



Ejuva One Solar Energy(Pty) Ltd

FINAL ENVIRONMENTAL MONITORING REPORT

Final Environmental Compliance Monitoring Report for the Period 2018-2019 for ongoing operation of the Renewable Photovoltaic Solar Power Plant at Gobabis Omaheke

Proponent :

Ejuva one Energy (pty) Ltd
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13th October 2022



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ABBREVIATIONS AND ACRONYMS

EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
PV	Photovoltaic
MET	Ministry of Environment and Tourism
NamPower	Namibian Power Corporation
DWA	Department of Water Affairs
ECO	Environmental Control Officer
DEA	Department of Environmental Affairs
ENC	Environmental Coordinator
EO	Environmental Officer
EIA-C	Environmental Impact Assessment Consultant
I&Aps	Interested and Affected Parties
EAs	Environmental Assessments

PROPONENT, LISTED ACTIVITIES AND RELATED INFORMATION SUMMARY

NAME OF THE PROPONENT

Ejuva one Energy (pty) Ltd

COMPETENT AUTHORITY

Ministry of Mines and Energy (MME)

ADDRESS OF THE PROPONENT & CONTACT PERSON

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PROPOSED PROJECT

Operation of the Renewable
Photovoltaic Solar Power Plant at
Gobabis Omaheke

PROJECT LOCATION

Gobabis Districts
Region, Omaheke, Namibia

ENVIRONMENTAL CONSULTANTS

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ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Mulife S Siyambango

MSc, MASM, MBA, BSc, DPPM, FGS

1. INTRODUCTION AND BACKGROUND

Ejuva one (Pty) Ltd is currently operating the 5 MW Renewable Photovoltaic Solar Power Plant at Gobabis Omaheke within the municipal boundaries of Gobabis. The current 5MW solar power plant supply electricity to Nampower which then is distributed nationwide. The rationale for the development project is based upon the increase in the demand for electricity in the country due to the rapid industrial expansion. The boom in business activities in the country has lead to a demand in electrical services which have grown at a faster rate than expected. The 5 MW Renewable Photovoltaic Solar Power Plant is situated within Gobabis because of town's highsun hours, which is in the eastern part of the country, Omaheke region. This Environmental Management Plan (EMP) provides guidance for managing the construction, operation and decommissioning of a renewable photovoltaic solar power plant in Gobabis. The EMP is a working document which consistsof a set of mitigation measures that will be implemented to eliminate, offset or reduce adverse environmental impacts to acceptable levels during the various phases (i.e. construction, operations and decommissioning).

The construction, operation and decommissioning involve:

- The construction of the new renewable photovoltaic solar power plant.
- Construction of an office for administrative work.
- Installation of the solar power plant's electricity grids.
- Connection of the plant's grid to the main electricity grid.
- Removal of the solar panels, steel rods and dispensing equipment.
- Removal of associated buildings and other infrastructure.

This externally prepared Health Safety and Environmental (HSE) compliance monitoring report for the ongoing Renewable Photovoltaic Solar Power Plant at Gobabis Omaheke, activities provides detailed results of the environmental monitoring compliance undertaken for period June 2019-June 2022. The period under review covers all the activities previously and currently being undertaken in the operation of the Renewable Photovoltaic Solar Power Plant at Gobabis Omaheke. This report has been prepared as part of the requirements and conditions of the Environmental Clearance Certificate (ECC) that was issued by the Environmental Commissioner dated the 7th June 2019. The

environmental monitoring activities were undertaken in accordance with the provisions of the Environmental Clearance Certificate (ECC) that was issued by the Ministry of Environment and Tourism in line with the Environmental Management Plan (EMP) for the operation of the Renewable Photovoltaic Solar Power Plant at Gobabis Omaheke. The proponent incorporated the EMP in the Environmental Management System (EMS) of the company, national and international environmental best practices and standards for operation of the Renewable Photovoltaic Solar Power Plant at Gobabis Omaheke. The monitoring results outlined in this report provide a detailed plan of actions that were implemented by the proponent for minimising and maximising the identified negative and positive impacts respectively.

The implementation of the external environmental monitoring plan has been undertaken by Centre for Geosciences Research CC on behalf of Ejuva one Energy (Pty) Ltd (the Proponent) and in line with the provisions of the Environmental Management Plan (EMP) and the conditions of the Environmental Clearance Certificate (ECC) that was issued by the Office of the Environmental Commissioner in the Ministry of Environment and Tourism (MET). The EMP requirements were implemented by the Proponent as well as all the contractors and subcontractors who undertook the various activities of the ongoing operation of the Renewable Photovoltaic Solar Power Plant at Gobabis Omaheke Region..

Based on the overall Health, Safety and Environment (HSE) performance monitoring undertaken for this project, no diversions from the environmental commitments as outlined in the Environmental Management Plan (EMP) and the Environmental Clearance Certificate (ECC) provisions have been observed or recorded to date. It's clear that the ongoing operation of the Renewable Photovoltaic Solar Power Plant at Gobabis Omaheke and all the associated activities have been undertaken with the highest Health, Safety and Environment (HSE) commitment as outlined in the EMP.

This environmental management plan (EMP) aims to take a pro-active route by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigating measures might be included if necessary. All Contractors and sub-Contractors taking part in any of the phases should be made aware of the contents of the EMP and of the Environmental Impact Assessment (EIA), so as to plan their activities accordingly in an environmental sound manner.

2. PROJECT DESCRIPTION

Ejuva one(Pty) Ltd is operating the 5 MW Renewable Photovoltaic Solar Power Plant within the municipal boundaries of Gobabis. The 5MW solar power plant supply electricity to Nampower which is then distributed nationwide. The rationale for the development project is based upon the increase in the demand for electricity in the country due to the rapid industrial expansion. The boom in business activities in the country has lead toa demand in electrical services which have grown at a faster rate than expected. The project will be situated within Gobabis because of town's high sun hours, which is in the eastern part of the country, Omaheke region.

This environmental performance monitoring report prepared for the operating the 5 MW Renewable Photovoltaic Solar Power Plant covers the period June 2019-June 2022. The preparation of this monitoring report is based on the requirements of the Environmental Impact Assessment (EIA) Regulations No. 30 of 2012 gazetted under the Environmental Management Act, (EMA), 2007, (Act No. 7 of 2007 and the Environmental Clearance Certificate (ECC) that was issued by the Ministry of Environment and Tourism in line with the Environmental Management Pan (EMP) for the operating the 5 MW Renewable Photovoltaic Solar Power Plant, at Gobabis Omaheke.

The monitoring results outlined in this report provide a detailed plan of actions that were implemented by the proponent for minimising and maximising the identified negative and positive impacts respectively.

3. PURPOSE OF THIS MONITRING REPORT

The purpose of this report is to review, summarise and analyse the Environmental Management Plan (EMP) performances with respect to the ongoing operating the 5 MW Renewable Photovoltaic Solar Power Plant activities undertaken for the period June 2019-June 2022 This environmental performances monitoring report consists of the following sections:

- ❖ Background to the Environmental Monitoring Plan;
- ❖ Environmental Monitoring Plan;
- ❖ Results of the Environmental Monitoring;
- ❖ Conclusions and Recommendations.

The performance monitoring undertaken involved reviewing, observations and recording of activities taking place in the operating the 5 MW Renewable Photovoltaic Solar Power Plant. The monitoring process involved routine gathering of information on all aspects of the ongoing the operating the 5 MW Renewable Photovoltaic Solar Power Plant activities and check on how project activities are progressing against the provisions of the EMP through review, systematic and purposeful observations.

The environmental issues related to construction and operation of a renewable photovoltaic solar power plant are mostly local and are common in most construction and operations. These issues include visual impacts, impact on biodiversity, land and soil disturbance and also social impacts.

During the process of site clearance for the construction phase there will be some land and soil disturbance which results in localised loss of flora as well as any other fauna that may be depended on such specific flora.



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7 June 2019

OFFICE OF THE ENVIRONMENTAL COMMISSIONER

Managing Director
Ejuva One Solar Energy (Pty) Ltd
P.O. Box 12012
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Namibia

Dear Sir/Madam

SUBJECT: ENVIRONMENTAL CLEARANCE CERTIFICATE FOR THE OPERATION OF THE RENEWABLE PHOTOVOLTAIC SOLAR POWER PLANT IN GOBABIS, OMAHEKE REGION

The Environmental Management Plan submitted is sufficient as it made provisions of the environmental management concerning the proposed activities. From this perspective, regular environmental monitoring and evaluations on environmental performance should be conducted. Targets for improvements should be established and monitored throughout this process.

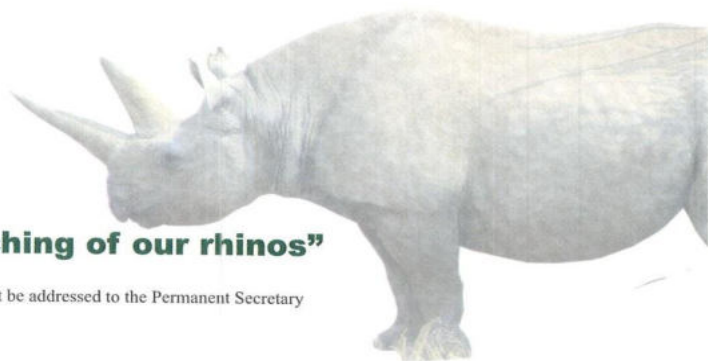
This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project.

On the basis of the above, this letter serves as an environmental clearance certificate for the project to continue. However, this clearance letter does not in any way hold the Ministry of Environment and Tourism accountable for any misleading information, nor any adverse effects that may arise from this project's activities. Instead, full accountability rests with Ejuva One Solar Energy (Pty) Ltd.

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

Yours sincerely,

Fredrick Mupoti Sikabongo
DEPUTY ENVIRONMENTAL COMMISSIONER



“Stop the poaching of our rhinos”

All official correspondence must be addressed to the Permanent Secretary

Figure 1. Copy of the ECC that was granted on the 7th June 2022.

4. ENVIRONMENTAL REGULATORY REQUIREMENTS

The ongoing operating the 5 MW Renewable Photovoltaic Solar Power Plant falls under the activities that are listed in the Environmental Impact Assessment (EIA) Regulations 2012 and cannot not be undertaken without an Environmental Clearance Certificate (ECC). An Environmental Scoping and Environmental Management Plan (EMP) report was prepared by Centre for Geosciences Research cc in order to support the application for ECC. An ECC valid for a period of three years was issued by the Environmental Commissioner on the 7th June 2019 (Fig. 1). During the ongoing operation of the 5 MW Renewable Photovoltaic Solar Power at Gobabis in Omaheke, environmental performance monitoring activities were undertaken in accordance with the provisions of the Environmental Clearance Certificate (ECC) in line with the Environmental Management Pan (EMP) report. The monitoring results outlined in this report provide a detailed plan of actions that were implemented by the proponent for minimising and maximising the identified negative and positive impacts respectively.

5. Environmental Management Plan

The Environmental Management Plan (EMP) is the tool that can provide the assurance that the proponent has made suitable provisions for mitigation. The EMP describes the methods and procedures for mitigation and monitoring the impacts identified in the EIA report. The aim of the EMP is to:

- Ensure that the project complies with the goals of the Namibian Environmental Management Act 2007, (No. 7 of 2007), and;
- Provide a framework for implementing the management actions recommended in the EIA for construction, operational and decommissioning phases of the activities associated with the development of the proposed fuel retail facility.

The following legislation governs the EIA/EMP process in Namibia, pertaining to the proposed development and operation of the solar plant.

a. The Namibian Constitution

Article 95 of Namibia's constitution provides that:

“The State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at the following:

(l) management of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future; in particular the Government shall provide measures against the dumping or recycling of foreign nuclear and toxic waste on Namibian territory.”

This article recommends that a relatively high level of environmental protection is called for in respect of pollution control and waste management.

b. Environmental Management Act of Namibia (2007)

The Act provides a broad definition to the term “environment” - land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, paleontological or social values. NOTE: this definition of “environment” was used throughout this report.

This Act provides a list of projects requiring an EIA. The proposed development is also listed as a project requiring an EIA under this Bill.

c. National Heritage Act No. 27 of 2004

The Heritage Act of 2004 makes provision for the developer to identify and assess any archaeological and historical sites of significance. The existence of any such sites should be reported to the Monuments Council as soon as possible. The Council may serve notice that prohibits any activities as prescribed within a specified distance of an identified heritage/archaeology site.

d. Environmental Assessment Policy of Namibia

The Environmental Assessment Policy of Namibia requires that all projects, policies, programmes, and plans that have detrimental effect on the environment must be accompanied by an EIA. It further provides a guideline list of all activities requiring an impact assessment. The solar plant is listed as a project requiring an impact assessment as per the following points in the policy:

- i. Transportation of hazardous substances & radioactive waste.
- ii. Storage facilities for chemical products.
- iii. Industrial installation for bulk storage of fuels.

The policy provides a definition to the term “environment” - broadly interpreted to

include biophysical, social, economic, cultural, historical and political components and provides reference to the inclusion of alternatives in all projects, policies, programmes and plans. Cumulative impacts associated with proposed developments must be included as well as public consultation. The policy further requires all major industries and mines to prepare waste management plans and present these to the local authorities for approval.

Apart from the requirements of the Draft Environmental Assessment Policy, the following sustainability principles need to be taken into consideration, particularly to achieve proper waste management and pollution control.

e. cradle to Grave Responsibility

This principle provides that those who manufacture potentially harmful products should be liable for their safe production, use and disposal and that those who initiate potentially polluting activities should be liable for their commissioning, operation and decommissioning.

i. Precautionary Principle

There are numerous versions of the precautionary principle. At its simplest it provides that if there is any doubt about the effects of a potentially polluting activity, a cautious approach should be adopted.

ii. The Polluter Pays Principle

A person who generates waste or causes pollution should, in theory, pay the full costs of its treatment or of the harm, which it causes to the environment.

iii. Public Participation and Access to Information

In the context of environmental management, citizens should have access to information and the right to participate in decisions making.

f. Electricity Act No. 4 of 2007

The Act stipulates the establishment of the Electricity Board and for its powers and functions. It further provides for the requirements and conditions for obtaining licences for the provision of electricity, and for the powers and obligations of licensees and to provide for incidental matters.

The objective of the Act is laid down in its Section 3 which is to exercise control over and regulate the provision, use and consumption of electricity in Namibia

through the Electricity Control Board (ECB) as well as to oversee the efficient functioning and development of the electricity industry and security of electricity provision. The Act under its Section 21 states that the applicant has to submit an Environmental Impact Assessment study indicating the extent of any potential damage to or pollution of the environment and the steps proposed to prevent such damage or pollution and to restore the environment generally and in terms of existing environmental legislation. It is for this reason that Ejuva one(Pty) Ltd Ltd had appointed Centre for Geosciences Research cc to undertake the EIA study for the current operational renewable solar power plant in Gobabis.

6. ENVIRONMENTAL MONITORING PLAN

a. Objectives of the Performance Monitoring Plan

The main objectives of the Environmental Performance Monitoring Plan are the following:

- i. Verify of the correct application of the monitoring measures as presented in the Environmental Management Plan (EMP);
- ii. Establish a monitoring program for the most relevant environmental parameters, identifying the monitoring activities and frequencies;
- iii. Identify the impacts foreseen by the project and any unforeseen deviations, allowing for the implementation of corrective measures as needed;
- iv. Provide assurance to stakeholders requirements with respect to environmental and social performances;
- v. Check the overall effectiveness of the EMP procedures in protecting the receiving environment;
- vi. Comply with HSE regulations, standards and operation conditions, and;
- vii. Compare actual impacts with those predicted in the EIA and thereby aim to improve the EIA process for possible future development in Namibia.

Overall, the above objectives have been achieved during the Environmental Performance Monitoring programme undertaken by Centre for Geosciences Research cc for the ongoing operating the 5 MW Renewable Photovoltaic Solar Power at Gobabis in Omaheke for period June 2019- June 2022.

b. Roles and Responsibilities

Employer's Representative (ER) / Project Manager

During the ongoing operating the 5 MW Renewable Photovoltaic Solar Power at Gobabis in Omaheke the proponent had appointed an **Employer's Representative (ER)** with the following responsibilities with respect to the EMP implementation:

- ❖ Act as the site project manager and implementing agent;
- ❖ Ensure that the proponent's responsibilities are executed in compliance with the relevant legislation;
- ❖ Ensure that all the necessary environmental authorizations and permits have been obtained;
- ❖ Assist the Plant Operation contractor/s in finding environmentally responsible solutions to challenges that may arise;
- ❖ Should the ER be of the opinion that a serious threat to, or impact on the environment may be caused by the construction / operation activities, he/she may stop work; the proponent must be informed of the reasons for the stoppage as soon as possible;
- ❖ The ER has the authority to issue fines for transgressions of basic conduct rules and/or contravention of the EMP;
- ❖ Should the Contractor or his/her employees fail to show adequate consideration for the environmental aspects related to the EMP, the ER can have person(s) and/or equipment removed from the site or work suspended until the matter is remedied;
- ❖ Maintain open and direct lines of communication between the landowners and proponent, as well as any other identified Interested and Affected Parties (I&APs) with regards to environmental matters, and;

- ❖ Attend regular site meetings and inspections as may be required for the ongoing operation of the 5 MW Renewable Photovoltaic Solar Power at Gobabis in Omaheke.

c. Project Health, Safety and Environment (Project HSE) Manager

In line with the provisions of the EMP, the proponent appointed a **Project Health, Safety and Environment (Project HSE) Manager** with the following responsibilities with respect to the EMP implementation:

- ❖ Assist the ER in ensuring that the necessary environmental authorizations and permits have been obtained;
- ❖ Assist the ER and Contractor in finding environmentally responsible solutions to challenges that may arise;
- ❖ Conduct environmental monitoring as per EMP requirements;
- ❖ Carry out regular site inspections (on average once per week) with regards to compliance with the EMP; report any non-compliance(s) to the ER as soon as possible;
- ❖ Organize for an independent internal audit on the implementation of and compliance to the EMP to be carried out Plant operation activity; audit reports to be submitted to the ER;
- ❖ Continuously review the EMP and recommend additions and/or changes to the EMP;
- ❖ Monitor the Contractor's environmental awareness training for all new personnel;
- ❖ Keep records of all activities related to environmental control and monitoring; the latter to include a photographic record of the solar plant operation activities, rehabilitation process, and a register of all major incidents, and;
- ❖ Attend regular site meetings.

d. Contractor and Subcontractor

In line with the provisions of the EMP, the responsibilities of the **Contractors and Subcontractors** appointed by the proponent to undertake certain field-based activities of the ongoing operating the 5 MW Renewable Photovoltaic Solar Power at Gobabis in Omaheke includes the following:

- ❖ Comply with the relevant legislation and the EMP provision);
- ❖ Preparation and submission to the proponent / ER of the following Management Plans:
 - Environmental Awareness Training and Inductions;
 - Emergency Preparedness and Response;
 - Waste Management; and;
 - Health and Safety.
- ❖ Ensure adequate environmental awareness training for senior site personnel;
- ❖ Environmental awareness presentations (inductions) to be given to all site personnel prior to work commencement; the Project HSE manager is to provide the course content and the following topics, at least but not limited to, should be covered:
 - The importance of complying with the EMP provisions;
 - Roles and Responsibilities, including emergency preparedness;
 - Basic Rules of Conduct (Do's and Don'ts);
 - EMP: aspects, impacts and mitigation;

- Fines for Failure to Adhere to the EMP, and;
 - Health and Safety Requirements.
- ❖ Record keeping of all environmental awareness training and induction activities, and;
 - ❖ Attend regular site meetings and environmental inspections.

e. Centre for Geosciences Research (External)

The responsibilities of Centre for Geosciences Research (CEGEOR) included the following:

- ❖ Provided external independent environmental performance monitoring / auditing support services to the ongoing operation of the 5 MW Renewable Photovoltaic Solar Power at Gobabis in Omaheke activities;
- ❖ Undertook independent monitoring activities;
- ❖ Provided external HSE compliance monitoring and reporting support services, and;
- ❖ Prepared this environmental performance monitoring report for the period under review.

f. Reporting Process

In line with the provisions of the EMP daily, weekly, monthly and annual related activities were undertaken by the Employer's Representative (ER), Project HSE manager, Contractor, Subcontractor and Centre for Geosciences Research cc(CEGEOR) as part of the Environmental Performance Monitoring Plan of the ongoing operating the 5 MW Renewable Photovoltaic Solar Power Plant activities.

Daily, weekly, monthly and annual related activities Environmental Performance Monitoring activities have all contributed to the preparation of this Environmental Performance Monitoring Report for the period under review. This report is prepared by the external consultants (CEGEOR).

7. RESULTS OF THE ENVIRONMENTAL MONITORING

a. Environmental Performance Monitoring Strategy

The monitoring programme was developed to allow maximum flexibility in both the timing and site conditions in order to allow adaptation to the conditions encountered and to allow decisions to be made in the solar plant operation available data.

The review of the environmental performance monitoring activities implemented by the proponent for the period under review took into consideration a hierarchy of methods for mitigating significant adverse effects adopted during the solar plant operation process in order of preference and as follows:

- (i) Enhancement, e.g. provision of new habitats;
- (ii) Avoidance, e.g. sensitive design to avoid effects on ecological receptors;
- (iii) Reduction, e.g. limitation of effects on receptors through design changes, and;
- (iv) Compensation, e.g. Gobabis Municipality benefits.

7.1 Scope of the Environmental Performance Monitoring Plan

The following is the summary of the scope of the Environmental Performance monitoring, observations and auditing activities that have been undertaken in line with the provisions of the EMP for the ongoing operation of the 5 MW Renewable Photovoltaic Solar Power at Gobabis in Omaheke (Table 3.1.1 -4.1.4):

1. Measures implemented during the project planning and implementation and operation;
2. Measures taken in the implementation of the EMP;
3. Measures taken as part of the ongoing stakeholders relations;

4. Measures taken to enhance positive socioeconomic impacts;
5. Measures taken to enhance environmental awareness briefing and training;
6. Measures taken during the operation of the solar plant infrastructure;
7. Use of existing access tracks with the solar plant for movements;
8. Measures for preventing flora destruction;
9. Measures taken for preventing faunal destruction;
10. Measures implemented for the erection of solar panel stands;
11. Measures taken to minimise negative socioeconomic impacts;
12. Measures taken to minimise health and safety impacts;
13. Measures taken to minimise visual impacts;
14. Measures taken for waste (solid and liquid) management;
15. Measures taken in implementing the rehabilitation plan, and;
16. Measures taken in collecting environmental data sets.

7.2 Environmental Performance Monitoring Results

The Environmental Management Plan (EMP) provided a detailed plan of action required in the implementation of the mitigation measures for minimising and maximising the identified negative and positive impacts respectively.

The EMP also provided the management actions with roles and responsibilities requirements for implementation of environmental management strategies by the proponent through the Contractors and Subcontractors who have been undertaking the operating the 5 MW Renewable Photovoltaic Solar Power at Gobabis in Omaheke. The EMP gave commitments including financial and human resources provisions for effective management of the likely environmental liabilities during and after the implementation of the ongoing operation of the 5 MW Renewable Photovoltaic Solar Power at Gobabis in Omaheke.

Tables 3.1.1 -4.1.4 shows the findings of this environmental performance monitoring report prepared for operating the 5 MW Renewable Photovoltaic Solar Power Plant at Gobabis Omaheke, covering the period June 2019-June 2022. The results shown in Tables 3.1.1 -4.1.4 details the specific mitigations measures implemented by the proponent with respect to the ongoing operation of the 5 MW Renewable Photovoltaic Solar Power Plant activities and in particular for the operation activities for the period under review.

8 MANAGEMENT OF ENVIRONMENTAL ASPECTS

8.1 Construction / Decommissioning Phase

This section details mitigation measures proposed for the implementation during the construction and operation phase.

8.1.1 Dust

Identified Impact	Description	Mitigation	Monitoring	Responsible body	Performance monitoring Results
Dust	Dust may be generated during the construction/decommission phase and might be aggravated when strong winds occur. These are expected to be site specific and will potentially pose an nuisance to the neighbouring properties. The construction of the proposed facility should have minimal impact on the surrounding air quality.	It is recommended that regular dust suppression be included in the construction phase, when dust becomes an issue.	Regular visual inspection	Ejuva one (Pty) Ltd	Implemented in accordance with the provisions of the EMP. No diversions from the EMP have been observed

8.1.2 Noise

Identified Impact	Description	Mitigation	Monitoring	Responsible body	Performance monitoring Results
Noise	Noise pollution due to construction equipment and machinery on site	Ensure engines are fitted with mufflers. Equipment and machinery operators should be equipped with ear protection equipment	Strictly operational lines. Regular inspection	Ejuva one (pty) ltd	Implemented in accordance with the provisions of the EMP. No diversions from the EMP have been observed

8.1.3 Safety and Security

Identified Impact	Description	Mitigation	Monitoring	Responsible body	Performance monitoring Results
Safety and Security	During the construction and decommissioning phase, earthmoving equipment will be used on site. This increases the possibility of injuries. Presence of equipments may encourage criminal activities	The responsible contractor must ensure that all staff members are briefed about the potential risks of injuries onsite. The contractor is further advised to ensure that adequate emergency facilities including first aid kit are available on site	Security systems monitoring safety, procedures first aid training	Ejuva one (pty) ltd	Implemented in accordance with the provisions of the EMP.No diversions from theEMP have beenobserved

8.1.4 Nuisance Pollution

Identified Impact	Description	Mitigation	Monitoring	Responsible body	Performance monitoring Results
Nuisance pollution	Aesthetics and inconvenience caused to persons trying to access/exit immediate neighbouring buildings and/or destinations.	Take cognition when parking vehicles and placing equipments and infrastructure	Regular visual inspection	Ejuva one (Pty) Ltd	Implemented in accordance with the provisions of the EMP.No diversions from theEMP have beenobserved

8.1.5 Groundwater Contamination

Identified Impact	Description	Mitigation	Monitoring	Responsible body	Performance monitoring Results
Groundwater contamination	Groundwater contamination can occur during the decommissioning phase from the toxic substances that are contained in the solar panels such as cadmium and arsenic. This are extremely harmful substances and can be extremely dangerous if they get into the ground water .Minimal groundwater contamination can be caused by leakages of fuel from machinery and heavy-duty vehicles during construction and decommissioning phase	Recycle the solar panels during the decommissioning phase. Dispose the panels properly during the decommissioning phase. Prevent spillages of any chemical.	Regular visual inspection	Ejuva one (Pty) Ltd	Implemented in accordance with the provisions of the EMP.No diversions from the EMP have been observed

8.1.6 Generation of Waste

Identified Impact	Description	Mitigation	Monitoring	Responsible body	Performance monitoring Results
Generation of waste	This can be in a form of contaminated soil and building rubble, wires, and human waste or dumped on surrounding properties or land. This includes road reserves e.t.c . Provide adequate waste bins in litter prone areas on the site and dispose the solid waste in the Gobabis dumping site. Clear dumping area with Gobabis Municipality or the Local Authority in the area	Ensure that no excavated soil, refuse or building rubble generated on site are placed	Regular visual inspection	Ejuva one (Pty) Ltd	Implemented in accordance with the provisions of the EMP.No diversions from the EMP have been observed

8.1.7 Economic impacts

Identified Impact	Description	Mitigation	Monitoring	Responsible body	Performance monitoring Results
Economic Impacts	The number of jobs that might be created. More than 100 people will be employed during construction phase.	Locals should be highly considered when hiring for temporary or permanent jobs	Inspections should be done during the recruitment process	Ejuva one (Pty) Ltd	Implemented in accordance with the provisions of the EMP. No diversions from the EMP have been observed

8.2 Operational Phase

This section details mitigation measures proposed for the implementation during the operational phase. Main responsible party in this section is

8.2.1 Visual Impacts

Identified Impact	Description	Mitigation	Monitoring	Responsible body	Performance monitoring Results
Visual impacts	the change to the existing visual environment (i.e. views) caused by the intervention and the extent to which that change compromises (negative impact) or enhances (positive impact) or maintains the visual quality of the scene as perceived by people visiting, working or living in the area. The visual impact will thus be more negative than positive in this scenario but minimal as there are already existing solar panels in Gobabis.	Re-vegetate the area; grow palm trees around the renewable photovoltaic solar power plant at a distance of 50 m away from the power plant. This will reduce the visibility of the solar panels in the powerplant.	Inspections should be done during the recruitment process	Ejuva one (Pty) Ltd	Implemented in accordance with the provisions of the EMP. No diversions from the EMP have been observed

8.2.2 Health and Safety

Identified Impact	Description	Mitigation	Monitoring	Responsible body	Performance monitoring Results
Health and safety	Even though photovoltaic solar panels are safe and effective, there are potential health and safety hazards associated with the full cycle of photovoltaic's. Chemicals used to produce the panels can cause health hazards. Minimal hazards can also occur during events of fire, if any was to occur.	Adequate easures must bebrought in place to ensure safety of staff on site, and includes: <ul style="list-style-type: none"> • Proper training of operators • First aid treatment • Medical assistance • Emergency treatment • Protective clothing 	Inspections should be done during the recruitment process	Ejuva one (Pty) Ltd	Implemented in accordance with theprovisions of the EMP.No diversions from theEMP have beenobserved

8.2.3 Ecological Impacts

Identified Impact	Description	Mitigation	Monitoring	Responsible body	Performance monitoring Results
Ecological Impacts	No conservation worthy vegetation and faunaexists at the site	Some vegetation should be planted at the site to minimizesurface run-off. Some vegetation should be planted on site to reduce visual impacts	Visual inspection	Ejuva one (Pty) Ltd	Implemented in accordance with theprovisions of the EMP.No diversions from theEMP have beenobserved

8.2.4 Economic Impacts

Identified Impact	Description	Mitigation	Monitoring	Responsible body	Performance monitoring Results
Ecological Impacts	The number of jobs that might be created , theproject is estimated to create jobs for 20-30 people during its operational phase	Locals should be highly considered when hiring for temporary or permanent jobs	Regular inspections	Ejuva one (Pty) Ltd	Implemented in accordance with theprovisions of the EMP.No diversions from theEMP have beenobserved

9 CONCLUSIONS AND RECOMMENDATIONS

Overall Project Performance

The implementation of the ongoing operating the 5 MW Renewable Photovoltaic Solar Power at Gobabis in Omaheke activities, followed all the provisions and conditions of the EMP, Environmental Clearance Certificate (ECC) and all other applicable regulations and legislations with no deviations from the site policies, protocols, procedures and standards. In summary, the following observations are noted with respect to the implementation of the ongoing operation of the 5 MW Renewable Photovoltaic Solar Power at Gobabis in Omaheke activities:

- (i) The implementation of the activities was only undertaken after all the required authorisations such as the Environmental Clearance Certificate (ECC) and Municipality by laws;
- (ii) The onsite solar plant operation teams reduced any likely cumulative impacts through coordinating their activities with each other and adhered to the recommendations contained in the EMP as well as all other relevant operational standards, procedures, manuals and company Environmental Policy concerning conservation and preservation of natural environment;
- (iii) All the onsite solar operation teams were constantly informed and reminded of good environmental management and commitments at all times through daily briefings, awareness raising and corrective actions where an onsite mistakes or unacceptable conducts were identified;
- (iv) General good environmental management and performances as well as protection of the receiving environment formed part of the onsite daily briefings / meetings by the Health, Safety and Environment (HSE) Teams;
- (v) All communications and public relations issues with the stakeholders were directed through one communication channel. The Project Manager / HSE Manager / Employer Representative onsite played a significant role in this regard and contractor's personnel were courteous and considerate when dealing with members of the general public;
- (vi) All activities have been undertaken to the highest safety standard. Personal Protective

Equipment (PPE) and gears were used at all times. Safety and fire drills were regularly undertaken; especially during the COVID -19 pandemic social distance was adhered to.and wearing of face masks.

(vii) No waste was buried or burned onsite and no litter was left after the completion of activities around the solar plant during construction phase. .

Conclusions

Based on the overall Health, Safety and Environment (HSE) performance monitoring undertaken for this project, no diversions from the environmental commitments as outlined the Environmental Management Plan (EMP) and the Environmental Clearance Certificate (ECC) provisions have been observed or recorded for the ongoing operation of the 5 MW Renewable Photovoltaic Solar Power at Gobabis in Omaheke. It's clear that the ongoing operation of the 5 MW Renewable Photovoltaic Solar Power at Gobabis in Omaheke and all the associated activities have been undertaken with the highest Health, Safety and Environment (HSE) commitment as outlined in the Health, Safety and Environment (HSE) standards.
