be re-evaluated for applicability during the review of the EMP upon renewal of the ECC as the recommendations made by the consultant are not applicable / practicable under current operational conditions:

- Aspects related to vehicle movement and control.
- Aspects related to the management of public or municipal infrastructure.

 <b>Ohlthaver &amp; List</b>	<b>Environmental Management Plan: Bi-Annual Compliance Report</b>	<b>NXA-EMP R04/2024</b>
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## 6. Document Control

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 <b>Ohlthaver &amp; List</b>	<b>Environmental Management Plan: Bi-Annual Compliance Report</b>	<b>NXA-EMP R04/2024</b>
--	---	-----------------------------

## 7. Document sign-off

Name of responsible party	Wilko Düvel	Responsible party signature	
Position of responsible party	Financial Director	Date	22/1/2025
Responsible party declaration	<p>The proponent is committed to:</p> <ul style="list-style-type: none"> <li>• providing accurate and reliable information to all stakeholders and parties that rely on our data and reports.</li> <li>• adhering to all relevant reporting standards in the preparation and dissemination of information.</li> <li>• maintain transparency in its operations, processes, and information sharing and will provide clear and comprehensive documentation timeously to ensure that our stakeholders have a complete understanding of our activities.</li> <li>• ensuring that the necessary resources are made available (including time and people) to support the reporting process.</li> <li>• continuous improvement.</li> </ul>		

**Appendix 1 – Photographs taken on site.**


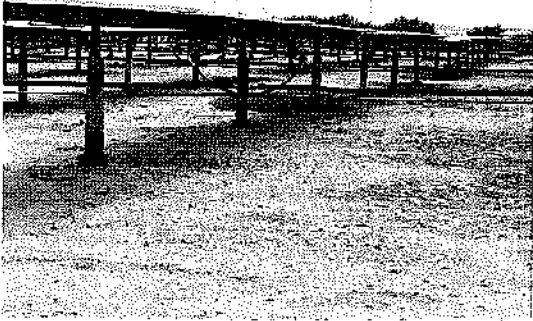

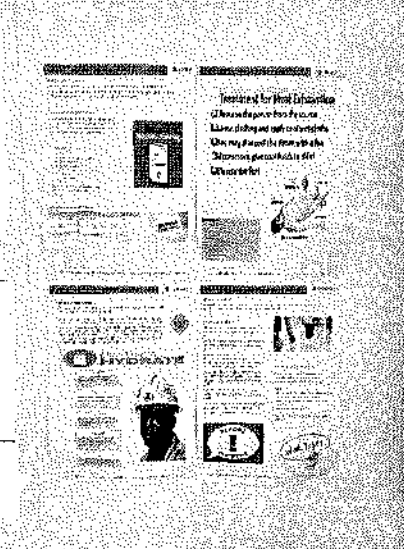
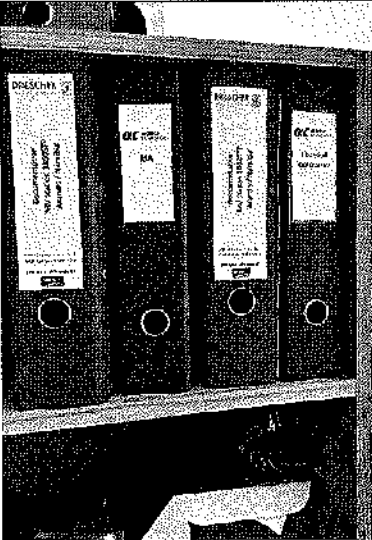

Photo	Comments
 <p>Photo 1.</p>	<p>New site signage erected but arrows pointing in the wrong direction. Sign either needs to be replaced or place on another location to accurately indicate direction.</p>
 <p>Photo 2.</p>	<p>Some vegetation can be observed, but generally is not an operational concern at this stage. Will need to monitor vegetation growth. Herbicide application should be <u>avoided</u>.</p>
 <p>Photo 3.</p>	<p>Some rust and degradation observed on steps. Need to be monitored to ensure it does not become a safety concern.</p>

Photo	Comments
 <p>Photo 4.</p>	<p>Posters for general safety awareness observed on site.</p>
 <p>Photo 5.</p>	<p>EIA file available on site, but should be updated to include all EMP related information as well.</p>
 <p>Photo 6.</p>	<p>First aid box available on site.</p>





# Department of Environmental Affairs – Bi-Annual Report OLC Arandis Solar Energy



## PART A: DETAILS OF SUBMISSION

1. NAME	OLC Arandis Solar Energy (Pty) Ltd Jaco Huisamen
2. CORRESPONDENCE ADDRESS:	OLC Arandis Solar Energy (PTY) LTD P.O. Box 16 Windhoek Namibia
3. SUBMITTED BY	Gloudi de Beer Group Environmental Manager : O&L 081 127 2583
4. ENVIRONMENTAL ASSESSMENT PRACTITIONER	Fredrika N Shagama SerjaHGE Consultants (Pty) Ltd PO Box 27318 Windhoek Namibia
5. APPLICATION NUMBER	APP - 10344

Type of documents submitted
Bi-Annual Report October 2024 – March 2025 (Report nr 5)

Received by:

Date:



### Bi-Annual Report Information

Operations and Maintenance of the Existing 3-Megawatt (MW) Solar Photovoltaic (PV) Park within the Townlands of Arandis, Erongo Region	
APPLICATION NR	APP-10344
ECC EXPIRATION DATE	26 September 2025
REPORTING PERIOD	October 2024 – March 2025
REVIEW DATE	March 2025
DOCUMENT AUTHOR	Gloudi de Beer (Group Manager: Environmental Management)
RESPONSIBLE PERSON	Jaco Huisamen



### Source Document Information

Comprehensive Environmental Management Plan for the Operations and Maintenance of the Existing 3-Megawatt (MW) Solar Photovoltaic (PV) Park within the Townlands of Arandis, Erongo Region	
DATE	July 2022
PREPARED FOR	OLC Arandis Solar Energy (Pty) Ltd P.O. Box 16 Windhoek Namibia
PREPARED BY	SerjaHGE Consultants P.O. Box 27318 Windhoek Namibia
AUTHOR OF EMP	Fredrika N Shagama

### Reports submitted to date

Previous Bi-annual Reports Submitted	
Review 1	<u>Review:</u> February / March 2023
Review 2	<u>Review:</u> November 2023
Review 3	<u>Review:</u> February 2024
Review 4	<u>Review:</u> September 2024
Review 5	<u>Review:</u> March 2025 (this report)

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This review was done by Gloudi de Beer, Group Manager: Environmental Management for the O&L Group of Companies. Information collated in this document is for October 2024 – March 2025 and were provided by the relevant persons employed at the Arandis Solar Energy Facility at the time of the audit.

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## 3. Site overview

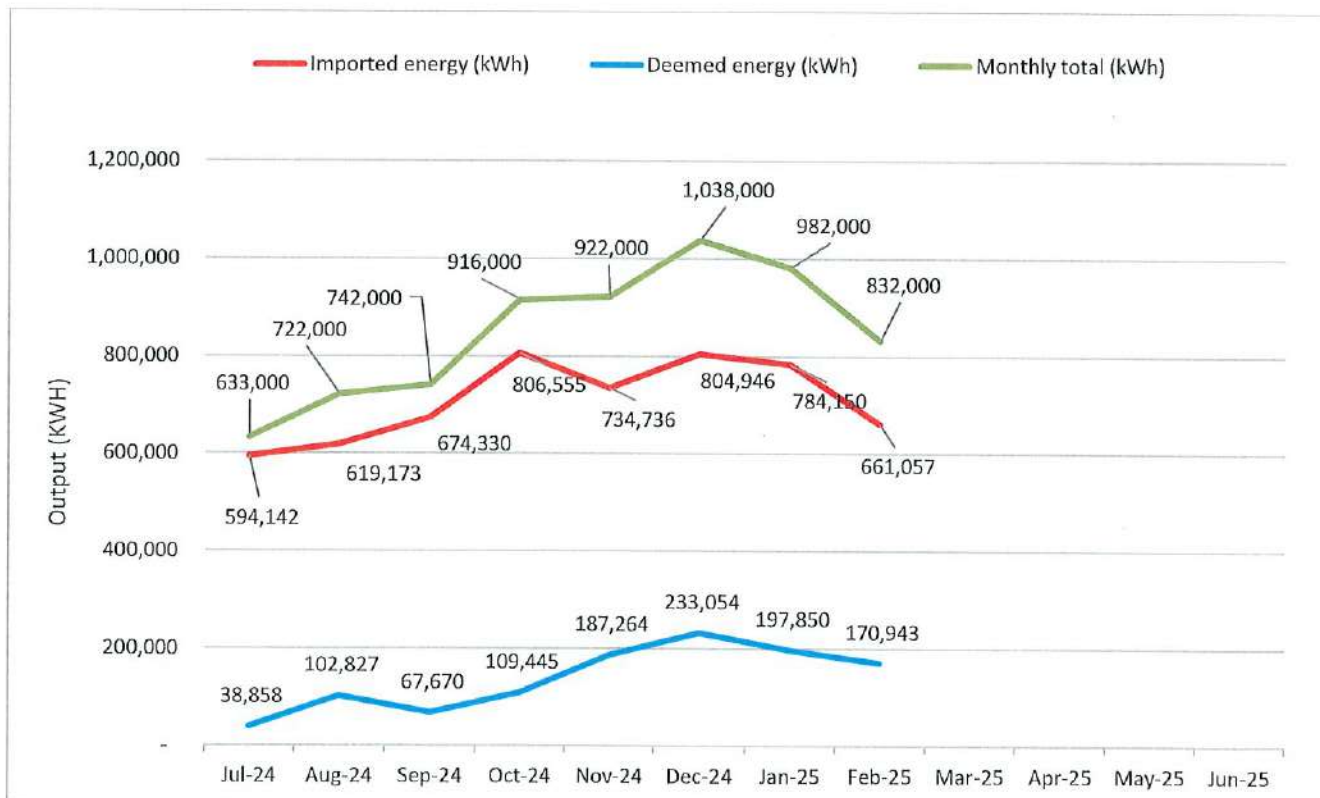
Shagama (2022) provided the following site description and overview of activities in the original source document (as mentioned above)

*"The Solar Park and its associated infrastructure are located on the immediate southwestern side of Arandis (within the declared townlands) in the Erongo Region (hereinafter referred to as The Project Site or Project). The Project Site is well located in proximity (west) of the existing Arandis' Erongo Regional Electrical Distributor (ErongoRed) Substation, to ensure easy connection to the national grid. The Plant covers an area of twelve (12) hectares (Ha)."*



**Figure 1. Project site location (Shagama, 2022)**

Please see figure 2 below for an overview of the monthly output readings for the plant for the F25 financial year.



**Figure 2. Monthly solar output (kWh) for July 2024 to date (J Huisamen, 2025)**



 Ohlthaver & List	<b>Environmental Management Plan: Bi-Annual Compliance Report</b>	NXA-EMP R05/2025
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#### 4. Environmental Management Plan Compliance Overview


##### 4.1. Focus Areas

##### 4.1.1 Current Focus Areas

Aspect	Action	Responsible Person	Due Date
	Finalise priorities areas previously identified	As per section 4.1.2 below	31 May 2025

##### 4.1.2 Update on Previous Focus Areas

Aspect	Action	Comments	Status
General administration	Ensure that newly recruited employee is onboarded and aware of contents of EMP and responsibilities in terms of it.	Onboarding process has been initiated but will be a continuous learning process.  <b>Update March 2025:</b> Employee working on site received induction in October 2024 (information included in subsequent sections)	WIP
Water resources use	Establish process to records and communicate water consumption figures monthly.	Process has been established, need to ensure consistent reporting now.  <b>Update March 2025:</b> Information not being shared regularly.	WIP
Fires	Ensure that evidence is maintained on site as it pertains to fire risk management and equipment availability and maintenance.	Process has been established, need to ensure consistent reporting now.	WIP
	Develop and maintain list of all hazardous materials used and stored on site and ensure that MSDS documents are readily available.	Process has been established, need to ensure consistent reporting now.	WIP
Dust and gaseous emissions	Ensure that PPE policy and PPE matrix is available on site and communicated to all relevant parties	Process has been established, need to ensure consistent reporting now.	WIP
Waste generation	Continuously investigate alternative options regarding disposal of solar panels.	Continuous scanning of the operational sphere required along with continued engagement with role players in Namibia.	WIP
	Facilitate donation of panels to NIMT and ensure all documentation are in place holding them accountable for donation.	Process has been established, need to ensure consistent reporting now.	WIP
Biodiversity and ecosystem impacts	Establish protocol and policy for biodiversity interaction reporting	Biodiversity management policy has been drafted and needs to be approved. Once this is done, further protocols for reporting and management can be established.	WIP
	Ensure that all employees are aware of protocol and policy		WIP
Soils	Develop inspection checklist for soils	Currently consolidating requirements for soil management across various EMPs	WIP

	<b>Environmental Management Plan: Bi-Annual Compliance Report</b>	<b>NXA-EMP R05/2025</b>
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Aspect	Action	Comments	Status
	Implement soil inspection checklist	into one document to ensure a holistic approach to this throughout the Group.	WIP

## 4.2. General administration

### Status

**March 2025:** Status remains the same. Please see figure 3 for a screenshot for the permit's dashboard being maintained for the site.

**September 2024:** Status remains the same. Please see figure 2 for a screenshot for the permit's dashboard being maintained for the site.

A	B	C	E	F	G
Vexentury	Column1	Column2	Column4	Column5	Column6
1	Electricity Generation License	Ministry of Mines and Energy - License issued by the Electricity Control Board	OLC Arandis Solar Energy (Pty) Ltd	Wilko Duvel	01-Oct-26
2	Environmental Clearance Certificate	Ministry of Environment, Forestry and Tourism	OLC Arandis Solar Energy (Pty) Ltd	Wilko Duvel	21-Oct-25
5	Fitness Certificate	City of Windhoek	OLC Arandis Solar Energy (Pty) Ltd	Wilko Duvel	21-Oct-25

Figure 3. Screenshot of the online permit dashboard being maintained for the site

**February 2024:** New employee has been appointed. There is still only one full time employee on site. Clear split needs to happen between administrative and operational functions, as it pertains to the EMP, to take competency of all parties involved in the process into account and to ensure that relevant persons take responsibility for the right aspects.

**October 2023:** Process to recruit new employee for site is currently underway. All alignment and training processes undertaken with the previous employee will now need to be repeated once the new individual has been recruited. Status remains otherwise the same.

**March 2023:** At present the site only has one full time employee, while all other services are supplied remotely thus maintaining ownership of the recommended controls and setting standards for excellence in management have proven difficult. At present all operational permits are in place. Processes are in place to ensure review of compliance as per the permit requirements, and an operational procedure is in place to ensure the renewal of the ECC within the stipulated timeframes.

Open line of communication is being maintained with relevant stakeholders, with regular formal and informal engagement sessions held with the town council and other stakeholders. No complaints from the public or other I&AP have been received for the period under review.

Further work will need to be undertaken to ensure that the requirements regarding a formally documented grievance mechanism is developed and implemented. There are processes in place at present, but none that will fulfil the minimum requirements of the EMP.

Care should be taken to ensure that all relevant data are readily available. Data collation and reporting needs will need to be established and maintained for the site.

## 4.3. Labour and recruitment

### Status

**March 2025:** Status remains the same.

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.



**March 2023:** The amount of employment opportunities available on site is limited. Where possible, local recruitment is done, and contractors are used that are based either in Swakopmund / Arandis or in surrounding areas. The Group Contractor Management Program is yet to be rolled out but is likely to be done before December 2023. Programs are in place to keep employees informed about general conditions of employment, as well as company policies and procedures. A formal awareness program will need to be developed for all permanent or temporary employees or contractors which may at any time work on site.

### 4.4. Occupational and community health, safety, and security

#### Status

**March 2025:** Status remains the same. Please see Figure 4 for more information on incidents reported and Figure 5 for evidence of induction for the employee on site.

**September 2024:** Status remains the same. Please see a screenshot from the monthly report done for the site under Figure 3.

**February 2024:** Windhoek based legal appointments in place. No legal appointments required for employee complement on site (as per legal requirements and aligned to risk profile). SHE management program in place for the site and being monitored.

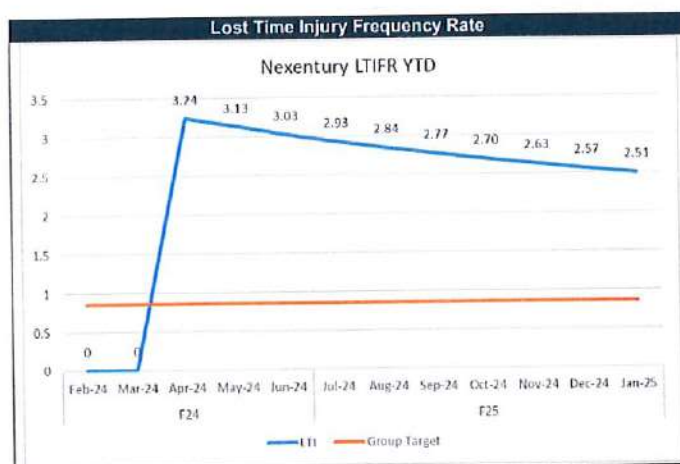
**October 2023:** New legal appointments will need to be made and retrained – previous appointments no longer employed on site. Status remains otherwise the same.

**March 2023:** No injuries have been reported for the period under review. Safety risk assessment and management plan has been finalised for the site and are being implemented. Wellness services are on offer to employees as well, dependent on the need of the employees. A dedicate safety officer has been assigned to the organisation, with site visits occurring at least every six months – dependent on need.

#### Section 01: Incident Information

Incident Information – Dec 2024 & Jan 2025				
Near Miss Incidents	First Aid Incidents	Medical Treatment Cases	Lost Time Injuries	Fatalities
0	0	0	0	0

Incident Information – FY25				
Near Miss Incidents	First Aid Incidents	Medical Treatment Cases	Lost Time Injuries	Fatalities
0	0	0	0	0



**Figure 4. Summary of incidents for the entire organisation (not just the site) as there is only one person working on site.**

## Safety Induction

Attendance Register  
Date: 20 March 2024  
Site: Arandis Solar Plant - Nexentury  
Time: 10:00 AM – 11:00 AM

[illegible]

**Figure 5. Evidence of induction for employee currently working at Arandis**

#### 4.5. Vehicle traffic and safety

## Status

**March 2025:** Status remains the same.

**September 2024:** Status remains the same.

February 2024: Status remains the same.

October 2023: Status remains the same.

**March 2023:** The main access road is used by all visitors to site. Driving within the solar park, itself, is prohibited unless required for maintenance or repair purposes. All other vehicles driving to and from the site belong to either guests or service providers. No other vehicles owned or operated onsite, apart from private vehicles.

#### 4.6. Water resource use

Status

**March 2025:** Status remains the same. Please see Figure 6 for an indication of water consumption over the past few years. Some doubt about the accuracy if the information leading up to November 2023.

**September 2024:** Status remains the same.

**February 2024:** Monitoring program for monitoring water consumption has been implemented. With relevant data, further management programs can be considered.

October 2023: Status remains the same.

**March 2023:** More can be done to communicate need for improved resource stewardship. Data needs to be maintained for water consumed on site.



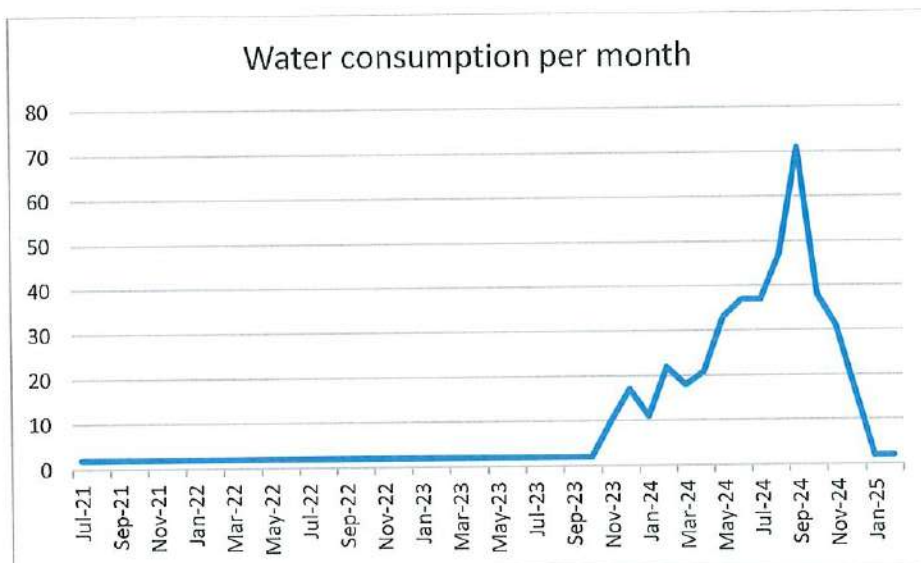


Figure 6. Monthly water consumption at the site as from July 2021 to date

## 4.7. Fires

### Status

**March 2025:** Status remains the same.

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** Risk of fire is generally low under normal operational conditions. To prevent fires from starting in the event of equipment failure, it will be necessary to ensure that regular inspections and maintenance are done. The required firefighting equipment should be always available, in the event of a fire. List of all hazardous materials should also be drafted and maintained, with regular inspections to ensure that conditions of materials are still good and storage requirements are met.

## 4.8. Soils

### Status

**March 2025:** Status remains the same. Please see Appendix 1 for more information.

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** Operational activities are maintained within the stipulated project boundaries. Constant informal monitoring is done to ensure that soil conditions remain unaffected by operational activities and weather events. Controls recommended by the consultant are not applicable to this specific site and its operations.

## 4.9. Dust and gaseous emissions

### Status

**March 2025:** Status remains the same.

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** PPE policy and PPE matrix for the site must be formalised in order to ensure that adequate provisions for PPE is made.

#### **4.10. Waste generation**

##### Status

**March 2025:** Status remains the same.

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same. Decision was made to donate 2 crates of solar panels to NIMT for training purposes. They will need to be held responsible for safe disposal at end of life.

**March 2023:** Minimal waste generated on site, but the organisation must employ a proactive approach to the management and responsible disposal of redundant or damaged solar panels. Access to formal waste management services is limited. Some windblown litter from local dumpsite can be readily observed on site. Regular inspections and maintenance on solar panels must be continued, to ensure that redundant or damaged panels are removed from operations in the shortest possible amount of time, thus minimising the risk of pollution as well as ensuring adequate waste management.

#### **4.11. Water resources and soil contamination**

##### Status

**March 2025:** Status remains the same.

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** No hazardous materials, likely to result in detrimental spills, are stored or used on site. Regular inspections on solar panels are done and must be continued to pro-actively identify damaged solar panels and thus reduce the probability of environmental contamination.

#### **4.12. Heritage impact**

##### Status

**March 2025:** Status remains the same.

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** No items or artefacts of historical significance have been observed on site. Likelihood of chance finds during operations are low unless the site is expanded, or extreme weather events cause erosion which may expose significant artefacts.

#### **4.13. Visual impact**

##### Status

**March 2025:** Status remains the same.

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** Site and infrastructure are generally well maintained. Litter, carried by the wind from the nearby town dumpsite can be observed along the outer edges of the site, but addressing the issue falls outside the locus of control of the proponent.

#### **4.14. Biodiversity and ecosystem impacts**

##### Status

**March 2025:** Status remains the same.

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** No evidence observed of operational activities outside the site boundaries. Aspects related to poaching are included in the disciplinary policy for the Group and all employees are required to adhere to these guidelines (as stipulated in contracts of employment). Birds' nests are currently not a concern on site – though present they do not interfere with operations. No snake encounters have been reported for the period under review. Vegetation growing on site currently do not pose an operational risk.

#### **4.15. Rehabilitation and environmental restoration**

##### Status

**March 2025:** Status remains the same.

**September 2024:** Status remains the same.

**February 2024:** Status remains the same.

**October 2023:** Status remains the same.

**March 2023:** All post construction rehabilitation has been done. At present no further need for rehabilitation exists, but this may change should any expansions on site be required. Resources available to ensure that adequate rehabilitation can be done upon closure, needs to be sourced proactively.



## **5. Updates required to Environmental Management Plan**

The following are items which should be re-evaluated for applicability during the review of the EMP upon renewal of the ECC as the recommendations made by the consultant are not applicable / practicable under current operational conditions:

- Aspects related to vehicle movement and control.
- Aspects related to the management of public or municipal infrastructure.

## **6. Document Control**


This document is considered a true reflection of the level of compliance on site as at the time of the audit. Management accepts responsibility for ensuring that all corrective actions are completed with a reasonable timeframe.

The information in this document will be checked and verified by the Consultant responsible for the development of EMP and the management of the ECC application process.

The latest dated, signed PDF copy of this document should be considered the official copy of this document and must be uploaded to the relevant folder on SharePoint.

A hard copy of this document must be submitted to the Ministry of Environment, Forestry and Tourism, while an electronic copy will be submitted to the relevant consultants to be uploaded to the online portal.

### 7. Document sign-off

<b>Name of responsible party</b>	Jaco Huisamen	<b>Responsible party signature</b>	
<b>Position of responsible party</b>	Project manager	<b>Date</b> 7 Apr 2025	
<b>Responsible party declaration</b>	<p>The proponent is committed to:</p> <ul style="list-style-type: none"> <li>providing accurate and reliable information to all stakeholders and parties that rely on our data and reports.</li> <li>adhering to all relevant reporting standards in the preparation and dissemination of information.</li> <li>maintain transparency in its operations, processes, and information sharing and will provide clear and comprehensive documentation timeously to ensure that our stakeholders have a complete understanding of our activities.</li> <li>ensuring that the necessary resources are made available (including time and people) to support the reporting process.</li> <li>continuous improvement.</li> </ul>		



**Appendix 1 – Photographs taken on site.**






Photo	Comments
 <p><b>Photo 1.</b></p>	<p><b>Date of photo: 1 March 2025</b></p> <p>New signboard erecting still pointing the wrong way. Not clearly visible at a distance.</p>
 <p><b>Photo 2.</b></p>	<p><b>Date of photo: 1 March 2025</b></p> <p>Generally low visual impact observed from the road site. Development "blends" well with surrounding environment and no complaints received to date regarding glint or glare.</p>
 <p><b>Photo 3.</b></p>	<p><b>Date of photo: 1 March 2025</b></p> <p>Some evidence of a significant oil spill in the access road which runs past the site. This was never previously observed during inspections, and it is unlikely that this was caused by any activities executed on site.</p> <p>This road is also used by vehicles traveling to the waste disposal facility and it is more likely that the cause of the spill can be found there.</p>

Photo	Comments
 <p>Photo 4.</p>	<p><b>Date of photo: 1 March 2025</b></p> <p>It does, however, appear as if the spill has spread into the boundaries of the site.</p>
 <p>Photo 5.</p>	<p><b>Date of photo: 1 March 2025</b></p> <p>Poor management of the town dump site remains a concern as the litter continuously is blown onto site or against the outer boundaries of the site, causing quite an eyesore in the area.</p>