Outapi (Camelthorn Business Ventures (Pty) Ltd)

Submitted to: Camelthorn Business Ventures Number Two (Pty) Ltd
Attention: Mr. Israel Shihepo
PO Box 27527
Windhoek
Namibia

REPORT:

COMPLIANCE REPORT FOR THE 5 MW AC SOLAR PLANT IN OUTAPI, OMUSATI REGION, NAMIBIA

PROJECT NUMBER: ECC-43-492-REP-02-D

REPORT VERSION: REV 01

DATE: 30 NOVEMBER 2023

ECC ENVIRONMENTAL COMPLIANCE CONSULTANCY

TITLE AND APPROVAL PAGE

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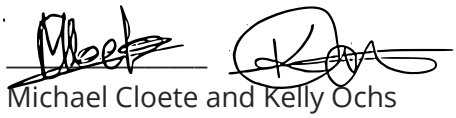

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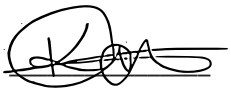

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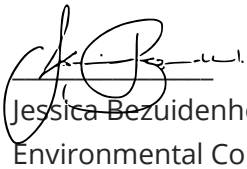

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ABBREVIATIONS

Abbreviation	Description
AC	alternate current
Camelthorn Business Ventures 2	Camelthorn Business Ventures Number Two (Pty) Ltd
CO	carbon monoxide
DEA	Directorate of Environmental Affairs
ECB	electricity control board
ECC	Environmental Compliance Consultancy
ECC	environmental clearance certificate
EHS	environmental health and safety
EIA	environmental impact assessment
EMF	Electric and Magnetic Field
EMP	environmental management plan
HIV/AIDS	human immunodeficiency virus / acquired immunodeficiency syndrome
ICNIRP	Commission of Non-Ionizing Radiation Protection
IEEE	Institute of Electrical and Electronics Engineers
IFC	International Finance Coalition
InnoSun	InnoSun Energy Holdings (Pty) Ltd
IPP	independent power producer
ISO	International Organization for Standardization
Ltd.	Limited
MEFT	Ministry of Environment, Forestry and Tourism
MSDS	material safety data sheets
MW	megawatts
MVA	megavolt ampere
No	Number
NOx	nitrogen oxides
PCB	Polychlorinated Biphenyls
PM	particulate matter
PPE	personnel protective equipment
Pty	proprietary
PV	photovoltaic
REFIT	Renewable energy feed-in tariff
Reg	registration
SO2	sulphur dioxide
STDs	sexually transmitted diseases
VOC	Volatile Organic Compounds

1 INTRODUCTION

1.1 BACKGROUND INFORMATION

InnoSun Energy Holding (Pty) Ltd (herein referred to as the 'Proponent' or 'InnoSun'), a Namibian subsidiary of the French company InnoVent, is an independent power producer (IPP) that was established in 2012. InnoSun is specialised in the development, construction, operation and maintenance of renewable generation plants making use of solar and wind technologies. Currently, InnoSun operates four solar photovoltaic (PV) plants and one wind farm in Namibia. Camelthorn Business Ventures 2 is a Namibian company that was established in 2012 aimed at developing impact in Namibia in the fields of real estate and infrastructures. In 2020, Camelthorn Business Ventures 2 was bought by InnoVent. InnoVent is currently operating wind and solar farms in Africa.

An environmental impact assessment (EIA) and environmental management plan (EMP) was compiled by Africa Planning Forum cc and submitted in August 2015, in order to support the application for an environmental clearance certificate for a 5 MW AC solar PV plant. The EMP was approved for the solar PV plant (Appendix A) in line with the approved environmental clearance certificate. The environmental clearance certificate was renewed by the Ministry of Environment, Forestry and Tourism (MEFT) on 09 February 2021 (ECC-01219) (Appendix B).

Figure 1 provides a locality map of the existing 5 MW AC solar plant in Outapi, Omusati Region, Namibia.

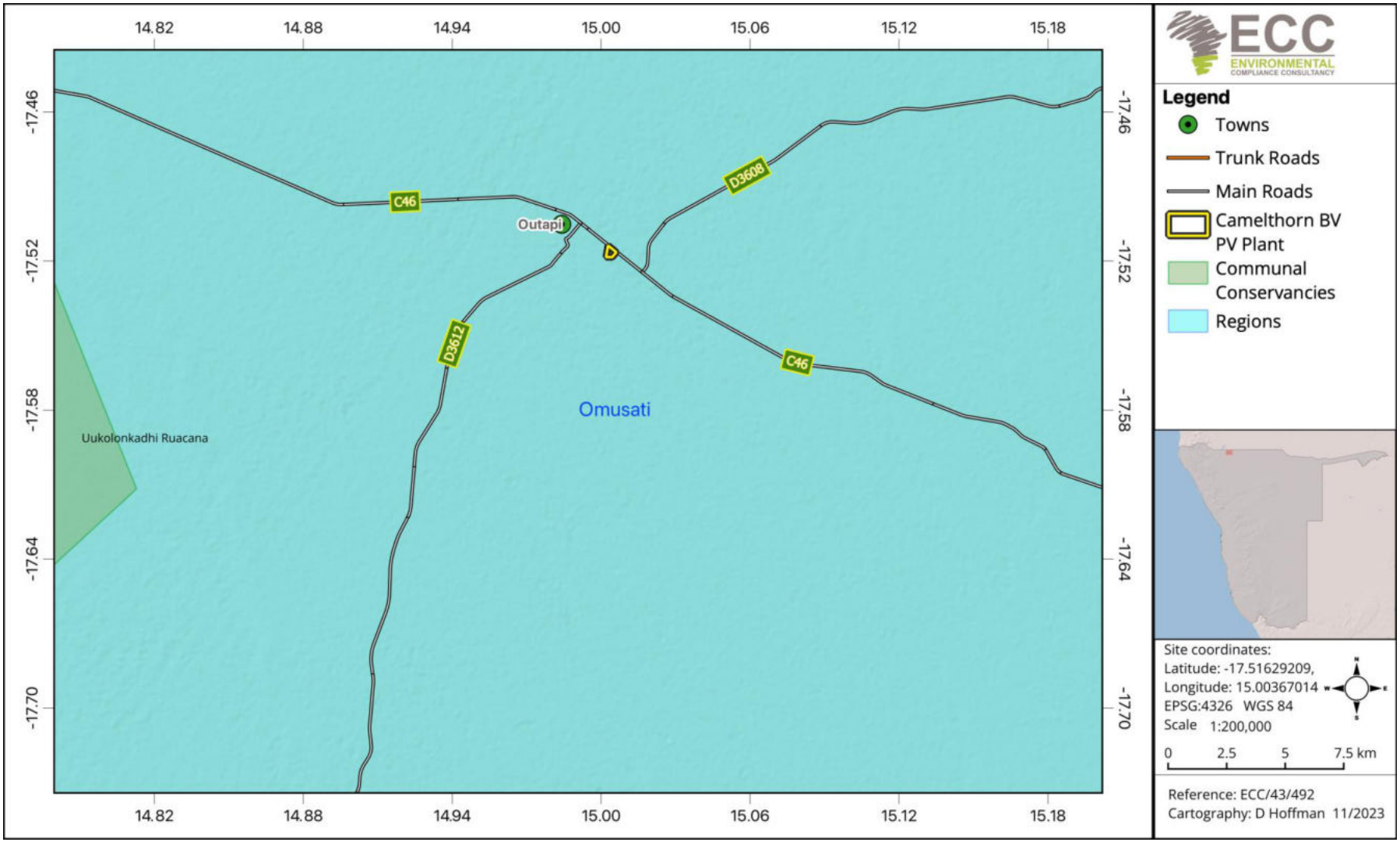

Figure 1 – Locality map of the existing 5 MW AC solar plant in Outapi, Omusati Region, Namibia

1.2 PURPOSE OF THIS DOCUMENT

Environmental Compliance Consultancy (ECC) has been engaged by InnoSun, on behalf of Camelthorn Business Ventures 2 (Pty) Ltd, to prepare the application to renew the environmental clearance certificate for the Outapi solar PV plant. The Proponent currently holds a valid environmental clearance certificate for the 5 MW AC solar PV plant in Outapi. As part of this application, an environmental compliance desktop audit and physical audit (site visit) (Appendix C) has been undertaken to determine the status of compliance with the EMP from February 2021 to October 2023. The site visit by ECC's environmental control officer was conducted on the 16th of November 2023.

1.3 PROPONENT DETAILS

The Proponent's details are set out in
Table 1.

Table 1 – Proponent details

Contact	Postal Address	Email Address	Telephone
Mr. Israel Shihepo Asset Manager	P.O. Box 27527 Windhoek Namibia	ishihepo@innosun.org	Tel: +264 61 254 700

1.4 ENVIRONMENTAL ASSESSMENT PRACTITIONER

Environmental Compliance Consultancy (ECC) (Reg. No. 2022/0593) has prepared this renewal report and on behalf of the Proponent.

This report has been authored by employees of ECC, who have no material interest in the outcome of this report, nor do any of the ECC team have any interest that could be reasonably regarded as being capable of affecting their independence in the preparation of this report. ECC is independent from the proponent and has no vested or financial interest in the project, except for fair remuneration for professional fees rendered based upon agreed commercial rates. Payment of these fees is in no way contingent on the results of this report or the assessment, or a record of decision issued by Government. No member or employee of ECC is, or is intending to be, a director, officer, or any other direct employee of The Proponent. No member or employee of ECC has, or has had, any shareholding in the Proponent.

All compliance and regulatory requirements regarding this report should be forwarded by email or posted to the following address:

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2 BACKGROUND TO THE PROJECT

Camelthorn Business Ventures 2 (Pty) Ltd has provided power in the Omusati region since 2018 with a primary objective to generate solar energy directly to households and streetlights. The northern part of Namibia is characterised by extremely high temperatures and solar radiation, which is ideal for solar energy generation. In 2014, Camelthorn Business Ventures 2 was granted a generation license by the Electricity Control Board (ECB) within the provisions of the Electricity Act, 2007, (Act No. 4 of 2007). In 2015 the company was enrolled in the national REFIT program selected by NamPower among the 14 IPP in October 2015 and received a financial closing approval in 2016. The construction of the plant commenced in September 2016 and during its construction created 40 jobs, of which six were permanent. Additionally, energy dependence on neighbouring countries and energy costs have been reduced and solar power lessens Namibia's carbon footprint.

The EMP is the binding document to which a clearance certificate is granted to a proponent to carry out a proposed activity. This document is subjected to periodically auditing as the activities transitions throughout the Project phases. The EMP is audited in order to monitor the progress of the project and ensure that all measures stipulated in the document are met and effectively adhered to as required by the Department of Environmental Affairs (DEA). In an event where the project activities alter, the EMP is required to be amended accordingly.

2.1 RENEWAL ACTIVITIES

The following is the activities associated with the operational and closure stages of the solar plant that could potentially have an impact on the biophysical and social environments:

- Operational phase – Solar energy generation and maintenance (For 25 years)
- Decommissioning and closure phase – decommissioning (After 25 years) / upgrade of facility

3 ENVIRONMENTAL COMPLIANCE AUDIT

3.1 SITE ACTIVITIES

3.1.1 MONITORING AND REPORTING

ECC compiled an operational health, safety and environmental report to demonstrate the compliance of the proponent and its employees with their EMP during the period of 2021 and 2022. The report is available in Appendix D. A physical audit occurred in November 2023. This enables the proponent to comply to all legal standards by pointing out areas of non-compliance and allowing them to take immediate action on implementing corrective actions.

3.1.2 ACTIVITIES CARRIED OUT FOR THE PERIOD OF FEBRUARY 2021 TO OCTOBER 2023

The following activities were undertaken for the period February 2021 – October 2023:

- Energy generation;
- Solar plant operation and
- Maintenance of solar plant, panels, maintenance and equipment shed and overall site.

3.2 ENVIRONMENTAL MANAGEMENT PLAN AND AUDITING

The approved EMP covers all adverse environmental impacts, including any additional potential impacts that may result from the solar PV plant. The EMP provides the technical details for each mitigation, monitoring and institutional measure, including the impact(s) to which it relates and the conditions when required, together with designs, equipment descriptions and operating procedures as granted.

3.3 COMPLIANCE AUDIT FINDINGS

This section outlines the findings of environmental audits (physical and desktop) during the period of review of the solar PV plant. It addresses obligations in terms of the key Acts that govern the activities on-site, the commitments made in the EMP, and present the findings and recommended corrective actions where applicable (Table 2 & Table 3).

The EMP therefore:

- Identifies all operation activities that could cause environmental damage (aspects and potential impacts) and provides a summary of actions required;
- Identifies institutions responsible for ensuring compliance with the EMP and provides their contact information;
- Provides standard procedures to avoid, minimize and mitigate the identified negative environmental impacts and to enhance the positive impact of the proposed activities on the environment;
- Forms a written record of procedures, responsibilities, requirements and rules for contractor/s, their staff and any other person who must comply with the EMP;

- Ensure zero pollution incidents; protect local flora, fauna, and water resources; and water use and other natural resources effectively and efficiently;
- Provides a monitoring and auditing programme to track and record compliance and identify and respond to any potential or actual negative environmental impacts;
- Provides a monitoring programme to record any mitigation measures that are implemented;
- Ensure that regular environmental audits are carried out by an experienced environmental control officer where appropriate; and
- Once operations have ceased, any impacts shall be rehabilitated.

3.4 ISSUES OF NON-COMPLIANCE

No issues of non-compliance were identified.

4 EMP COMPLIANCE AUDIT

Table 2 and Table 3 provides an overview of the compliance with EMP requirements as depicted in the approved EMP for the operational and decommissioning phase of the solar PV plant in Outapi (Appendix A).

Table 2 – Operational phase of EMP compliance audit

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
1) All activities	– Management and Monitoring	– Social and environmental performance	– Ensure that all aspects related to the EMP are implemented during the operations phase. Adhere to the regulations, rules, and procedures as well as current and future regional and local and use plans.	– Compliant	– The Proponent has adhered to the rules and regulations as per the EMP and will continue to do so.
2) All activities	– Consultation and disclosure	– Social and environmental performance	– Consult with project affected communities in a structure and culturally appropriate manner throughout the operations phase. Consultation should be "free" (of external manipulation, interference or coercion, and intimidation), "prior" (timely disclosure of information) and "informed" (relevant, understandable and accessible information).	– Compliant	– The Proponent ensured that a communication record is available on-site and stakeholders are adequately informed.

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
			– Adequately incorporate project affected communities' concerns.		
3) All activities	– Grievance Mechanisms (EP 6)	– Social and Environmental Performance	– Ensure a mechanism for receiving and resolving any concerns and grievances related to the project's social and environmental performance during the operations phase. – Address concerns promptly and transparently and in a culturally appropriate manner.	– Compliant	– The Proponent has grievances record on-site. – No grievances have been recorded to date.
4) All activities	– Training including awareness and inductions	– Social and Environmental Performance	– Train employees and contractors in matters related to the project's social and environmental performance, Namibia's regulatory requirements, and the requirements of the IFC Performance Standards. – Ensure adequate environmental awareness training for all personnel. – Give environmental induction presentations to all new personnel prior to work commencement.	– Compliant	– The Proponent provided training and awareness to staff associated with environmental impacts and mitigations, the EMP and emergency training.

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
5) All activities	– Labour and working conditions	– Social and Environmental Performance	– Establish, maintain and improve the worker-management relationship. Base the employment relationship on equal opportunity and fair treatment and no discrimination to be allowed. – Comply with Namibia's labour and employment laws and prevent unacceptable forms of labour, i.e. harmful child and forced labour. – Promote safe and healthy working conditions and the protection and promotion of worker health. – Document and communicate the Working Conditions and Terms of Employment. – Respect Collective Agreements and the right of workers to organize and bargain collectively.	– Compliant	– Appropriate Professional relationships have been successfully established and Namibian labour regulations have been adhered to.
6) All activities	– Employment and procurement opportunities	– Socio-economic	– Ensure local recruitment (of registered contractors or qualified and certified personnel, registered and certified with the appropriate statutory as per Electricity Control Board (ECB) licensee duty) and procurement to maximize benefit to region.	– Compliant	– Local recruitment has been done fairly and according to the legal provisions in the

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
					Labour Act as per the EMP.
7) All activities	– Occupational health and safety	– Social and Environmental Performance	– Adhere to all Namibian health and safety regulations. – Occupational health and safety training to be provided to all employees. – Ensure that qualified first aid can be provided to all employees. – Ensure that qualified first aid can be provided at all times. – Provide and ensure the active use of Personal Protective Equipment (PPE).	– Compliant	– The National health and safety regulations have been adhered to during the reporting period.
8) All activities	– Community health and safety	– Social and Environmental Performance	– Prevent communicable disease (e.g sexually transmitted diseases (STDs) such as HIV/AIDS transmission): provide surveillance and active screening and treatment of employees; prevent illness among employees in local communities (through health awareness and education initiatives); ensure ready access to medical treatment, confidentiality and appropriate care, particularly with respect to migrant workers; and promote immunisation.	– Compliant	– The Proponent has complied with this component set out in the EMP.

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
9) All activities	– Unauthorised public access	– Community safety	– Use gate on the access road(s) and the entire site must be fenced off. – Solar Plant should not be accessible to anyone from the public. – Notice or information boards relating public safety hazards and emergency contact details should be put up at gate(s) and at the solar plant. – Create a viewpoint area, possibly including an information centre, for the public/tourists.	– Compliant	– The Proponent maintained all required operational plans to ensure the safe status of the site and neighbouring communities during the reporting period.
10) All activities	– Increased traffic/vehicle movement	– Air quality (dust or Particulate Matter (PM) pollution)	– Maintain the road surface to preserve surface characteristics (e.g. texture and roughness). – Use dust control/suppression methods, such as applying water or non-toxic chemicals to minimize dust (oil and oil by-products is not a recommended measure to control road dust).	– Non-applicable	– No heavy loads were transported. – No dust was generated during operations.

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
11) All activities	– Increased traffic/vehicle movement (exhaust from diesel engines)	– Air quality and Occupational and community health and safety	– Fleet owners/operators to implement manufacturer recommended engine maintenance programs (to control vehicle emissions: Carbon Monoxide (CO), Nitrogen Oxide (NO_x), Sulphur Dioxide (SO_2), Particulate Matter (PM) and Volatile Organic Compounds (VOCs)).	– Compliant	– Regular engine maintenance was implemented to control vehicle emissions.
12) All activities	– Increased traffic/vehicle movement	– Occupational and community safety	– Adopt best transport safety practices by implementing the following measures: emphasize safety aspects among drivers; improve driving skills and require licensing of drivers; adopt limits for trip duration; avoid dangerous routes and times of day; and use speed control devices. – Regularly maintain vehicles and use manufacturer approved parts. – Use locally sourced materials (where possible) to minimise transport distances. – Employ safe traffic control measures, including the use of traffic and safety waning signs and flag persons to warn of dangerous conditions.	– Compliant	– The Proponent maintained traffic or vehicle safety measures during the reporting period.

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
13) All activities	– Storm water management	– Attraction of species (birds and bats) to the area due to open water and subsequent injury, disturbance, or mortality of species.	– Implement appropriate storm water management measures so as to avoid the presence of open water in the area.	– Non - applicable	– The Proponent did not perform any activity that triggered the need for this component of the EMP during the reporting period.
14) Operational solar plant	– Solar plant components	– Species injury, disturbance (and potential alteration of behavior), or mortality	– Implement monitoring programmes to study the potential impact(s) of thesolar plant on birds and bats.	– Non-applicable	– No species injuries or reason for monitoring programmes have been established.
	– Hazardous waste management	– Pollution of biophysical environment (soil and water)	– Solar Plant to be equipped with oil absorption and collection systems.	– Compliant	– A waste management plan is currently on-site. – Hazardous and non-hazardous

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
					material are handled and removed from the site to ensure safety.
	– Electromagnetic interference (television broadcasts)	– Community and Healthy Safety	– Install a higher quality or directional antenna or relocate/direct the antenna towards an alternative broadcast transmitter; or install an amplifier; or construct a new repeater station if a wide area is affected.	– Compliant	– The Proponent has complied with this component as per the EMP.
15) General solar maintenance plant	– Cleaning of panels to prevent dust and insect build-up	– Resource use/depletion of natural resources	– Ensure all wash water is recycled. Ensure there are no leaks from all taps, pipes and fittings.	– Compliant	– The Proponent ensured all water containers and equipment work properly. – No leaks were recorded during the reporting period.

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
	– Periodic painting of tower structures	– Pollution of biophysical environment (soil and water)	– Conform to ISO 12944:1998 Paints and varnishes - Corrosion protection of steel structures by protective paint systems- Part 4: Types of surface and surface preparation.	– Compliant	– There was no evidence of non-compliance.
	– Working at heights	– Occupational safety	– Test integrity of structure(s) before work commences. – Implement a fall protection program (including training in climbing techniques and the use of fall protection measures; inspection, maintenance, and replacement of fall protection equipment; and rescue of fall-arrested workers). – Establish criteria for use of 100% fall protection (the system should be fitting for the tower structure and movements (ascent, descent, and moving from point to point)). – Install fixtures on tower components to facilitate the use of fall protection systems. – Provide an adequate work-positioning device system to workers (with connectors on positioning systems	– Compliant	– Environmental training and safety awareness have been conducted on-site as per the EMP, especially concerning heights.

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
			compatible with the tower components to which they are attached). – Ensure proper rating and maintenance of hoisting equipment and training of hoist operators. – Material of equivalent strength; replace rope safety belts before signs of aging or fraying of fibres become evident. – Workers to use a second (backup) safety strap when operating power tools at height. – Remove signs/other obstructions from poles/structures before work commences. – Use approved tool bags for lowering/ raising tools/materials to workers on elevated structures. – Avoid conducting maintenance during poor weather conditions (especially where there is a risk such as lightning strikes).		

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
16) Power transmission and distribution	– Electric and Magnetic Fields (EMF)	– Occupational and community health	– Ensure that average and peak exposure levels remain below the reference levels developed by the Commission of Non-Ionizing Radiation Protection (ICNIRP). – Reduce the EMF (from power lines, substations, or transformers) by applying engineering techniques (if levels are expected or confirmed above the recommended levels): shielding with specific metal alloys; burying transmission lines; increasing the height of the transmission towers; or modifications to size, spacing and configuration of conductors.	– Compliant	– All operational activities are done in accordance with the EMP to always ensure occupational and community health.

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
17) Power transmission and distribution	– Hazardous materials management (insulating oils/gases (Polychlorinated Biphenyls (PCB) and Sulphur hexafluoride ((SF6 and fuels)	– Pollution of biophysical environment (soil and water)	– Minimize the use of SF6 (greenhouse gas). – The use of PCBs has largely been discontinued (see IFC EHS Guidelines for Electric Power Transmission and Distribution for the management of PCBs should it be used). – All activities, Hazardous materials management. – Wood preservatives? Needed?	– Compliant	– All measures to reduce Namibian carbon footprint were maintained. – No incidences of non-compliance to the waste management plan have been reported.
18) Power transmission and distribution	– Live power lines	– Occupational health and safety	– Allow only trained/certified employees to install, maintain,and repair electrical equipment. – Deactivate and properly ground live power distribution lines before work is conducted on, or close to, distribution lines. – Ensure that live-wire work is conducted by qualified workers and in accordance to the specific safety and insulation standards.	– Compliant	– The Proponent maintained all occupational health and safety procedures during the operational activities.

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
			– Do not approach an exposed energized or conductive part (even if the worker is trained) unless: the person is properly insulated from the energized part (e.g. gloves) and vice versa; the worker is properly isolated and insulated from any other conductive part (live-line work). – Implement a Health and Safety Plan, detailing specific training, safety measures, personal safety devices and other precautions, where maintenance and operation is required within minimum setback distances.		
19) Power transmission and distribution	– Working at heights on poles/structures	– Occupational health and saftey	– See general solar panel/plant maintenance, working at heights.	– Compliant	– Environmental training and safety awareness have been conducted on-site as per the EMP, especially concerning heights.

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
20) Power transmission and distribution	– EMF	– Occupational health and safety	– Prepare and implement an EMF Safety Program containing information on: potential exposure levels in the workplace and the use of personal monitors; training of workers to identify EMF levels and hazards; the identification and establishment of safety zones (areas acceptable for public exposure vs. those with expected elevated EMF levels and that only properly trained workers may access); action plans dealing with potential or confirmed exposure of levels that exceed those developed by the ICNIRP and Institute of Electrical and Electronics Engineers (IEEE).	– Compliant	– An EMF safety program has been implemented to ensure awareness and occupational health and safety.
21) Power transmission and distribution	– Electrocution	– Community health and safety	– Use signs, barriers, and education to prevent public contact with potentially dangerous equipment. – Ground conducting objects installed near power lines.	– Compliant	– There are multiple hazardous warning signs displayed to inform employees and the community about potentially

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
					dangerous zones.
22) All activities	– Water Management	– Resources use/ depletion of natural resources	– Implement a water conservation program, promoting the continuous reduction in water consumption and achieving savings in water pumping, treatment and disposal costs, commensurate with the magnitude and cost of water use.	– Compliant	– Water conservation programs are in place as per the EMP.
23) All activities	– Hazardous materials management	– Pollution biophysical environment (soil and water)	– Implement prevention and control measures for the use, handling and storage of hazardous materials. – Train workers on the correct transfer and handling of fuels and chemicals and the response to spills. – Immediately report and clean up any accidental hydrocarbon spill: Spill-Sorb, Drizzat Pads, Enretech Powder or Peat Moss can be used to clean up small spills; in case of larger spills, the spill together with the polluted soil should be removed	– Compliant	– All hazardous materials are stored in safe bunded containers on an impermeable surface.

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
			and disposed of at e.g. a biological remediation site.		
		– Occupational health and safety	– Implement hazard communication and training programs (including information on Material Safety Data Sheets (MSDS)) to make employees aware of workplace chemical hazards and how to respond to these. – Provide and ensure the active use of Personal Protective Equipment (PPE).	– Compliant	– All staff members are properly trained and have the appropriate PPE to protect employees effectively.
24) All activities	– Waste management solid	– Air quality	– Avoid the open burning of waste (whether hazardous, or non-hazardous).	– Compliant	– No evidence of waste burned on-site.
25) All activities	– Waste management non-hazardous and hazardous	– Pollution of biophysical environment	– As per Waste Management Plan. – Institute and maintain good housekeeping and operating practices; littering is not allowed. – Non-hazardous and hazardous waste to be collected and stored separately:	– Compliant	– No evidence of non-compliance has been recorded during the reporting period.

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
			– Non-hazardous waste to be transported to and disposed off at an approved waste disposal site. – Hazardous waste: recycle petroleum (fuels and lubricants) waste products and collect and recycle batteries and print cartridges. The remainder to be transported to a recognized hazardous waste disposal site, with prior permission from the site operator / owner.		
26) All activities	– Waste management sanitary	– Polluton biophysical environment	– Portable toilets (1 toilet per 30 employees; preferred 1:15) to be provided on the site; contents to be collected by an approved contractor and disposed of at an approved sewage site. Unless there will be a sewage plant?	– Compliant	– This component of the EMP has been adhered to.
27) All activities	– Wastewater management	– Pollution biophysical environment	– Ensure that the discharge of process wastewater and/or sanitary wastewater and/or wastewater from utility operations and/or storm water to land conform to the regulatory requirements.	– Compliant	– A wastewater management plan is available and used during the operational phase.

Table 3 - Decommissioning and closure phase EMP audit

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
1) Decommissioning and closure	– Decommissioning	– Social and Environmental Performance and Visual	– Isolate (electrically) the solar plant from the substation. – Disassemble the steel tower sections and cut off at the top of the foundation concrete; rehabilitate the hardstand area. – Remove all above-ground substation infrastructure and re-use, recycle or dispose of it. – Conduct a site contamination assessment; remove any contaminated material and dispose of at an appropriate disposal facility. – Break up foundations in the substation and remove for disposal. – Dig up below-ground substation infrastructure. – Conduct a validation survey to ensure that all contaminated material at the substation has been removed; remove any contaminated material and dispose of at an appropriate disposal facility. – Rehabilitate access tracks not required for ongoing land use activities.	– Non-applicable	– This aspect has not been triggered during the reporting period. – This will be applied should the Project undergo a decommissioning phase.

Activity/ Process	Aspect	Impact	Management/mitigation measures	Compliance	Comments
			– Remove all other equipment, waste, etc. from the area. – Reshape all disturbed areas to their original contours. Cover disturbed areas with previously collected topsoil and spread evenly. – Manually rip disturbed areas, where compaction has taken place, and cover the areas with previously collected topsoil. – Replant any previously removed native plant species in disturbed areas.		
2) Closure	– Loss of jobs and income	– Socio-economic	– Implement a skills training programme during the operations phase.	– Non-applicable	– This aspect has not been triggered during the reporting period.

5 CONCLUSION

No complaints were received and recorded during the reporting period. All proposed activities shall be carried out in compliance with the relevant requirements and conditions of the granted licence in accordance with the approved EMP. It is recommended that the Proponent continues to adhere to all environmental legislation and company standards to ensure that best practical environmental protection continues as the project progresses. Further recommendation includes annual operational health, safety and environmental reports to be updated throughout operations by an independent environmental practitioner.

APPENDIX A –ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX B – CURRENT ENVIRONMENTAL CLEARANCE CERTIFICATE

ECC – 01219 Serial: RiTHcF1219

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

Camelthorn Business Ventures Number Two (Pty) Ltd
P. O. Box 27527, Windhoek

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY

Operations of the 5MW AC photovoltaic plant in Outapi, Omusati Region

MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM
Private Bag 13306
WINDHOEK/ NAMIBIA
16 FEB 2021
ENVIRONMENTAL COMMISSIONER
REPUBLIC OF NAMIBIA

Issued on the date: 2021-02-09
Expires on this date: 2024-02-09

(See conditions printed over leaf)

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Reuse
Recycle
NAMIBIA TRASH BIN DO THE RIGHT THING

This certificate is printed without erasures or alterations

ECC –

CONDITIONS OF APPROVAL

1. This environmental clearance is valid for a period of 3 (three) years, from the date of issue unless withdrawn by this office
2. This certificate does not in any way hold the Ministry of Environment and Tourism accountable for misleading information, nor any adverse effects that may arise from these activities. Instead, full accountability rests with the proponent and its consultants
3. This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project
4. All applicable and required permits are obtained and mitigation measures stipulated in the EMP are applied particularly with respect to management of ecological impacts.
5. Strict compliance with national heritage guidelines and regulations is expected throughout the life-span of the proposed activity, therefore any new archaeological finds must be reported to the National Heritage Council for appropriate handling of such.

APPENDIX C – EMP COMPLIANCE SITE VISIT CHECKLIST (2023)

APPENDIX D – OPERATIONAL HEALTH, SAFETY AND ENVIRONMENTAL REPORTS 2020 - 2022

PROJECT DETAILS

TITLE:	Environmental Assessment for the Construction of a 4.9 MW Photovoltaic Plant, Outapi
AUTHORS:	Mr. Colin P Namene
CLIENT:	Camelthorn Business Ventures (Pty) Ltd
REPORT STATUS:	Final Environmental Management Plan
REPORT DATE:	August 2015

COMPILER:

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Colin P Namene

Environmental Assessment Practitioner

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Appendix A: Generic Method Statement Example

ABBREVIATIONS

ECC	Environmental Clearance Certificate
COA	Conditions of Authorisation
DWAF	Department of Water Affairs and Forestry
EC	Environmental Clearance
ECO	Environmental Control Officer
EAP	Environmental Assessment Practitioner
EMA	Environmental Management Act (No. 7 of 2007)
EMP	Environmental Management Programme
EIA	Environmental Impact Assessment
EO	Environmental Officer
GIS	Geographic information system
I&APs	Interested and Affected Parties
MET: DEA	Ministry of Environment and Tourism: Department of Environmental Affairs
MSDS	Material Safety Data Sheets
TB	Tuberculosis
STD	Sexually Transmitted Diseases
WTW	Water Treatment Works
IFC	International Finance Corporation

1 INTRODUCTION

1.1 PURPOSE OF THIS EMP

This General Environmental Management Plan (EMP) has been compiled for the management of the 4.9 MW Photovoltaic plant to be constructed in Outapi. Best practice is proposed for the generic issues of construction management and supervision. The EMP will also provide specific recommendations and mitigation measures on how to minimise negative impacts and therefore protecting the environment on a social as well as biophysical level.

In terms of the Environmental Assessment Policy of 1994 and the Environmental Management Act No 7 of 2007 (EMA), certain activities have been identified, which could have a substantially detrimental effect on the environment. These listed activities require an Environmental Clearance Certificate (ECC) from the competent environmental authority, i.e. Ministry of Environment and Tourism: Department of Environmental Affairs (MET:DEA), prior to commencing. The following activities identified in the EIA Regulations (**Table 1**) apply to the proposed project:

Table 1: List of triggered activities identified in the EIA Regulations which apply to the proposed project

Activity Description and No(s):	Description of Activity	Activity Triggers
Activity 1 (a) Energy generation, transmission and storage activities	The generation of electricity.	The project involves the generation of electricity.
Activity 1 (b) Energy generation, transmission and storage activities	The transmission and supply of electricity.	The project will include the bulk transfer of electrical energy, from the generating power plant to an electrical substation.
Activity 8.8 Water Resource developments	Construction and other activities in water courses within flood lines.	The subject property consists of low lying areas that accumulate with water during the rainy season.

1.2 PROJECT INFORMATION

Namibia is regarded as a net exporter of electricity, local electricity generation is derived from hydropower, coal and diesel burning power stations; however this is not enough to meet local demand (INCUNFCC, 2002) necessitating the country to source the balance, amounting to more than 60%, from other countries within the Southern African region such as Zambia, South Africa, Zimbabwe and Mozambique; of which South Africa's contribution is dominant at 53% (von Oertzen, 2012).

Despite the current situation, the energy consumption in Namibia follows an upward trajectory because of the unavoidable dependency of national development on the availability, supply, demand and use of energy (Ajayi & Ajayi, 2013).

From 2006 to 2007, citing figures from the Namibian electricity regulator the Electricity Control Board (ECN), Namibia has witnessed an increase from 3,554 million KWh to 3,621 million kWh in the total units of electricity generated. Nampower, the country's power utility, estimates that demand for residential consumption will witness a rise of over 10% in the near-term. The country has already seen a 4% average increase on energy use per year for the period 1997 to 2003; 20% per year for the period 2003 to 2004, and 13% between 2004 and 2005 (UNDP, 2010). The Southern African region as a whole is facing a deficit in generation, implying that Namibia will have to develop, as a matter of urgency, its own capacity to generate electricity (Kapika & Eberhard, 2010).

In an attempt to address this the Government through its relevant agencies, in this case the power utility (Nampower) and the regulator (Electricity Control Board) developed a program called Renewable Energy Feed-in Tariffs (REFITs) along with associated Regulations that would create an environment conducive to mobilising Independent Private Producers (IPPs) and their investors into Namibia's electricity sector (ECB, 2013). Camelthorn Business Ventures (Pty) Ltd. as an IPP is one of the participants in the REFITs Program and intends to **construct a 4.9 MW photovoltaic power plant.** They have identified a portion of land in the town of Outapi to set up the facility.
Camelthorn Business Ventures (Pty) Ltd appointed Africa Planning Forum cc (APF) to undertake the Environmental Assessment (EA) in order to obtain an Environmental Clearance Certificate (ECC) for the above proposed activity in Outapi. The competent authority is the Ministry of Environment and Tourism: Department of Environmental Affairs (MET: DEA).

The process will be undertaken in terms of the Namibian Government Notice No. 30 Environmental Impact Assessment Regulations (herein referred to as EIA Regulations) in terms of Environmental Management Act (No 7 of 2007) (herein referred to as the EMA). The EIA process will investigate if there are any potential significant bio-physical and socio-economic negative impacts associated with the power plant and associated infrastructure and services. The EIA process would also serve to provide an opportunity for the public and key stakeholders to provide comment and participate in the process.

1.3 PROJECT LOCATION

Outapi has become one of the fastest growing towns in terms of development in the northern parts of the country. The town is situated in the Omusati Region in the north central part of Namibia, and is the regional capital. The 10 hectare of land identified by the proponent is located on the south-eastern part of Outapi Town within the proposed Outapi Extension 17, and is adjacent to the proposed Outapi Extensions 11 and 16. The site is currently zoned undetermined. See **Figure 1** for the locality map of Outapi **& Figure 2** for the locality of the plant.

Figure 1: Locality map of Outapi

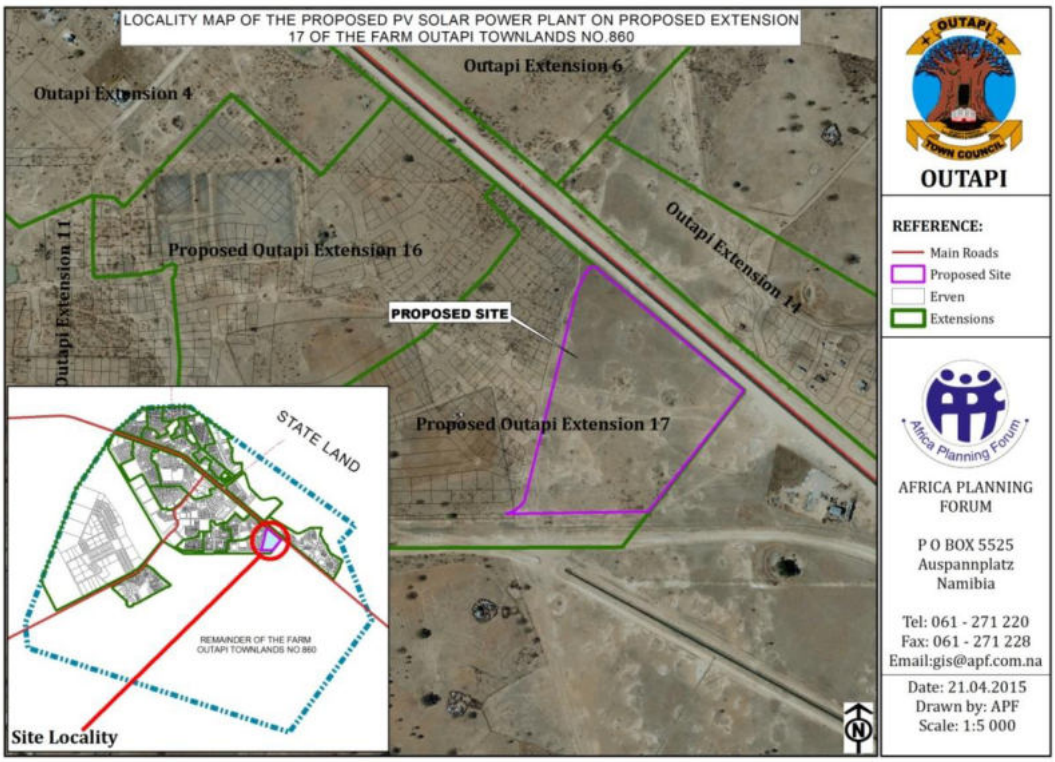

Figure 2: Locality Map of the Proposed PV Power Plant in Outapi

The status of Outapi as the regional capital in the Omusati Region has been beneficial to Outapi, as it brought with it an influx of the decentralized government ministries and their officials subsequently increasing the demand for land and housing. The Outapi Town Council has responded positively to this demand by availing serviced land, which in turn attracted developers and financial institutions to the town. An increase in the number of locally based businesses was observed that offered consumer goods normally available in Oshakati at the expense of long travel distances. Money, mainly from government officials, is able to circulate longer in the local economy to the advantage of businesses and local employment opportunities. With the tarring of the road from Outapi to Tsandi and Okahao, an increased market from the region will make use of goods and services sourced from Okahao because of the shorter distance in comparison to Oshakati (UTN, 2005). The above has contributed to Camelthorn Business Ventures' choosing Outapi as a viable investment destination.

1.4 TERMS OF REFERENCE AND SCOPE OF PROJECT

The scope of this project is limited to obtaining an Environmental Clearance Certificate for the construction of a 4.9 MW photovoltaic power plant in Outapi. The proposed project activity is described in more detail in Chapter 3 of the Environmental Assessment Report. The FEAR comprises of the following information:

- An overview of the legal requirements which have necessitated the assessment, as well as a review of other current or pending legal requirements that have a bearing on the activity;
- A description of the proposed project, including need and desirability, and the proposed activities that form the subject of the EIA process, i.e. details of the processes and infrastructure envisaged and the identification of potential alternative project actions;
- A detailed description of the bio-physical an socio-economic environment;
- A description of the possible bio-physical and socio-economic impacts that have been identified to date, i.e. during the Project Initiation and EA Phase, and the means whereby such impacts will be subjected to methodological evaluation, their significance, mitigation potential and possible acceptance are concerned;
- A detailed description of the Public Participation Process (PPP) that underpins the current EIA process;
- An identification of alternatives, a description of aspects and the assessment thereof;
- Impact assessment and mitigation measures proposed by specialist reports; and
- An Environmental Management Plan (EMP), which would include the recommended mitigation measures required to reduce the significance of impacts identified in the EIA process.

1.5 RESPONSIBLE PARTIES

Camelthorn Business Venture as the proponent will be responsible for the implementation of this EMP during the various phases of the project. The following people are also required during construction in order to implement various environmental management related issues.

1.5.1 Environmental Control Officer

Prior to the commencement of construction a suitably qualified and experienced Environmental Control Officer (ECO) shall be appointed by the Contractor / Proponent to ensure that the

mitigation and rehabilitation measures are implemented and to ensure compliance with the provisions of the EMP.

1.5.1.1 Roles and responsibilities

The role of the ECO is to oversee and monitor compliance with and implementation of the construction phase EMP. The ECO is therefore responsible for the following:

i) Liaison with the community, Camelthorn Business Venture, Outapi Town Council, Engineer and Environmental Authorities;
ii) Monitoring of all the Contractor's activities for compliance with the various environmental requirements contained in this EMP;
iii) Reviewing of the Contractor's Environmental Method Statements as well as ensuring Camelthorn Business Venture's approval thereof;
iv) Ensuring that the requisite remedial action is implemented in the event of non-compliance;
v) Ensuring the proactive and effective implementation and management of environmental protection measures;
vi) Ensuring that a register of public complaints is maintained by the Contractor and that any and all public comments or issues are appropriately reported and addressed;
vii) Routine recording and reporting of environmental activities on a monthly basis;
viii) Recording and reporting of environmental incidents;
ix) Notifying the Environmental Authorities immediately of any events or incidents that may cause significant environmental damage or breach the requirements of the EMP; and
x) Environmental Awareness Training courses to be conducted to the Contractor's entire team of workers.

1.5.1.2 Site Visits and Reporting:

The ECO shall visit the site a minimum of once a month. More frequent visits may be required if the situation requires it. Monthly compliance reports shall be submitted to the Engineer and Camelthorn Business Venture and distributed as desired. The compliance report shall speak to the requirements of the EMP and the project specifications. It is recommended that an Environmental Audit Report be carried out six months after construction has been completed and submitted to the Environmental Authorities and Camelthorn Business Venture.

2 CONSTRUCTION PHASE

2.1 INTRODUCTION

The construction phase EMP is to be **included into all Tender and Contract documentation to ensure that the Contractor is aware of his obligations and is able to price the implementation of these requirements accordingly**. Failure to comply with these requirements could result in penalties or otherwise hold the Contractor accountable for any damages arising from irresponsible behavior or non-compliance with the requirements. This ensures that identified environmental issues receive adequate attention during the planning and construction phase.

2.2 SCOPE

The general principles contained within the EMP shall apply to all construction activities. All construction activities shall observe any relevant environmental legislation and in so doing shall be undertaken in such a manner as to minimise impacts on the natural and social environment.

2.3 GENERAL

Camelthorn Business Venture, as the proponent, is responsible for:

- Ensuring that the objectives of the EMP are given effect;
- Ensuring that all environmental impacts are managed in accordance with the EMP;
- Ensuring that all monitoring and compliance auditing occurs in line with the EMP;
- Ensuring that the environment is rehabilitated as far as practicable to its natural state or existing land use practices;
- Any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of activities both in and outside the site boundaries.

With regard to the above, the Contractor shall conduct his activities so as to cause the least possible disturbance to the existing amenities, whether natural or man-made, in accordance with all the current statutory requirements. Special care shall be taken by the Contractor to prevent irreversible damage to the environment. The Contractor shall take adequate steps to educate all members of his workforce as well as his supervisory staff on the relevant environmental laws and protection requirements. The Contractor shall supplement these steps with prominently displayed notices and signs in strategic locations to remind personnel of environmental obligations.

The Contractor shall construct and/or implement all the necessary environmental protection measures in each area before any construction work may proceed. The Engineer / ECO may suspend the Works at any time should the Contractor, in the Engineer / ECO's opinion, fail to implement, operate or maintain any of the environmental protection measures adequately. The costs of such suspension shall be to the Contractor's account.

2.4 PLANNING AND DESIGN

The Design Engineers must take cognisance of the outcomes and recommendations of the EMP. Camelthorn Business Venture and the Engineer must ensure that this EMP is included in the briefing documentation to the Contractor (to be appointed). The Engineer must advise the Contractor to familiarise himself with the EMP and ensure that adequate resources are made available to implement the requirements of the EMP.

2.5 ENVIRONMENTAL AWARENESS

2.5.1 Environmental, Health and Safety Induction Course

The Contractor is responsible for informing employees and Sub-Contractors of their environmental obligations in terms of the EMP and for ensuring that employees are adequately experienced and properly trained in order to execute the works in a manner that will minimise environmental impacts.

The Contractor shall ensure that all his employees, and those of his Sub-Contractors, attend an Environmental, Health and Safety Induction Course. This course shall be structured to ensure that attendees:

- Acquire a basic understanding of the key environmental features on the site and its immediate environs;
- Become familiar with the environmental controls contained in the EMP;
- Are informed that natural features (e.g. rock formations) are not defaced or marked for survey or other purposes unless agreed beforehand with the engineer and natural water sources are not allowed to be used for the purposes of swimming, personal washing, and the washing of machinery or clothes;
- Are made aware of the need to conserve water and minimise waste;
- Receive pertinent, written instructions regarding compliance with the relevant environmental management requirements (viz. typical environmental “do’s” and “don’ts”);
- Are made aware of any other environmental matters as deemed necessary by the Engineer / ECO.
- Receive detailed training in site health and safety requirements, emergency responses and site evacuation procedures in terms of the Contractor’s health and safety plan;
- Are given information where free condoms, provided by the contractor, are available;
- Are provided with information and are given the opportunity to access antiretroviral medication;
- Are made aware that prostitution shall not be tolerated in the construction camp;
- Are aware that a copy of the EMP is readily available on site and that all site staff are aware of the location and have access to the document;
- Are aware of the requirements of any approved Method Statements that have bearing on their activities, and where necessary, any specialised training required to ensure compliance with the approved Method Statements has been provided; and
- Are informed that employee information posters, outlining the environmental “do’s” and “don’ts” (as per the environmental awareness training course) will be placed at prominent locations throughout the site.

The Environmental, Health, and Safety Induction Course should be conducted by the ECO and Contractor’s Health and Safety officer, who shall provide the site staff with an appreciation of the project's environmental requirements, and how they are to be implemented. All new staff coming onto site after the commencement of construction activities must also attend the Environmental, Health and Safety Induction Course, and refresher courses should be undertaken on a quarterly basis. A detailed record of all training sessions, including a list of attendees must be compiled by the Contractor and submitted to the Project Manager on a regular basis.

The initial Environmental, Health, and Safety Induction Course shall be held within 14 days from the site mobilisation date, and subsequent courses shall be arranged for all new employees arriving after the initial training course.

The Contractor shall provide a suitable venue with necessary facilities and ensure that all employees attend the environmental, health and safety induction course. The course shall be held in the morning during normal working hours. No more than 30 people shall attend each course and the Contractor shall allow for sufficient sessions to train all personnel. The Contractor shall provide proof of attendance by all of his employees in the form of a signed attendance register.

2.5.2 Toolbox Talks

Environmental, health and safety issues specific to each area of the works, shall form part of the daily toolbox talks in each area. The foreman responsible will provide feedback to his staff on their day-to-day environmental performance and address issues requiring attention and specific actions required. A synopsis of the topics discussed at each area shall be recorded on a register and submitted to the ECO on regular (typically weekly) basis. Environmental matters shall be dealt with in toolbox talks on a regular basis (typically at least once a week).

2.5.3 Safety of the Public

The Contractor shall take all reasonable measures to ensure the safety of people in the surrounding area. Where the public could be exposed to danger by any of the Works or site activities, the Contractor shall provide flagmen, barriers, and/or warning signs in English, all to the approval of the Engineer / ECO.

All unattended open excavations shall be adequately demarcated (fencing shall consist of a minimum of three strands of wire wrapped with danger tape). Adequate protective measures must be implemented to prevent unauthorized access to the Working Area. No firearms shall be permitted on site without the prior approval of the Project Manager.

The Contractor shall implement appropriate measures to limit any adverse social impacts associated with the establishment of a construction camp and/or the accommodation of a construction workforce on the local communities. The following mitigation and management measures are prescribed in this regard:

- Measures to prevent crime:
    - Construction workers should be clearly identifiable by wearing proper construction uniforms displaying the logo of the construction company. Construction workers could also be issued with identification tags in order to gain access to the construction site and campsite area.
    - The Contractor should establish clear rules and regulations for access to the construction site and offices to control loitering. Consultation should occur with the local Outapi Namibian Police branch to establish standard operating procedures for the control and/or removal of loiterers.

2.5.4 Human Resource and Opportunities Management

Job creation, inward migration of workers and accommodation of a workforce within a small community have the potential to result in significant social impacts. Camelthorn Business Venture and the Contractor must approach human resource management in a careful, cooperative and

considered fashion so as to enhance the positive impacts, whilst minimising negative impacts associated with construction projects.

Given that the Outapi community will be most affected by the project, it is consistent with international best-practice standards (such as the Performance Standards of the IFC) that they should be given special consideration in terms of the benefits arising from the project. In order to enhance the benefits of employment creation for these communities, it is recommended that the following measures be implemented:

- The Contractor shall establish a formal and organised recruitment process.
- The Contractor should be encouraged to employ local labour (i.e. from Outapi) where possible.
- The Contractor should be encouraged to recruit Namibian labourers.
- Tender criteria should require training and skills development of the workforce by the Contractor.
- Recruiting by the Contractor must be conducted through a central office and no on-site hiring should be allowed.
- The Contractor shall inform job seekers that they are hired for a contract period only.

2.5.5 Working Times

The Contractor shall restrict construction activities to the hours of 06h30 - 17h00 during summer and 07h00 - 17h00 during winter on Mondays to Saturdays and no work will be permitted on Sundays or public holidays.

2.6 METHOD STATEMENTS

Any Method Statements required by the Engineer / ECO or called for by the Project Specification shall be produced within such reasonable time as specified by the Engineer / ECO or as stipulated in the Project Specification. Please refer to **Appendix A** for a generic example of a method statement. The Contractor shall not commence the activity until the Method Statement has been approved, except in the case of emergency activities. The Contractor shall allow the Engineer / ECO a one week period for the review and approval of the Method Statement. Such approval shall not be unreasonably withheld.

The Engineer / ECO may require changes to a Method Statement if the proposal does not comply with the Specification or if, in the reasonable opinion of the Engineer / ECO, the proposal may result in, or carries a greater risk of, damage to the environment in excess of that which can be tolerated.

Approved Method Statements shall be readily available on the site and shall be communicated to all relevant personnel. The Contractor shall carry out the works in accordance with the approved Method Statement. Approval of the Method Statement shall not absolve the Contractor from any of his obligations or responsibilities in terms of the Contract or any other law.

Method Statements that shall be provided by the Contractor 14 days prior to the mobilisation on site include:

1. Mobilisation plan, covering:

a. The location and layout of all offices, storage containers, gates and fences, fuel storage areas and protection bunds, material lay-down areas, ablution facilities, carpentry areas, hazardous chemical storage facilities, wash bays, workshops and Works service and maintenance areas, oil separators and grease traps, storm-water layout, first aid facilities, recess, training, eating and meeting areas, central waste storage areas, access / haul roads and any other facilities associated with the Contractor's yard.
b. Security and access control to the site.
c. The design and location of all waste storage facilities, in particular the central waste storage area.
d. The central waste storage area shall include a separate, weather proof, water-tight vessel for the disposal of hazardous waste and contaminated soil recovered during spills.
e. The system of collection and disposal of wastes, including the name and location of the point of final disposal, to an appropriately landfill site.
f. Initiatives for the control and recovery of litter on and around the Site and Contractor's yard.
g. Fuels and fuel spills: Methods of refuelling vehicles and details of methods for fuel spills and clean-up operations.
h. Sedimentation and Erosion Control: Sedimentation and erosion control of bulk earthworks and the management of sediment into rivers.
i. Storm water management: Provisions to manage storm water during the construction phase, especially during phases involving bulk earthworks as well as at the culvert where the pipeline will go through underneath the road.

2. Operational and rehabilitation plan, covering:
    a. Procedure for the clearing of vegetation, grubbing of the works and handling, stockpiling and disposal of the debris arising from the grubbing operations;
    b. Measures to be used to protect the topsoil stockpiles against contamination or erosion;
    c. Measures used to protect cleared areas from erosion, windblown dust and suspended solid contaminated runoff;
    d. Method to be used for backfilling, shaping, spacing and shape of erosion protection beams and the redistribution of stockpiled topsoil (care to be taken that topsoil is not over diluted with sub-soil); and
    e. Seeding and aftercare of planted materials and control of alien invasive. It is encouraged that concurrent rehabilitation practices are used where possible.

2.7 ENVIRONMENTAL CONSIDERATIONS PERTAINING TO SITE LAYOUT

2.7.1 Employee Eating and Recess Areas

The Contractor shall identify a suitable area, which is shaded if possible and away from construction noise and dust, where employees can eat and take work recesses in relative comfort. The eating areas shall be provided with scavenger proof rubbish bins which are to be emptied into the central waste storage vessel daily. Potable water and other sanitary conveniences shall also be located within reasonable range of the designated eating area. The Contractor shall prevent his employees from eating or recessing anywhere else but in the designated eating area.

2.7.2 Ablution Facilities

Temporary / portable toilets shall be supplied by the Contractor for the workers at a maximum ratio of 1 toilet per 15 workers and be within walking distance of the work area. The toilets shall be placed at appropriate locations to the approval of the Engineer / ECO. The toilets shall be located within the construction camp, but not closer than 30m to water resources (e.g. water bodies or streams). Toilets shall not be located in depressed areas where they may be subject to flooding. Toilets shall be kept in a good state of repair and shall be serviced at intervals sufficient to ensure that they are kept in clean and sanitary condition.

The Contractor shall ensure that no spillage occurs when the toilets are cleaned or emptied and that the contents are removed from site. Discharge of waste from toilets into the environment is prohibited. Each toilet shall be stocked with toilet paper at all times. All toilets shall be secured to the ground to ensure that they do not overturn during high winds or for any other reason. Washing whether of the person or of personal effects and acts of excretion and urination are strictly prohibited other than at the facilities provided.

2.7.3 Site Division and Site Demarcation

The Contractor shall restrict all his activities, materials, equipment and personnel to the designated Site. The Contractor shall erect and maintain permanent and/or temporary fences of the type and in the locations directed by the Engineer / ECO. Such fences shall, unless otherwise directed by the Engineer / ECO, be erected before undertaking other designated activities within the fenced-off area. Fences and gates shall be maintained throughout the Contract. All areas outside of the demarcated site shall be deemed as “no-go” areas for all construction personnel and equipment.

The Contractor shall ensure that the clearance of vegetation is restricted only to that required to facilitate the execution of the works. Non-conformances related to over-clearance of vegetation shall be regarded as a serious offence and dealt with to the full extent of these specifications. A preventative approach to rehabilitation is emphasised, site clearance shall occur in a planned manner, over or accidental clearance will be prevented.

The Contractor shall peg the boundaries for the proposed works before commencing with any clearing operations. These demarcations shall be used by the clearing teams as a guide to control and prevent accidental over clearance of vegetation. No clearing of vegetation will commence until the alignment boundaries is finalised and commencement authorised by the ECO / Engineer.

2.7.4 Access, Traffic and Haul Roads

The Contractor shall be held responsible for the control of all project related traffic, including that of his suppliers, in ensuring that vehicles associated with the project remain on designated routes and within the designated working times. Construction traffic shall be controlled to ensure minimal disruption to normal road users. All existing access roads that may be affected during construction shall be kept open and in a good state of repair, where this is not possible, unobstructed and safe alternative access routes through the works must be provided. The following mitigation measures are further proposed to limit the impact of traffic in the area:

- The absolute minimum new roads / tracks should be established. Vehicles should stay on existing roads / tracks as far as possible.

- Should new roads / tracks need to be established, a plan should be provided for the road before construction commences.
- New roads / tracks should not be constructed if the quality of existing roads deteriorates. Where possible, repair or upgrade existing roads / tracks.
- Road construction methods should ensure good road surfaces to preclude vehicles driving off road to find smoother surfaces with less corrugations or potholes.
- The area to be cleared for road construction should be as small as possible.
- Road surface should be regularly assessed and upgraded where appropriate.
- No off-road driving is allowed except where the clearing route for service infrastructure is planned.
- No operator will operate any equipment when he is under the influence of alcohol.
- Make sure all vehicles are roadworthy. Repair faulty brakes, exhausts etc. immediately/
- Good driving and adherence to safety rules at all times.
- Drivers must keep their headlights on when driving on gravel roads.
- Drivers must have the correct licence for the vehicles they are driving.
- Roads which were constructed for the purposes of this project and will not be required for further use shall be rehabilitated in accordance with the rehabilitation measures provided in section 2.9.
- Ensure that road junctions have good sightlines.
- Obtain access to the site from the internal road network, and not from the C46 main road.
- Adhere to the speed limit.
- Implement traffic control measures where necessary.
- The following minimum standards for access roads should be followed:
    - Enter and exit roadways and construction areas should be demarcated at the entrances.
    - Erect signage to warn motorists about construction activities and heavy vehicle movement where appropriate.
    - Use 3-point turns and not U-turns and confine turning to the road.
    - Prevent shortcuts between roads.

No new parking bay, haul or access road or passage of any sort shall be opened or be caused to be opened without the prior consent of the Engineer / ECO. Establishing new borrow pits are strictly prohibited. Any contraventions of this clause shall result in penalisation.

2.7.5 Solid Waste Management

The Contractor shall provide sufficient number of rubbish bins with secured lids. Rubbish bins shall always be placed in pairs, to ensure that one is always present while the other is being emptied. As a minimum, rubbish bins shall be located at every point of entry / exit to the site, any building, work area, ablutions facility or recess area, Areas where rubbish is likely to be generated in higher quantities shall be equipped with an additional rubbish bins according to the activities occurring there and the volume of waste being generated. Area requiring additional rubbish bin will include for example:

- Training and meeting facilities (4);
- Workshops (4);
- Stores (4);
- Canteens and eating areas (4);
- Materials lay down areas;

- Any work areas where outfitting (Electrical, plumbing, mechanical) of structures is occurring (as required);
- Any mobile teams carrying out work away from the main site infrastructure, for example pipe or electrical installation teams, road building and maintenance teams, etc, shall carry a rubbish bin with them at all time and return all waste collected to the central storage area at the end of a day's work; and
- Any other area where an accumulation of litter and rubbish is noted or as instructed by the ECO.

No waste materials, including domestic, organic or construction wastes shall be burnt, dumped or buried on the site. Bins shall be emptied daily or as required. The waste may be stored temporarily on site in a central waste area that is weather and scavenger proof, as approved by the Engineer / ECO. The Contractor shall, at his own cost, make available the time and resources required in recovering any litter or other wastes that have accumulated or have been dispersed as a result of his activities on the site. The ECO shall monitor this strictly and institute strict penalties in the event of non-compliances.

The central waste storage vessel shall be emptied weekly or as necessary. All solid waste shall be disposed of at the existing landfill site in Outapi. A copy of the waste disposal certificates shall be submitted to the Engineer / ECO for record purposes.

2.7.6 Fuel and Oil

The Contractor shall ensure that all liquid fuels are stored in tanks or mobile bowsers with lids that are kept firmly shut. The Contractor shall ensure that there is adequate fire-fighting equipment at the fuel storage areas. The tanks or bowsers shall be situated on a smooth impermeable surface (concrete slab or 250 micron plastic sheeting covered with at least 50mm of sand) with an earth bund. The impermeable lining shall extend to the crest of the bund. The volume of the bunded area shall be 120% the volume of the combined tank volumes stored therein. Provision shall be made for refuelling at the fuel storage area, by protecting the soil with an impermeable surface (similar to that used for the storage area itself).

The Contractor shall prevent unauthorised access to the fuel storage area. No smoking shall be permitted in the vicinity of the fuel storage area. The Contractor shall ensure that there are adequate fire-fighting provisions located at the fuel storage area.

Should a mobile fuel bowser be used, all refuelling shall occur with appropriate measures in place to prevent spillages; these may include the use of drip trays, funnels, non-drip dispensing nozzles, and any other similar device. Regardless of the preventative measures in place, all mobile fuel bowsers shall carry a spill-kit that is adequately sized to contain at least a 200 litre spill, at all times.

2.7.7 Equipment Maintenance and Storage

All vehicles and equipment shall be kept in good working order and shall be operated by designated and competent operators. Leaking or damaged equipment shall be repaired immediately or removed from the Site. Where emergency, *in situ* maintenance operations are required, the Contractor shall ensure that the soil or vegetation does not become contaminated. Drip trays shall be provided in construction areas for stationary and parked plant as well as for the

emergency servicing of vehicles. Drip trays shall be inspected and emptied daily, or as required. The contents of the drip trays shall be disposed of at an appropriately authorised facility.

The washing of equipment shall be restricted to urgent or preventative maintenance requirements only during which the use of detergents for washing shall be restricted to low phosphate and nitrate containing, low foaming type detergents.

The Contractor shall ensure that oil and lubricant containers are stored in an area where the ground has been protected. The containers shall be inspected regularly to ensure that no leakage occurs. When oil / lubricants are dispensed, the proper dispensing equipment shall be used, and the storage container shall not be tipped in order to dispense the oil / lubricant. The dispensing mechanism of the oil / lubricant storage container shall be stored in a waterproof container when not in use. The Contractor shall take all reasonable precautions to prevent accidental and incidental spillage during the use of oils.

In the event of oil / lubricant or other hazardous spill, the source of the spillage shall be isolated, and the spillage contained. The Contractor shall clean up the spill by removing the contaminated soil to the hazardous waste vessel and the application of absorbent material to the affected area. Treatment and remediation of the spill area shall be undertaken to the reasonable satisfaction of the Engineer / ECO.

2.7.8 Stockpiling and Stockpile Areas

Plant and materials shall be stored within the demarcated construction camp or batching areas. Where this is not feasible, the Engineer / ECO will identify additional sites for stockpiling within the Working Area. Where possible, stockpiled materials shall be stored off the ground on scaffolding and care shall be taken to minimise disturbance to the vegetation and topsoil.

Soil, sand, and gravel stockpiles shall be convex in shape and shall be located so as to cause minimal disturbance. Stockpiles shall be so placed as to occupy the minimum width compatible with the natural angle of repose of the material, and measures shall be taken to prevent the material from being spread over too wide a surface. The Contractor shall ensure that all stockpiles do not result in the damming of water or run off, or are themselves washed away. Stockpiles shall be placed to not obstructed or pollute any storm water or drainage paths.

2.7.9 Materials

2.7.9.1 Materials Handling, Use and Storage

The Contractor shall ensue that any delivery drivers are informed of all procedures and restrictions, including “no-go” areas and designated haul routes.

All material shall be stored within the designated site boundaries and all material stockpiles shall be located no less than 20m from any water resource. The Contractor shall ensure that all material lay-down areas, workshops and stores, including temporary lay-down areas within the Works, are kept in a neat and orderly fashion on a daily interval, and to the satisfaction of the Engineer / ECO. The Contractor shall set aside the time and resources required to remedy any contraventions of this clause at his own expense.

Materials shall be appropriately secured and covered to ensure safe passage between destinations. The Contractor shall be responsible for any clean-up resulting from the failure by his employees or suppliers to properly secure transported materials.

2.7.9.2 Hazardous Substances

Hazardous chemical substances used during construction shall be stored in secondary containers. The relevant Material Safety Data Sheets (MSDS) shall be available on site. Procedures detailed in the MSDSs shall be followed in the event of an emergency situation. Potentially hazardous substances shall be stored, handled and disposed of as prescribed by the Engineer / ECO.

The Contractor shall provide a separate weather-proof, impervious vessel at the central waste storage area for the temporary storage of hazardous, potentially hazardous and contaminated materials. Waste from this vessel shall be disposed of at a landfill site that is registered to receive such waste. A copy of the Certificate of Disposal issued by the landfill shall be submitted to the Engineer / ECO after every deposit.

2.7.10 Cement and Concrete Batching

The batching of concrete shall take place on a smooth, impermeable surface (plastic) and shall be enclosed with a bund and sloped toward a sump to contain any spillages. Concrete batching shall take place at least 20m away from any water resource to avoid contaminated water and/or sediment entering the resource. All waste water resulting from batching of concrete shall be contained and disposed of appropriately and shall not be discharged into the environment unless treated to acceptable standard, as determined by the Engineer / ECO. Where concrete trucks are used, the Contractor shall ensure that dumping of the drum-wash does not occur directly onto the ground. If needed, facilities for the handling of the concrete contaminated wash-water shall be established to the satisfaction of the Engineer / ECO. Any spillages of concrete or concrete-truck-drum-wash-water shall be cleaned-up immediately and disposed of through the solid waste disposal system.

The Contractor shall take all reasonable measures to prevent the spillage of cement / concrete during batching and construction operations. During pouring, the soil surface shall be protected using plastic and all visible remains of concrete shall be physically removed on completion of the pour and disposed of as part of the solid waste disposal system. Empty cement bags shall be collected continuously and stored in temporary weatherproof containers, where they are protected from dispersion by wind and shall be disposed of regularly via the solid waste disposal system.

2.7.11 Trenching (only where applicable)

Trenches where envisaged shall be demarcated appropriately and securely and regularly monitored during operations to ensure that pedestrian (and vehicular) access to these areas is strictly prohibited. Where appropriate, sign boards, alerting pedestrians and road users to the potential dangers presented by the construction activities, shall be erected. The Contractor shall ensure that the time a trench is left exposed is kept to a minimum, and that open trenches are inspected on a daily basis for animals which may have fallen or become trapped.

2.7.12 Fire Control

Fires are only permitted in designated area and shall not be left unattended. Cooking places shall be located at a safe distance from fuel / hazardous materials storage area and vehicle parking

areas. All grass and bushes shall be removed around fireplaces. Fire extinguishers shall be readily available in the construction camp. Any fires that occur outside of designated areas shall be reported to the Engineer / ECO immediately. Employees shall be made aware that the collection and removal of firewood is prohibited, except where indicated by the contractor as clearing takes place. The Contractor shall either provide firewood or to limit the use thereof; provide gas or fuel efficient stoves. Smoking shall not be permitted in those areas where there is a fire hazard. Burning of waste for disposal purposes is not permitted.

The Contractor shall be responsible for ensuring that immediate and appropriate actions are taken in the event of a fire and shall ensure that employees are aware of the procedures to be followed. The Contractor shall ensure that there is at least one fire extinguisher at the entrance to the site and at the recess area. A fire extinguisher shall be present whenever undertaking any form of hot work, i.e. welding, gas cutting, angle grinding, etc. All transport, earth moving equipment, and materials handling equipment on the site shall be fitted with fire extinguishers.

All fire extinguishers shall be serviced at the specified intervals and all other fire-fighting equipment shall be maintained in a good state of repair.

2.7.13 Emergency Procedures

The Contractor shall ensure that his employees are aware of the procedure to be followed for dealing with leaks and spills, which shall include notifying the Engineer / ECO. The Contractor shall ensure that the necessary materials and equipment for dealing with leaks and spills are available on Site at all times. Treatment and remediation of spills shall be done to the satisfaction of the Engineer / ECO.

In the event of a hydrocarbon spill, the source of the spillage shall be isolated, and the spillage contained. The affected areas shall be cordoned off and secured. The Contractor shall ensure that there is always sufficient supply of absorbent material on Site to absorb / breakdown or encapsulate at least a 200ℓ liquid hydrocarbon spill. Any soil contaminated by such a spill must be removed and disposed of at an appropriately registered waste site.

Emergency equipment including spill kits and fire extinguishers shall be positioned at accessible locations near to areas or facilities where such emergencies may arise.

2.7.14 Erosion, Water Quality, and Storm Water Control

The Contractor shall take all reasonable steps to prevent or remediate damage to the environment resulting from the Works in the form of erosion and sedimentation. The Contractor shall immediately remedy any situation that is or has the potential to result in soil erosion, water pollution and sedimentation from the works as a result of storm water flows. A preventative approach must be adopted whereby the extent of clearance and disturbance is limited to those areas required to complete the Works. If required, the Contractor shall establish necessary storm water control mechanisms in agreement with the engineer, to effectively control the movement of water onto, through and off the construction site.

Storm water should be managed appropriately at the culvert crossing where the pipeline are planned to go through underneath the road, so that blockage does not occur.

The Contractor shall establish, in agreement with the Engineer / ECO, a suitable mechanism, where necessary, for containment and treatment of contaminated water emanating from the Works or associated activities, i.e. settlement or sedimentation ponds / oil separators. Should dewatering of the pipe trench be required, then a method statement detailing how this will be done shall be compiled and submitted for the Engineer / ECO's approval, before commencement. Consideration for erosion at discharge points is to be effectively dealt with. The Plan for the control of large volumes of water associated with pipe pressure testing must be undertaken in a manner that does not pose a risk of soil erosion on slopes.

2.8 PROTECTION OF NATURAL FEATURES AND HERITAGE RESOURCES

2.8.1 Protection of Freshwater Ecosystems

Heavy construction vehicles should be kept out of the seasonal and ephemeral drainage channels and the movement of construction vehicles should be limited where possible to the existing roads / tracks. Contaminated runoff from the construction site should be prevented from entering the water courses as far as possible. Where pipelines cross streams, they should do so in a manner that does not impeded or divert the flow in the channels.

The following mitigation measures are proposed for the protection of watercourses:

- Heavy construction vehicles should be kept out of the seasonal and ephemeral stream channels and the movement of construction vehicles should be limited where possible to the existing roads.
- Site equipment should be refuelled in paved areas with a collection point in case of any spillage
- Ensure regular inspections and maintenance of equipment.
- Where pipelines cross streams, they should do so in a manner that does not impeded or divert the flow in the channels.
- Contaminated runoff from the construction site should be prevented from entering water bodies as far as possible.
- Ensure that surface water accumulating on-site are channelled and captured through a proper storm water management system to be treated in an appropriate manner before disposal into the environment.
- Re-use of treated waste water should be considered wherever possible to reduce the consumption of potable water.
- Engage the Outapi Town Council to ensure culverts in the vicinity are able to manage the flow of water during rain events.
- Avoid the use of herbicides in the area due to the many tributaries draining the ephemeral drainage lines in the area.
- Avoid development in and destruction of the drainage lines throughout the area.
- All materials on the construction site should be properly stored.
- Disposal of waste from the sites should be properly managed.
- Construction workers should be given ablution facilities at the construction sites that are located at least 30m away from the river system and regularly serviced.

2.8.2 Protection of Natural Systems

The Contractor shall ensure that the disturbance of vegetation and faunal communities and their habitats is kept to a minimum. The following mitigation and management measures are prescribed in this regard:

- The Contractor shall ensure that the disturbance of vegetation is kept to a minimum.
- The Contractor shall ensure that the heavy vehicle operators are clearly instructed and are informed about the objectives of the EMP.
- Vegetation should only be removed where it is absolutely necessary.
- Do not clear the entire development site, but rather keep the few individual clumps of trees/shrubs not directly affecting the developments as part of the landscaping especially important for shade in the hot climate.
- Identify species to avoid (i.e. protected species) beforehand and mark (e.g. red/white tape) adequately so that contractors & construction vehicles can easily see and avoid these specimens.
- Prevent the use of herbicides in the area due to the many tributaries draining the ephemeral drainage lines / water bodies in the area.
- Prevent the introduction of potentially invasive alien ornamental plant species such as; Lantana, Opuntia, Prosopis, Tecoma, etc.; as part of the landscaping as these species could infestate the water bodies further over time.
- Prevent development in and destruction of the drainage lines throughout the area.
- Employees who poach fauna and/or flora shall be handed to the authorities for prosecution.
- Employees who set traps shall be handed to the authorities for prosecution.
- Employees found guilty or even suspected to be guilty of poaching or setting traps shall not be allowed to continue with work on this project and shall be immediately removed from the construction team.
- Prevent contractors from collecting wood, veld food, etc. during the construction phase.
- Show overall environmental commitment by adapting a minimalistic damage approach during the construction phase.
- Inform construction contractors/workers regarding the above mentioned issues prior to development and monitor for compliance thereof throughout
- Recommend the planting of local indigenous species of flora as part of the landscaping as these species would require less maintenance than exotic species *(Cunningham, 2013).*

2.8.3 Protection of Archaeological Sites

The proposed development is deemed to result in a ***Very-Low*** to ***Negligible (negative)*** impact on the cultural or heritage resources due to the area already being highly affected by human interference. The project management should however be made aware of the provisions of the National Heritage Act regarding the prompt reporting of archaeological finds. In the event of such finds, the project management or contractors should contact the National Heritage Council of Namibia immediately.

All earthworks equipment operators shall be informed to cease operating immediately if any artefact is unearthed and to report the finding immediately to the Engineer / ECO and Camelthorn Business venture, who in turn shall notify the National Heritage Council. The Contractor shall take reasonable measures to protect any such find against further damage until its value can be properly assessed. Work in the immediate vicinity of such a find shall also be discontinued until the Engineer / ECO, and the National Heritage Council issues a clearance to recommence.

2.9 EXITING AND REHABILITATION

The Contractor shall, on completion of the Contract, ensure that all materials, temporary structures, temporary fences, plant, equipment and waste are completely removed from the Site.

Rehabilitation operations and re-vegetation of all disturbed areas shall commence as soon as possible and even run concurrently where appropriate.

For the purposes of this EMP, the landscaping and rehabilitation of disturbed areas shall entail the clearing, shaping, trimming, and scarification of the area, replacement of stockpiled topsoil where relevant by randomly distributed stone and gravel surface and spraying down with water.

2.9.1.1 Timing of Landscaping and Rehabilitation

The Contractor shall programme for the landscaping and rehabilitation of disturbed areas to occur as soon as practically possible following the cessation of the work in a specific area. In this regard, the Contractor's Works Programme shall clearly indicate how rehabilitation will be executed per phase, upon the completion of the works within a specific area. The period between the cessation of activities associated with the construction of a particular infrastructural component and the onset of landscaping and rehabilitation for the area affected by these activities shall not exceed 1 month (30 days). Once an area has undergone rehabilitation it shall be deemed a "no-go" area and protected accordingly against further or repetitive disturbance.

2.9.1.2 Shaping and Trimming

All slopes which do not form part of the Permanent Works shall be graded so that no slope exceeds a maximum gradient of 1:3 or as otherwise directed by the Engineer. Contour drains may be provided to control erosion where required by the Engineer. Excavation and fills shall be formed in such a manner that the final profile shall appear as a natural extension to the adjacent, undisturbed ground profiles. Trimming shall consist of bringing the existing or previously shaped ground to a smoothly flowing surface with the final levels generally following the original surface and tying in with adjacent undisturbed areas as directed by the Engineer / ECO.

2.9.1.3 Scarifying and Ripping

Prior to the application of stone and gravel, areas stripped during clearance shall be scarified by hand, plough or a mechanical ripper to a depth of approximately 150mm to break down soil clods. Soil which has become compacted and has become too hard to scarify, shall be mechanically ripped to a depth at least 250mm prior to replacement of stone and gravel. No areas of compaction shall remain undisturbed after ripping, subject to the approval of the Engineer / ECO.

2.9.1.4 Replacement of Soil, Stone and Gravel

Following scarification or ripping, and replacement of soil, stone and gravel removed during site clearance shall be replaced in a random pattern or similar to that seen in adjacent, undisturbed areas, subject to the approval of the Engineer / ECO.

2.10 MITIGATION MEASURES FOR CONSTRUCTION PHASE IMPACTS ON THE BIOPHYSICAL ENVIRONMENT

2.10.1 Flora Impacts

a) Mitigation Measures

- Prevent contractors from collecting wood, veld food, etc. during the construction phase.
- Do not clear the entire development site, but rather keep the few individuals trees/shrubs not directly affecting the developments as part of the landscaping.

- Recommend the planting of local indigenous species of flora to replace any tree or shrubs that are removed.

2.10.2 Vertebrate Fauna Impacts

b) Mitigation Measures

- Prevent contractors from collecting veld food such as amphibians, migrating birds, etc. during the construction phase.
- Fencing should be such that it allows for smaller animals to enter and move freely into and out of the site, thus enabling gene flow where possible and practical.
- Placing the transmission line underground as opposed to overhead.
- Maintain the ground layer of grass and shrubs within parts of the plant.

2.10.3 Surface Water Impacts

a) Mitigation Measures

- It is recommended that construction takes place outside of the rainy season in order to limit flooding on site and surface water pollution.
- No dumping of waste products of any kind in or in close proximity to the surface water bodies.
- Heavy construction vehicles should be kept out of the surface water bodies and the movement of construction vehicles should be limited where possible to the existing roads and tracks.
- Ensure that oil/ fuel spillages from construction vehicles and machinery are minimised and that where these occur, that they are appropriately dealt with.
- Drip trays must be placed underneath construction vehicles when not in use to contain all oil that might be leaking from these vehicles.
- Contaminated runoff from the construction sites should be prevented from entering the surface water bodies.
- All materials on the construction site should be properly stored.
- Disposal of waste from the sites should be properly managed and taken to Outapi landfill site.
- Construction workers should be given ablution facilities at the construction sites that are located at least 30 m away from any surface water bodies and regularly serviced.
- Washing of personnel or any equipment should not be allowed on site. Should it be necessary to wash construction equipment these should be done at an area properly suited and prepared to receive and contain polluted waters.

2.10.4 Ground Water Impacts

a) Mitigation Measures

- Ensure that oil/ fuel spillages from construction vehicles and machinery are minimised and that where these occur, that they are appropriately dealt with.
- Drip trays must be placed underneath construction vehicles when not in use to contain all oil that might be leaking from these vehicles.
- Contaminated runoff from the construction sites should be prevented from entering the ground water bodies.
- All materials on the construction site should be properly stored.
- Disposal of waste from the sites should be properly managed and taken to Outapi landfill site.

- Construction workers should be given ablution facilities at the construction sites that do not allow any possible contact with ground water resources. These facilities should be regularly serviced.
- Washing of personnel or any equipment should not be allowed on site. Should it be necessary to wash construction equipment these should be done at an area properly suited and prepared to receive and contain polluted waters.

2.10.5 Soil Impacts

a) Mitigation Measures

- Maintain the grass found on the site and only remove vegetation that has an impact on the development.
- Clear the vegetation of the project area in phases during the construction period in order to keep the soil more compacted as well as to limit overall disturbance to the area over time.
- It is recommended that construction takes place outside of the rainy season in order to limit possible flooding and the run of loose soil causing further erosion.
- Appropriate erosion control structures must be put in place where soil may be prone to erosion.
- Checks must be carried out at regular intervals to identify areas where erosion is occurring. Appropriate remedial action is to be undertaken where ever erosion is evident.

2.11 MITIGATION MEASURES FOR CONSTRUCTION PHASE IMPACTS ON THE SOCIO-ECONOMIC ENVIRONMENT

2.11.1 Heritage Impacts

- The project management should however be made aware of the provisions of the National Heritage Act regarding the prompt reporting of archaeological finds.
- In the event of archaeological finds, the project management or contractors should contact the National Heritage Council of Namibia immediately.

2.11.2 Health, Safety and Security Impacts

a) Mitigation Measures

The following mitigation measures are recommended:

- Construction personnel should not overnight at the site, but only the security personnel.
- Ensure that all construction personnel are properly trained depending on the nature of their work.
- Provide for a first aid kit and properly trained person to apply first aid when necessary.
- A wellness program should be initiated to raise awareness on health issues, especially the impact of sexually transmitted diseases as described above.
- Provide free condoms in the workplace and to local community throughout construction and project operation.
- Facilitate access to Antiretroviral medication
- Restrict unauthorised access to the site and implement access control measures
- Clearly demarcate the construction site boundaries along with signage of no unauthorised access.
- Clearly demarcate dangerous areas and no go areas on site.
- Staff and visitors to the site must be fully aware of all health safety measures and emergency procedures.

- The contractor must comply with all applicable occupational health and safety requirements. The workforce should be provided with all necessary Personal Protective Equipment including where appropriate.

2.11.3 Traffic Impacts

a) Mitigation Measures

The following mitigation measures are recommended:

- Limit and control the number of access point to the site.
- Ensure that road junctions have good sightlines.
- Construction vehicles need to be in a road worthy condition and maintained throughout the construction phase.
- Transport the materials in the least amount of trips as possible.
- Adhere to the speed limit.
- Implement traffic control measures where necessary.

2.11.4 Noise Impacts

a) Mitigation Measures

The following mitigation measures are recommended:

- No amplified music should be allowed on site.
- Inform immediate neighbours of construction activities to commence and provide for continues communication between the neighbours and contractor.
- Limit construction times to acceptable daylight hours.
- Install technology such as silencers on construction machinery.
- Do not allow the use of horns as a general communication tool, but use it only where necessary as a safety measure.

2.11.5 Dust and Emission Impacts

a) Mitigation Measures

The following mitigation measures are recommended:

- It is recommended that Dustex be applied to all the construction clearing activities to ensure 50 % control efficiency and to ensure 75 % control efficiency on all the unpaved roads.
- Construction vehicles to only use designated roads.
- During high wind conditions the contractor must make the decision to cease works until the wind has calmed down.
- Cover any stockpiles with plastic to minimise windblown dust.
- Provide workers with dust masks.

2.11.6 Combined Construction Phase Impacts

a) Mitigation Measures

- It is recommended that waste from the temporary toilets be disposed of at the Outapi Wastewater Treatment Works.
- All solid waste (domestic and construction waste) will be collected and disposed of at an appropriate local landfill in Outapi.

2.12COMPLIANCE AND PENALTIES

2.12.1 Compliance

Environmental management is concerned not only with the final results of the Contractor's operations to carry out the Works but also with the control of how those operations are carried out. Tolerance with respect to environmental matters applies not only to the finished product but also to the standard of the day-to-day operations required to complete the works.

It is thus required that the Contractor shall comply with the environmental requirements on an on-going basis and any failure on his part to do so will entitle the Engineer / ECO to certify the imposition of a penalty, as detailed below, if such non-compliance is not corrected within a period of one week of notification thereof.

2.12.2 Penalties

Penalties will be issued for certain transgressions. Penalties may be issued per incident at the discretion of the Engineer / ECO. Such penalties will be issued in addition to any remedial cost incurred as a result of the non-compliance with this Specification. The Engineer / ECO will inform the Contractor of the contravention and the amount of the penalty, and shall be entitled to deduct the amount from the monies due under the Contract.

Penalties for the activities detailed below, will be imposed by the Engineer / ECO on the Contractor and / or his Sub-Contractors.

a)	Any employees, vehicles, or things related to the Contractor's oper operating outside the designated boundaries or a "no-go" area.	N$ 5,000
b)	Persistent and un-repaired oil leaks from machinery.	N$ 2,000
c)	Persistent failure to monitor and empty drip trays timeously.	N$ 2,000
d)	The use of inappropriate methods for refuelling, resulting in spillages.	N$ 2,000
e)	Litter on site associated with construction activities.	N$ 2,000
f)	Deliberate lighting of illegal fires on site.	N$ 2,000
g)	Any employee eating meals on site, outside of the defined eating area.	N$ 2,000
h)	Employees not making use of the site ablution facilities.	N$ 2,000
j)	Failure to empty waste bins on a regular basis.	N$ 2000
k)	Unauthorised removal of vegetation.	N$ 5000
l)	Hunting, trapping and collection of animals (per unit taken).	N$ 10,000
m)	Failure to implement specified noise controls.	N$ 2,000
n)	A spillage, pollution, fire or any damage to the environment resulting from negligence on the part of the Contractor.	N$ 5,000
o)	Damage to vegetation or ground arising from equipment leaving designated haul or access routes.	N$ 5,000
p)	Failure to submit and, or proceeding with work without having or deviating from an approved method statement, for those task requiring a method statements in terms of the EMP.	N$ 5,000

For each subsequent similar offence the penalty shall be doubled in value to a maximum value of N$ 20,000. The Engineer / ECO shall be the judge as to what constitutes a transgression in terms of this clause.

2.13 MEASUREMENT AND PAYMENT

2.13.1 Basic principles

Except as specified below or in the Project specifications or as Scheduled, no separate measurement and payment will be made to cover the cost of complying with the provisions of this EMP and such costs shall be deemed to be covered by the rates tendered for the items in the Schedule of Quantities completed by the Contractor when submitting his tender.

2.13.2 Scheduled items

All requirements of the environmental management specification

All work not measured elsewhere, associated with complying with any requirement of the environmental management Specification shall be as a measured sum. The tendered rate shall cover any cost associated with complying with the environmental management specification and shall include for all materials, labour and plant required to execute and complete the work as specified, described in the Schedule of Quantities or shown on the drawing(s).

Method statements: Additional work

No separate measurement or payment will be made for the provision of Method Statements but, where the Engineer / ECO requires a change on the basis of his opinion that the proposal may result in, or carries a greater than warranted risk of damage to the work required, provided it could not reasonably have been foreseen by an experienced Contractor.

Work "required by the project specification"

Where a clause in this Specification includes a requirement as "required by the Project Specification", measurement and payment for compliance with that requirement shall be in accordance with the relevant measurement and payment clause of the Project Specification.

2.14 SUMMARY OF CONSTRUCTION PHASE MANAGEMENT ACTIONS

The table below is only a summary of the management actions to be taken in order to minimise negative impacts. Please turn back to the relevant section above for more detail on the various management actions to be taken for each impact.

Table 2: Summarized Management Actions Table

Aspect	Management Objective	Management actions	Responsibility
Responsible management	To ensure that construction activities are carried out so as to cause the least possible disturbance to the existing amenities, whether natural or man-made.	• The Contractor shall take adequate steps to educate all members of his workforce as well as his supervisory staff on the relevant environmental laws and protection requirements. • A suitably qualified independent ECO shall be appointed by the Contractor. • The Contractor shall construct and/or implement all the necessary environmental protection measures in each area before any construction work may proceed.	Contractor
Environmental awareness	To ensure that all employees and Sub-Contractors are informed of their environmental obligations.	The Environmental, Health, and Safety Induction Course should be conducted by the ECO and Contractor's Health and Safety officer.	ECO
		The foreman responsible will provide feedback to his staff on their day-to-day environmental performance and address issues requiring attention and specific actions required.	Contractor
Safety to the public	To reduce the risks posed by the project to the public.	• Where the public could be exposed to danger by any of the Works or site activities, the Contractor shall provide flagmen, barriers, and/or warning signs in English. • No firearms shall be permitted on site without the prior approval of the Project Manager. The Contractor shall implement appropriate measures to limit any adverse social impacts associated with the establishment of a construction camp and/or the accommodation of a construction workforce on the local communities.	Contractor
Human resource and opportunities management	To ensure that job creation, inward migration of workers and accommodation of a workforce within a small community does not result in significant social impacts.	In order to enhance the benefits of employment creation for these communities, it is recommended that the Contractor shall establish a formal and organised recruitment process in line with this EMP.	Contractor
	Construction activities shall be restricted to specified hours in order to limit disturbance to the public.	The Contractor shall restrict construction activities to the hours of 6h30 - 17h00 during summer and 07h00 - 17h00 during winter on Mondays to Saturdays and no work will be permitted on Sundays or public holidays.	Contractor
Dust	To limit dust levels.	• Dustex may be applied to the construction clearing activities to ensure 50% control efficiency on all the unpaved where applicable; • Construction vehicles to only use designated roads; • During high wind conditions the Contractor must make the decision to cease works until the wind has calmed down; and	Contractor

Aspect	Management Objective	Management actions	Responsibility
		• Cover any stockpiles with a suitable material, such as plastic or shade-cloth, to minimise windblown dust.	
Noise	To limit noise levels.	• Install and maintain silencers on machinery • Appropriate directional and intensity settings are to be maintained on all hooters and sirens • No amplified sound shall be allowed on site other than in emergency situations • Drivers and operators are to be instructed to not use their hooters unless absolutely required • Operators of machinery should not use hooters for the purposes of general communication	Contractor
Method statements	To ensure effective and formal communication between the Project Management Team and the Contractor on construction issues throughout all stages of the project	System regarding method statement compilation, submission, review and approval to be rigorously implemented.	Contractor / ECO
		Method Statements that shall be provided by the Contractor 14 days prior to the mobilisation on site include: • Mobilisation plan; and • Operational and rehabilitation plan.	Contractor / ECO
Environmental considerations pertaining to site layout	Suitable area identified where employees can eat and take work recess.	• The Contractor shall identify a suitable area, which is shaded and away from construction noise and dust, where employees can eat and take work recesses in relative comfort. • The eating areas shall be provided with scavenger proof rubbish bins, potable water and other sanitary conveniences.	Contractor
Ablution facilities	Temporary toilets shall be provided by the contractor.	• Temporary / portable toilets shall be supplied by the Contractor for the workers at a maximum ratio of 1 toilet per 15 workers and be within walking distance of the work area. • The toilets shall be placed at appropriate locations to the approval of the Engineer / ECO. • Toilets shall be kept in a good state of repair and shall be serviced at intervals sufficient to ensure that they are kept in clean and sanitary condition.	Contractor
Site demarcation	The Contractor shall restrict all his activities, materials, equipment and personnel to the designated Site.	• The Contractor shall ensure that the clearance of vegetation is restricted only to that required to facilitate the execution of the works. • The Contractor shall peg the route for the proposed pipeline before commencing with any clearing operations.	Contractor
Access, traffic and haul roads	Construction traffic shall be controlled to ensure minimal disruption to normal road users.	The Contractor shall be held responsible for the control of all project related traffic, including that of his suppliers, in ensuring that vehicles associated with the project remain on designated routes and within the designated working times.	Contractor
Solid waste management	To ensure that there is no illegal disposal of waste.	• The Contractor shall provide sufficient number of rubbish bins with secured lids. • No waste materials, including domestic, organic or construction wastes shall be burnt, dumped or buried on the Site.	Contractor

Aspect	Management Objective	Management actions	Responsibility
Fuel and oil	To ensure that all liquid fuels are stored appropriately and adequate fire fighting equipment is stored on site.	• The Contractor shall ensure that all liquid fuels are stored in tanks or mobile bowsers with lids that are kept firmly shut. • All tanks and/or mobile bowsers shall be situated in a bunded area. • The Contractor shall ensure that there is adequate fire-fighting equipment at the fuel storage areas.	Contractor
Equipment maintenance and storage	All vehicles and equipment are kept in good working order.	• Leaking or damaged equipment shall be repaired immediately or removed from the Site. • Drip trays shall be provided in construction areas for stationary and parked plant as well as for the emergency servicing of vehicles.	Contractor
Stockpiling and stockpile areas	All plant and materials shall be stored in designed areas to minimise the disturbance to vegetation and topsoil.	Plant and materials shall be stored within the demarcated construction camp or batching areas.	Contractor
Materials handling, use and storage	All delivery drivers are informed of the on-site procedures and restrictions.	• The Contractor shall ensue that any delivery drivers are informed of all procedures and restrictions, including “no-go” areas and designated haul routes. • All material shall be stored within the designated Site boundaries.	Contractor
Hazardous substances	Any hazardous substances are stored appropriately.	• Hazardous chemical substances used during construction shall be stored in secondary containers. • The relevant Material Safety Data Sheets (MSDS) shall be available on site.	Contractor
Cement and concrete batching	Cement and concrete batching takes place in designated areas.	• The batching of concrete shall take place on a smooth, impermeable surface (plastic) and shall be enclosed with a bund and sloped toward a sump to contain any spillages. • The Contractor shall take all reasonable measures to prevent the spillage of cement / concrete during batching and construction operations.	Contractor
Trenching	Trenches are appropriately demarcated and secured.	Trenches shall be demarcated appropriately and securely and regularly monitored to ensure that pedestrian (and vehicular) access to these areas is strictly prohibited.	Contractor
Fire control	To reduce the risk of fires	• Fires are only permitted in designated area and shall not be left unattended. • Fire extinguishers shall be readily available.	Contractor
Emergency procedures	All employees are aware of emergency procedures.	• The Contractor shall ensure that his employees are aware of the procedure to be followed for dealing with leaks and spills. • The Contractor shall ensure that the necessary materials and equipment for dealing with leaks and spills are available on Site at all times.	Contractor
Erosion, water quality, and storm water management	To prevent or remediate damage to the environment resulting from the Works in the form of erosion and sedimentation shall be taken.	• The Contractor shall take all reasonable steps to prevent or remediate damage to the environment resulting from the Works in the form of erosion and sedimentation. • The Contractor shall immediately remedy any situation that is or has the potential to result in soil erosion, water pollution and sedimentation from the works as a result of storm water flows. • Storm water should be managed appropriately at the culvert crossing where the pipeline are planned to go through underneath the road, so that blockage does not occur.	Contractor

Aspect	Management Objective	Management actions	Responsibility
Protection of natural systems and archaeological sites.	Impacts to natural systems are kept to a minimum.	• Disturbance of vegetation and faunal communities and their habitats is kept to a minimum. • Heavy construction vehicles should be kept out of the seasonal and ephemeral stream channels and the movement of construction vehicles should be limited where possible to the existing roads. • All earthworks equipment operators shall be informed to cease operating immediately if any artefact is unearthed and to report the finding immediately to the Engineer / ECO and Camelthorn Business Venture, who in turn shall notify the National Heritage Council.	Contractor
Rehabilitation	On completion of the Contract all materials, temporary structures, temporary fences, plant, equipment and waste are completely removed from the Site.	• Rehabilitation operations and re-vegetation of all disturbed areas shall commence as soon as possible and even run concurrently where appropriate.	Contractor
Penalties	To ensure that environmental requirements are strictly adhered to.	Penalties will be issued for certain specified transgressions.	Contractor

3 DECOMMISSIONING PHASE

At the end of its useful life, the power plant will be completely dismantled so as to restore the area to *ante operam* conditions. The following actions will be taken during the decommissioning of the plant:

- Reusable, recyclable and scrapable components will be selected.
- Disposal will consist of disassembling the modules and sending them to a suitable recycling platform which will carry out the following recovery work:
    - recovery of aluminium frames;
    - recovery of glass material;
    - recovery of cells;
    - decommissioning of the polymer material covering the cells.
- The electricity lines of all the systems (video surveillance, remote control, lighting, information panel, etc.) will be removed by carrying out only the absolute necessary excavation work.
- Copper from electricity cables and windings as well as other metallic parts will be sent to specialised centres for recovery and recycling.
- Appliances such as inverters, control panels and transformers will be disassembled and sent to specialised companies for disposal.
- Piping and electrical drawpits will be removed by excavating a set size excavation and the original situation will be restored using the excavated material.
- The exposed parts of the photovoltaic module supporting structures will be removed mechanically, whereas the foundation piles sunk into the ground will be extracted.
- The metallic fencing protecting the site will be removed and sent to suitable recovery and disposal centres.
- Material produced during demolition of the cabins will be sent to a centre for the recovery and recycling of inert demolition material.
- Roads will be removed and any surface material will be sent to adequate structures which will mill and sieve the surface layer and the underlying layer will be sent to a centre for the recovery and recycling of inert demolition material.

4 CONCLUSION

In conclusion it should be noted that this EMP should be regarded as a living document and changes should be made to the EMP as required by project evolution while retaining the underlying principles and objectives on which the document is based. The compilation of the EMP has incorporated impacts and mitigation measures from the Environmental Assessment Report, as well as incorporating principles of best practice in terms of environmental management.

APPENDIX A

Generic Method Statement Example

INFORMATION ON METHOD STATEMENTS

Method Statements are to be completed by the person undertaking the work (i.e. the Contractor). The Method Statement will enable the potential negative environmental impacts associated with the proposed activity to be assessed and potentially significant environmental aspects mitigated at the planning stage.

The Method Statement can only be implemented once approved by the ECO.

The Contractor (and, where relevant, any Sub-Contractors) must also sign the Method Statement, thereby indicating that the works will be carried out according to the methodology contained in the approved Method Statement.

The ECO will use the Method Statement to audit compliance by the Contractor with the requirements of the approved Method Statement.

Changes to the way the works are to be carried out must be reflected by amendments to the original approved Method Statement; amendments require the signature of the ECO, denoting that the changed methodology or works are necessary for the successful completion of the works, and are environmentally acceptable. The Contractor will also be required to sign the amended Method Statement thereby committing him/herself to the amended Method Statement.

This Method Statement MUST contain sufficient information and detail to enable the ECO to apply their minds to the potential impacts of the works on the environment. The Contractor will also need to thoroughly understand what is required of him/her in order to undertake the works. A method statement should clearly answer to following:

- What does the activity entail;
- Why is the activity required;
- When will it commence and how long;
- Where will the activity be undertaken;
- How will the activity be undertaken
  - What equipment and machinery will be required;
  - What materials (Chemicals) will be used in the process;
- What are the potential environmental, health and safety concerns associated with this activity and what mitigation measures will be employed to manage these risks.

The time taken to provide a thorough, detailed method statement is time well spent. Insufficient detail will result in delays to the works while the method statement is rewritten to ECO's satisfaction. The page overleaf provides a pro forma method statement sheet, which needs to be completed for each activity requiring a method statement in terms of the EMP.

EXAMPLE OF METHOD STATEMENT

CONTRACT: ……..…….. DATE: ……..

PROPOSED ACTIVITY (give title of Method Statement and reference number):

WHAT WORK IS TO BE UNDERTAKEN (give a brief description of the works):

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works):

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:	**End Date:**

HOW ARE THE WORKS TO BE UNDERTAKEN (provide as much detail as possible, including annotated maps and plans where possible): Note: please attach extra pages if more space is required

DECLARATIONS

1) ENVIRONMENTAL CONTROL OFFICER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactorily mitigated to prevent avoidable environmental harm:

_____ _____

(Signed) ***(Print name)***

_____ _____

(Signed) ***(Print name)***

Date: _____

2) PERSON UNDERTAKING THE WORKS

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to other signatories and that the ECO will audit my compliance with the contents of this Method Statement:

_____ _____

_____ _____

(Signed) ***(Print name)***

Date: _____

3) ENGINEER

The works described in this Method Statement are approved:

_____ _____

(Signed) ***(Print name)***

Date: _____

4) APPROVING AUTHORITY

The works described in this Method Statement are approved:

_____ _____

(Signed) ***(Print name)***

Date: _____

PV Plant - EMP Compliance

16 Nov 2023 / Michael

Incomplete

Camelthorn Business Ventures PV

Conducted on	**16 Nov 2023 08:39 CAT**
Prepared by	**Michael**
Location	**(-17.5172349, 15.0037306)**

6.2.3: ENVIRONMENTAL CONTROL OFFICER (ECO)

Are adequate environmental awareness training for senior site personnel conducted?

Yes

Photo 1

Photo 2

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

Yes

Photo 3

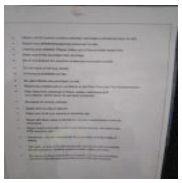

Photo 4

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

Yes

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

Yes

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

Yes

WASTE MANAGEMENT

Waste Management Plan

Has a waste management plan been created?	**Yes**

Waste management plan


Photo 5


Photo 6

Sewage and Grey Water

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

No

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


Photo 7


Photo 8


Photo 9


Photo 10

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

No

General Waste

Is waste buried or burned on site?	**No**
Are waste containers emptied regularly and removed from site to a recognised (municipal) waste disposal site?	**Yes**


Photo 11


Photo 12

Is recyclable waste taken to the nearest recycling depot?	**Yes**

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

Yes

Photo 13

Photo 14

HEALTH AND SAFETY

HIV/AIDS and TB Training

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

Yes

Road Safety

Are all vehicles that transport materials to and from the site, road-worthy?	**Yes**
Do all drivers that transport materials have a valid driver's license and adhere to all traffic rules?	**Yes**
Are loads upon vehicles properly secured to avoid items falling off the vehicle?	**Yes**

No heavy loads transported, but trans world cargo handles transportation of large loads for new equipment.

Safety Around Excavated and Work Areas

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

Yes


Photo 15


Photo 16


Photo 17


Photo 18


Photo 19


Photo 20


Photo 21

Toilets

Is there 1 toilet for every 50 males?

Yes

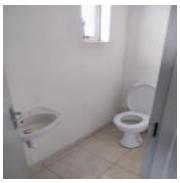
Photo 22


Photo 23

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

In the guards office and in control room/site office

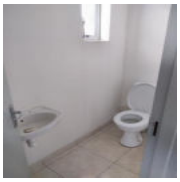
Photo 24


Photo 25


Photo 26


Photo 27


Photo 28


Photo 29

Is the adequacy of the number of toilets on sites closely monitored?	**Yes**
General	
Are there any trees or natural vegetation removed on-site to create open fires?	**No**
Do all employees have the needed PPE (hard hat, gloves, overalls, safety shoes and protective glasses)?	**Yes**
Is there evidence that persons smoke close to fuel storage facilities or portable chemical toilets?	**No**
Do workers drink alcohol during work hours?	**No**
Is unauthorized public access controlled?	**Yes**


Photo 30


Photo 31

Photo 32

Photo 33

DUST AND NOISE

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

Service records

Photo 34

Photo 35

ENVIRONMENTAL TRAINING AND AWARENESS, ENVIRONMENTAL CONSERVATION

Environmental Induction (Training)

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

Training material containing EMP details.


Photo 36

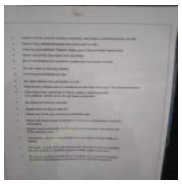
Photo 37


Photo 38

Photo 39

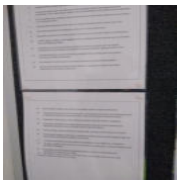
Photo 40

Photo 41

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


Photo 42


Photo 43


Photo 44

Training material

Photo 45

Photo 46

Is there an explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities? **Yes**

Training material containing relevant mitigation measures


Photo 47

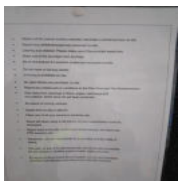
Photo 48

Is there an explanation of the specific mitigation measures within this EMP, especially unfamiliar provisions? **Yes**

Training materials on the specific mitigation measures


Photo 49


Photo 50


Photo 51


Photo 52


Photo 53

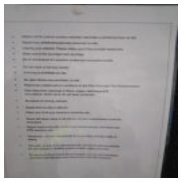
Photo 54

Conservation of Vegetation	
Is there evidence of driving beyond demarcated areas and off established roads taking place?	**No**
Is there evidence of movement of staff or visitors beyond the project site?	**No**
Located in the town of Outapi so some movement around plant. Public access prohibited	
Is the collection of plants or wood for cooking beyond the project site strictly prohibited?	**Yes**
Conservation of Water	
Is water effective equipment used?	**Yes**
Are all leaking fittings repaired or replaced timeously?	**Yes**
Are brooms used to clean floors rather than hosing them down with a pipe?	**Yes**
Are buckets or high pressure hoses used to clean areas, equipment, or vehicles instead of a regular hose pipe?	**Yes**

EMPLOYMENT/RECRUITMENT,

Legislation and Recruitment

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

Yes

Has a recruitment process been developed?

Yes

APS does the recruitment. Public advertising for internal vacancies

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

Yes

Local laborers from Outapi. Four on site and maintenance crew from Windhoek approximately 7.

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

Yes

STAKEHOLDER COMMUNICATION

Communication Plan

Has the contractor developed a Communication Plan?	**Yes**
Does the Communication Plan include how stakeholders, who require ongoing communication for the duration of the construction period, will be identified, recorded and who will manage and update these records?	**Yes**
Does the Communication Plan make provision for grievance mechanisms - i.e., how concerns will be lodged and recorded and how feedback will be delivered as well as further steps of arbitration in the event where feedback is deemed unnecessary?	**Yes**

Photo 55


Photo 56

Photo 57

General Communication Matters and Communication with Property Owners

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

Site manager

Does the Contractor report on the status of the implementation of all provisions of the EMP during every site meeting?	**Yes**
Does all communication with the stakeholders take place through the ECO?	**Yes**
Is a copy of the EMP available at the site office and accessible to all stakeholders?	**Yes**


Photo 58


Photo 59

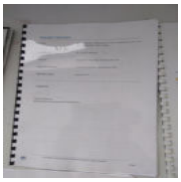
Photo 60


Photo 61

Photo 62

Outapi (Camelthorn Business Ventures (Pty) Ltd)

Submitted to: Camelthorn Business Ventures (Pty) Ltd.
Attention: Mr Alexandre Matton
13 Feld Street
P O Box 3489
Windhoek. Namibia

REPORT:

OUTAPI 5MW SOLAR AC PARK COMBINED HEALTH, SAFETY AND ENVIRONMENTAL REPORT

PROJECT NUMBER: ECC-43-415-REP-03-D

REPORT VERSION: REV 01

PERIOD: JULY 2023

Prepared by: ECC ENVIRONMENTAL COMPLIANCE CONSULTANCY

TITLE AND APPROVAL PAGE

Project Name:	Outapi 5MW Solar AC Park Combined Health, Safety and Environmental Report
Client Company Name:	Camelthorn Business Ventures (Pty) Ltd.
Client Name:	Mr Alexandre Matton
Authors:	Environmental Compliance Consultancy
Status of Report:	Final for client submission
Project Number:	ECC-43-415-REP-03-D
Date of issue:	July 2023
Review Period	NA

ENVIRONMENTAL COMPLIANCE CONSULTANCY CONTACT DETAILS:

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

Environmental Compliance Consultancy
PO Box 91193, Klein Windhoek, Namibia
Tel: +264 81 669 7608
Email: info@eccenvironmental.com

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

NO TABLE OF FIGURES ENTRIES FOUND.

APPENDICES

TERMS AND ABBREVIATIONS

ABBREVIATIONS	DESCRIPTION
AC	alternating current
CCTV	Closed-circuit television
DEA	Directorate of Environmental Affairs
ECB	Electricity Control Board
ECC	Environmental Compliance Consultancy
ECO	Environmental control officer
EMP	environmental management plan
ER	Employer's representative
GL	Generation licence
HSE	Health, Safety and Environment
I&APs	Interested and affected parties
IPP	Independent power producer
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy
MW	Mega-Watt
REFIT	Renewable energy feed-in-tariff

1 INTRODUCTION

1.1 PROJECT BACKGROUND

Camelthorn Business Ventures Number Two (Pty) Ltd is a Namibian company established in 2011 to develop impact investing in Namibia in the fields of real estate and infrastructure. In 2014 the Proponent was granted a generation license by the Electricity Control Board (ECB) within the provisions of the Electricity Act, 2007, (Act No. 4 of 2007). In 2015 the company was enrolled in the national REFIT program selected by NamPower among the 14 IPP in October 2015 and received a financial closing approval in 2016. The construction of the plant commenced in September 2016 and during its construction created 40 jobs, of which six were permanent.

The 5MW AC solar energy generation facility is located on a portion of land which is southeast of Outapi town, Omusati Region. The Project is important to the energy security, sustainable and renewable green energy development agenda for Namibia, which will significantly reduce the national carbon footprint, and create a market for carbon credits and trading in the country.

The following is the summary of the activities associated with the operational stage of the proposed solar plant that could potentially have an impact on the environment.

The Proponent currently holds a valid environmental clearance certificate for the operation of the Outapi solar plant. Onsite environmental compliance audits take place on a yearly basis to check the status of compliance of the activities on site with the environmental management plan.

The Project is located in the Omusati Region. See Figure 1.

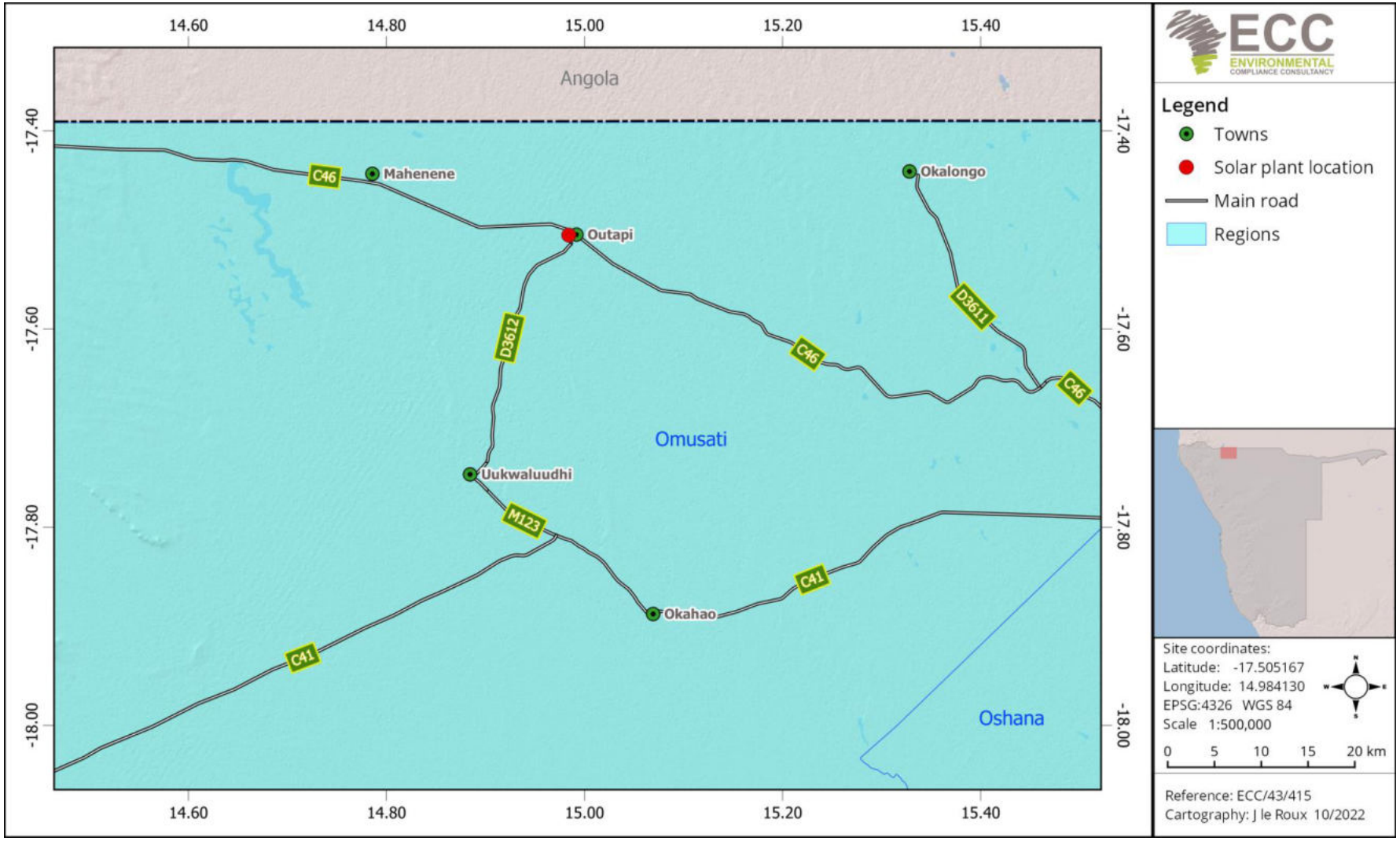


Table 1 – Project location

1.2 THE PROPONENT OF THE PROJECT

Table 2 - Proponent's details

Company Representative:	Contact Details:
Mr Alexandre Matton	Camelthorn Business Ventures (Pty) Ltd: 2 Schutzen Str P O Box 27527 Windhoek, Namibia

1.3 PURPOSE OF THE HEALTH, SAFETY AND ENVIRONMENTAL REPORT

The purpose of this report is to report on the compliance of the Proponent and its employees with their environmental management plan (EMP). This means that the Proponent and its employees should adhere to all rules, regulations and policies stipulated in their EMP. This enables the Proponent to ensure that the activities of their project do not put their employees' health and safety at risk, while also ensuring no excessive negative impacts are caused to the environment. This enables the Proponent to comply to all legal standards by pointing out areas of non-compliance and allowing them to take immediate action on implementing corrective actions. This creates a healthy and safe working environment for all the Proponent's employees and the receiving environment of the project.

1.4 ENVIRONMENTAL ASSESSMENT PRACTITIONER

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

All compliance and regulatory requirements regarding this report should be forwarded by email or posted to the following address:

Environmental Compliance Consultancy
PO Box 91193, Klein Windhoek, Namibia
Tel: +264 81 669 7608
Email: info@eccenvironmental.com

2 HEALTH, SAFTEY AND ENVIRONMENTAL MONITORING PROGRAMME

2.1 HSE POLICY AND REGULATIONS

The health, safety and environmental monitoring of the Project were undertaken in accordance with the conditions stipulated in the Project's legally binding EMP. Camelthorn Business Ventures (Pty) Ltd has incorporated their EMP in the environmental management systems of the company, national and international environmental best practice standards for Solar AC operational and decommissioning planning. The monitoring results outlined in this report therefore outline the actions that were undertaken and implemented during the period from February 2021 to June 2022.

2.2 EMPLOYMENT STRUCTURE, ROLES AND RESPONSIBILITIES

Table 3 outlines the roles and responsibilities of the Proponent and their employees for operation of the solar plant.

Table 3 - Roles and responsibilities

ROLE	RESPONSIBILITY
Proponent	– Responsible for the overall management and implementation of the EMP; – Ensure environmental policies are drafted/updated and communicated to all personnel throughout the company; – Responsible for providing the resources required to effectively run operations and comply with EMP; – Appoint all managers needed to ensure the effective running of operations and – Ensure systems for proper induction and training of personnel and contractors are in place.
Project Manager/ Employer's Representative (ER)	– Act as employer's on-site project manager and implementing agent; – Appoint the ECO; – Ensure that the employer's responsibilities are executed in compliance with the relevant legislation and the EMP; – Ensure that all the necessary environmental authorizations and permits have been obtained and are kept up-to-date; – Assist in finding environmentally responsible solutions to challenges that may arise with input from the ECO; – The ER has the authority to issue fines for transgressions of basic conduct rules and/or contravention of the EMP;

ROLE	RESPONSIBILITY
	– Report to the Employer on the implementation of this EMP on site (with input from the ECO and/or independent environmental auditor); – Maintain open and direct lines of communication between the Employer, ECO, and Interested and Affected Parties (I&APs) with regards to environmental matters, and; – Attend regular site meetings and inspections.
Environmental Control Officer (ECO)	– Assist the ER in ensuring that the necessary environmental authorisations and permits have been obtained; – Assist the ER in finding environmentally responsible solutions to challenges that may arise; – Conduct environmental monitoring as per EMP requirements; – Recommend on the issuing of fines for transgressions of basic conduct rules and/or contraventions of the EMP to the ER; – Advise the ER on the removal of person(s) and/or equipment not complying with the specifications of the EMP; – Report any non-compliance(s) to the ER as soon as possible. – Organise for an independent internal audit on the implementation of and compliance to the EMP to be carried out; audit reports to be submitted to the ER; – Continuously review the EMP and recommend additions and/or changes to the EMP document; – Monitor the Proponent's environmental awareness training for all new personnel coming onto site; and – Keep records of all activities related to environmental control and monitoring; the latter to include a photographic record of the environmental control, and a register of all major incidents. – Comply with the relevant legislation and municipal by-laws; – Preparation and submission to Camelthorn Business Ventures (Pty) Ltd of the following Management Plans: o Environmental Awareness Training and Inductions; o Emergency Preparedness and Response; o Waste Management, and; o 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 ECO is to provide the course content and the following topics, at least but not limited to, should be covered:

ROLE	RESPONSIBILITY
	○ The importance of complying with the relevant Namibian, International and Best Practice Legislation; ○ 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; ○ Health and Safety Requirements. – Record keeping of all environmental awareness training and induction presentations, and; – Attend regular site meetings and environmental inspections.
Constructing Supporting Teams	– Solar panels suppliers, installer, mechanical and crane contractors, electrical contractors and civil / structural contractors, each with their respective subcontractors and suppliers, would report directly to the Employer's Representative (ER), acting as the onsite Project Manager

2.3 MONITORING METHODOLOGY

This reporting process forms part of the ongoing monitoring programme as part of the EMP performance assessment. The monitoring and reporting are to track performance against objectives and document all health, safety and environmental activities. This will form part of the Project's external auditing. This ensures that corrective actions are reviewed and where applicable used to update the existing EMP during the next ECC renewal application. This will ensure that steps are taken to ensure improved compliance for future years. This report further outlines the status of the environment and any likely environmental liability that may occur after the decommissioning of the plant.

3 HSE PERFORMANCE MONITORING RESULTS.

3.1 Overview of activities carried out for the period January 2020-June 2022

The following activities were undertaken for the period January 2020 – June 2022:

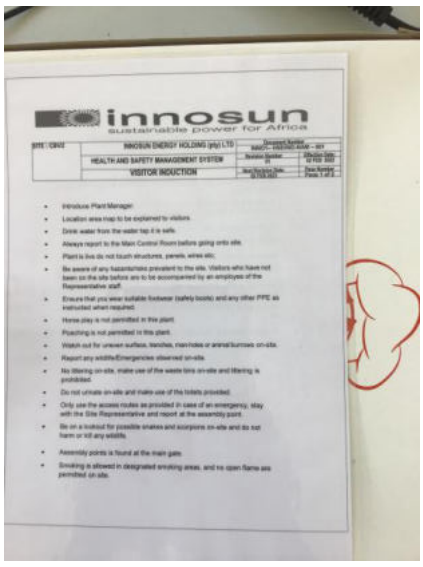
- Energy generation;
- Solar plant operation and
- Maintenance of solar plant, panels, maintenance and equipment shed and overall site.

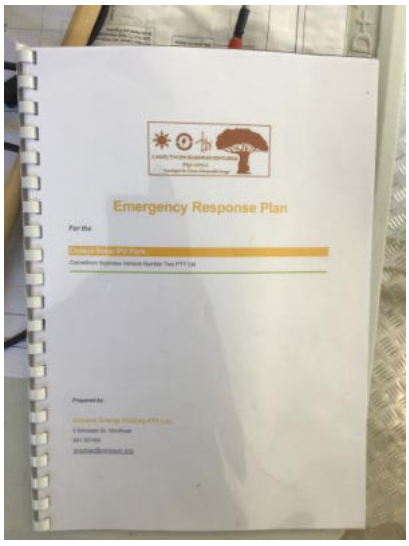
3.2 Water supply

Potable water is supplied by the Outapi municipality and is mainly used for drinking water for the two security guards that stay on site to provide security to the plant. 30 000 Litres is used to clean the panels three times a year.

This wastewater is allowed to drain off the panels on to the soil beneath the panels as it has been assessed to have very low potential of polluting impacts on the soil in the receiving environment. However, erosion gullies have caused weak points in the perimeter fence on the northern flank of the site and are possible entrance points for unauthorised people and roaming fauna and these points should be fixed as soon as possible.

3.3 Site observations





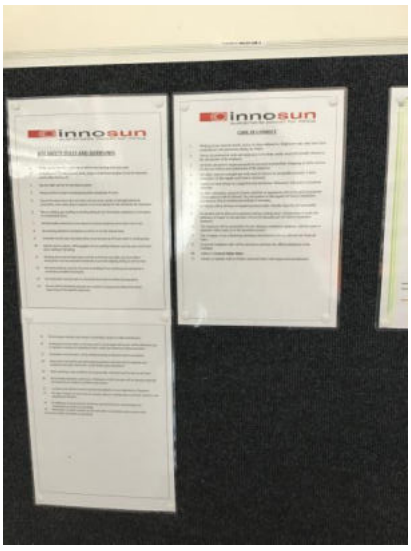


Table 4 - Emergency response plan and safety rules guidelines

One fire extinguisher in the guard house has expired and has not been charged even though it is full and sealed.

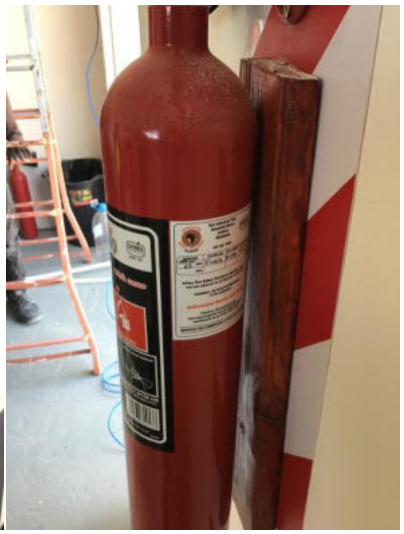


Table 5 - Fire extinguishers on site

Table 6 - Safety emergency exit signs placed at various exits on site

There was no-printed environmental management plan on site. Access to the site is controlled during the day by one security guard and two at night, they have a panelled shelter next to the gate entrance and have access to toilet facilities.

Table 7 - Clean toilets on-site

There are CCTV cameras on site however, one of the camera placements should be corrected to face away from the office wall.

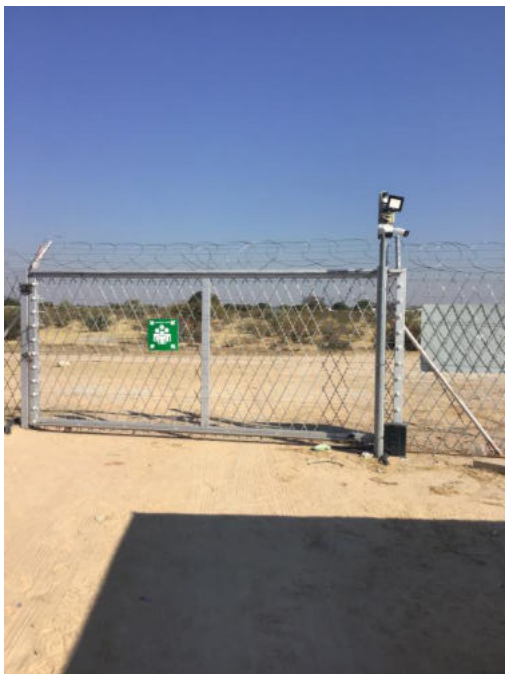


Table 8 - CCTV cameras on-site

General housekeeping should be improved on site and redundant construction material should either be removed from site or stored away properly, as they are currently found lying on the ground.

Table 9 - Redundant construction material laying around

Inductions and EMP training are not done on a regular basis and are not recorded with personnel visiting the site.

There are two open cabling manholes onsite and even though the covers are present they have not been used to close the holes.

Table 10 - Open cabling manholes

Table 11 - Monitoring of environmental performance implementation/environmental awareness training

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
Is there an Environmental awareness training programme?	**Non-Compliant**	Create an Environmental awareness training programme	Proponent	October 2022	**Pending** - follow-up needed
How many people have been given environmental awareness training?	**Non-Compliant**	Give environmental awareness training	ECO	October 2022	**Pending** - follow-up needed
Is a copy of the EMP on site?	**Non-Compliant**	Place a copy of the EMP on site	ECO	October 2022	**Pending** - follow-up needed
How effective is the awareness training? Do people understand the contents of the EMP? Where are the weaknesses?	**Pending**	To be reviewed after implementation of the above during the next audit period	ECO	October 2022	**Pending** - follow-up needed

Table 12 - Monitoring of environmental performance for the temporal and permanent structures

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
Are the temporal and permanent structures positioned to avoid sensitive potential sensitive sites?	**Compliant**	NA	NA	NA	NA

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
Has new infrastructure been created?	**No**	NA	NA	NA	NA
No dumping of waste products of any kind in or in close proximity to the surface water bodies.	**Next to the staff accommodation**	NA	NA	NA	NA
Ensure that oil/ fuel spillages from construction vehicles and machinery are minimised and that where these occur, that they are appropriately dealt with.	**No Litter - Compliant**	NA	NA	NA	NA
Drip trays must be placed underneath construction vehicles when not in use to contain all oil that might be leaking from these vehicles.	**Compliant**	NA	NA	NA	NA
Is there evidence of oil / diesel spills?	**NO**	NA	NA	NA	NA
All materials on the construction site should be properly stored	**Non-compliant**	Redundant construction material should be stored away properly or removed from site	Proponent	30/11/2022	Pending
Disposal of waste from the sites should be properly	**Compliant**	NA	NA	NA	NA

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
managed and taken to Outapi landfill site					
Washing of personnel or any equipment should not be allowed on site. Should it be necessary to wash construction equipment these should be done at an area properly suited and prepared to receive and contain polluted waters	**Compliant**	NA	NA	NA	NA
Maintain the grass found on the site and only remove vegetation that has an impact on the development	**Compliant**	NA	NA	NA	NA
Clear the vegetation of the project area in phases during the construction period in order to keep the soil more compacted as well as to limit overall disturbance to the area over time	**Compliant**	NA	NA	NA	NA
Appropriate erosion control structures must be put in place	**Partially Compliant**	Erosion prevention measures are being implemented but frequent	Proponent	30/11/20222	**Pending** - follow-up needed

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
where soil may be prone to erosion.		monitoring should happen during the rainy season.			
Checks must be carried out at regular intervals to identify areas where erosion is occurring. Appropriate remedial action is to be undertaken wherever erosion is evident	**Compliant – visual checks**	Visual checks should be documented going forward.	ECO	NA	NA

Table 13 - Environmental data collection

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
Are records being kept?	**Compliant**	NA	NA	NA	NA
Birds' mortality records as result of collision with the powerline?	**Compliant**	NA	NA	NA	NA
Birds nesting activities around the solar park and powerline area?	**Compliant**	NA	NA	NA	NA
Noise level?	N/A	NA	NA	NA	NA
Air Quality?	N/A	NA	NA	NA	NA
Have archaeological sites been found / disturbed / described?	N/A	NA	NA	NA	NA

Other key environmental data sets?	**Compliant**	NA	NA	NA	NA

Table 14 - Health and safety

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
Provide for a first aid kit and properly trained person to apply first aid when necessary	**Compliant**	NA	NA	NA	NA
Wellness program should be initiated to raise awareness on health issues, especially the impact of sexually transmitted diseases.	**Compliant**	NA	NA	NA	NA
Facilitate access to Antiretroviral medication	**Compliant**	NA	NA	NA	NA
Restrict unauthorised access to the site and implement access control measures.	**Compliant**	NA	NA	NA	NA
Clearly demarcate dangerous areas and no-go areas on site	**Compliant**	NA	NA	NA	NA
Staff and visitors to the site must be fully aware of all health safety measures and emergency procedures	**Non-compliant**	Environmental management plan should be on-site at all times	ECO	30/11/2022	Pending

Table 15 – Traffic Impacts

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
Limit and control the number of access point to the site	**Compliant**	NA	NA	NA	NA
Ensure that road junctions have good sightlines	**Compliant**	NA	NA	NA	NA
Transport the materials in the least number of trips as possible	NA	NA	NA	NA	NA
Adhere to the speed limit	**Compliant**	NA	NA	NA	NA
Implement traffic control measures where necessary.	NA	NA	NA	NA	NA

Table 16 - Management of the natural habitat and surficial materials management

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
Has there been any development done on or close sensitive areas?	**Compliant**	NA	NA	NA	NA
Has anyone been caught with Parks or animals in their possession?	**Compliant**	NA	NA	NA	NA
Has there been wilful or malicious damage to the environment?	**Compliant**	NA	NA	NA	NA
Has topsoil / seed bank layer been removed from demarcated	**Compliant**	NA	NA	NA	NA

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
development areas and appropriately stored					

Table 17 - Tracks and off-road driving

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
Are existing tracks used and maintained?	**Complaint**	NA	NA	NA	NA
What new tracks have been developed and are they planned?	**Complaint**	NA	NA	NA	NA
What evidence is there of off-road driving? Who appears to be responsible?	**Complaint**	NA	NA	NA	NA
Are corners being cut, what type of turning circle are there? Three point turns vs. U turns?	**Complaint**	NA	NA	NA	NA
Have unnecessary tracks been rehabilitated and how well?	**None needed to be rehabilitated**	NA	NA	NA	NA
Comments	NA	NA	NA	NA	NA

Table 9 – Noise Impacts

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
No amplified music should be allowed on site.	**Complaint**	NA	NA	NA	NA
Do not allow the use of horns as a general communication tool, but	**Complaint**	NA	NA	NA	NA

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
use it only where necessary as a safety measure					

Table 18 - Management of surface and groundwater

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
How is potable water supplied and how often? Position of tanks?	**Municipal supply**	NA	NA	NA	NA
Is water being wasted?	**Complaint**	NA	NA	NA	NA
Is there any leakage from pipes or taps?	**Complaint**	NA	NA	NA	NA
Has casing been left when boreholes hit water and have any records of water strikes been kept? Were water samples taken and RWL measured?	**NA**	NA	NA	NA	NA

Table 19 - Public relations

Mitigation	Compliance	Follow-up action required	By whom	By when	Completed
Have any complaints been made about the solar park construction and or operational activities by the different I&APs? If so, what, and how was the issue resolved?	**None therefore Complaint**	NA	NA	NA	NA

3.4 PERMIT/AUTHORISATION REQUIREMENTS FOR OPERATION

Activity	Applicable legislation	Permitting authority	Current status
Generation Licence (GL)	Electricity Act 2007 (Act No. 4 of 2007)	Electricity Control Board through approval by Ministry of Mines and Energy (MME)	**GL issued and valid for 25 years**
Environmental clearance certificate	Environmental Management Act, 2007, (Act No.7 of 2007)	Ministry of Environment, Forestry and tourism (MEFT), Department of Environmental Affairs and Forestry (DEAF)	**Currently valid**
Land rights covering the operational solar park area	None	Private land	**Lease agreement in place**
Removal, disturbance or destruction of eggs	Nature Conservation Ordinance 4 of 1975	Ministry of Environment, Forestry and tourism (MEFT), Department of Environmental Affairs and Forestry (DEAF	**No removals**
Removal, destruction of indigenous trees, bushes or plants within 100 meters of a stream or watercourse		Ministry of Environment, Forestry and tourism (MEFT), Department of Environmental Affairs and Forestry (DEAF	**No removals**

3.5 NON-COMPLIANCES

The following issues of non-compliance were either reported or observed on site:

- Open cabling manholes onsite and even though the covers are present they have not been used to close the holes;
- Redundant construction material found lying on the ground;
- Improper housekeeping;
- No-printed environmental management plan on-site;
- One fire extinguisher in the guard house has expired and has not been changed even though it is full and sealed;
- Erosion gullies have cause weak points in the perimeter fence on the northern flank of the site and are possible entrance points for unauthorised people and roaming fauna;
- Inductions and familiarization of visiting personnel not carried out and
- No training and logging of training of personnel.

3.6 CORRECTIVE ACTIONS

Penalties for the activities detailed below, will be imposed by the ECO on the Contractor and / or his Sub-Contractors.

Table 20 - Penalties for the activities for non-compliances

Non-compliance	Fine
Any employees, vehicles, or things related to the Contractor's operations operating outside the designated boundaries or a "no-go" area	**N$ 5,000**
Persistent and un-repaired oil leaks from machinery	**N$ 2,000**
Persistent failure to monitor and empty drip trays timeously	**N$ 2,000**
The use of inappropriate methods for refuelling, resulting in spillages	**N$ 2,000**
Deliberate lighting of illegal fires on site.	**N$ 2,000**
Any employee eating meals on site, outside of the defined eating area.	**N$ 2,000**
Employees not making use of the site ablution facilities.	**N$ 2,000**
Failure to empty waste bins on a regular basis.	**N$ 2000**
Unauthorised removal of vegetation.	**N$ 5000**
Hunting, trapping and collection of animals (per unit taken).	**N$ 10,000**
Failure to implement specified noise controls.	**N$ 2,000**
A spillage, pollution, fire or any damage to the environment resulting from negligence on the part of the Contractor.	**N$ 5,000**
Damage to vegetation or ground arising from equipment leaving designated haul or access routes.	**N$ 5,000**
Failure to submit and, or proceeding with work without having or deviating from an approved method statement, for those tasks requiring a method statement in terms of the EMP.	**N$ 5,000**

For each subsequent similar offence, the penalty shall be doubled in value to a maximum value of N$ 20,000. The ECO shall be the judge as to what constitutes a transgression in terms of this clause.

The corrective actions that need to be taken are listed in Table 21 (Reference to section 3.4 of the EMP):

Table 21 - Corrective actions for non-compliances

Non-compliance	Image	Corrective action
Two open cabling manholes onsite and even though the covers are present they have not been used to close the holes		Ensure that cabling manholes are closed as all times
General housekeeping should be improved on site and redundant construction material should either be removed from site or stored away properly, as they are currently found lying on the ground		Improve general housekeeping. Store equipment not in use in an enclosed place or remove it from the site.
Improper storage of equipment		Unused equipment should be stored properly in a closed container or shed. Protected from sun and rain and not in a position that could harm employees.

Non-compliance	Image	Corrective action
Inadequate housekeeping		Equipment should be stored properly in a closed container or shed. Protected from sun and rain and not in a position that could harm employees or should be removed from the site.
No-printed environmental management plan on site	**Not available**	Ensure that a copy of the site and project's environmental management plan is on site at all times
One fire extinguisher in the guard house has expired and has not been changed even though it is full and sealed	**Not available**	Ensure that fire extinguishers are regularly replaced and are up to date
Erosion gullies have caused weak points in the perimeter fence on the northern flank of the site and are possible entrance points for unauthorised people and roaming fauna	**Not available**	These sections should be fixed as soon as possible and erosive preventative measures such as placing large rocks at the bottom around the fence will help prevent erosion.
Inductions and familiarization of visiting personnel not carried out	**Not applicable**	Create and environmental awareness and induction to site programme and carry out site inductions and visiting persons

Non-compliance	Image	Corrective action
		familiarization with the sites EMP every time someone who is not a member of staff enters the site.
No training and logging of training of personnel	**Not available**	Proof of training of onsite personnel should be kept in a logbook

4 CONCLUSION AND RECOMMENDATIONS

It is recommended that the Proponent takes more care in addressing general housekeeping, continuous monitoring of erosion control measures along the boundary fence especially during the rainy season, open cabling manholes should be closed with the available covers and safety inductions and environmental training should be carried out with employees and visiting personnel. Material not in-use should be removed from site or stored away properly. Snake handling training should be given to all personnel on-site.

The Proponent should continue to adhere to all environmental legislation and company standards to ensure that best practical environmental protection continues as the project activities continue.

APPENDIX A – ENVIRONMENTAL CLEARANCE CERTIFICATE

ECC – 01219 Serial: RiTHcF1219

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

Camelthorn Business Ventures Number Two (Pty) Ltd
P. O. Box 27527, Windhoek

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY

Operations of the 5MW AC photovoltaic plant in Outapi, Omusati Region

MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM
Private Bag 13306
WINDHOEK, NAMIBIA
16 FEB 2021
ENVIRONMENTAL COMMISSIONER
REPUBLIC OF NAMIBIA

Issued on the date: 2021-02-09
Expires on this date: 2024-02-09

(See conditions printed over leaf)

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APPENDIX B – GENERATION LICENCE

ELECTRICITY CONTROL BOARD

GENERATION LICENCE

NO G-128-010614-25

Issued to

Camelthorn Business Ventures Number Two (Pty) Ltd

(Registration number: 2012/0181)

The ELECTRICITY CONTROL BOARD, in exercise of the powers conferred by section 20 (8) of the Electricity Act, 2007, and upon approval to grant a Generation Licence by the Minister in terms of section 20(6), hereby issues a Generation Licence to **Camelthorn Business Ventures Number Two (Pty) Ltd** to generate electricity from Solar PV at Outapi for the purpose of enabling a supply to be offered by suppliers to customers subject to the conditions as imposed by the Minister and set out in this Licence and the Electricity Act, 2007.

ELECTRICITY CONTROL BOARD

Jason Nandago
Chairman

Foibe L. Namene
Chief Executive Officer

NOT VALID WITHOUT LICENCE CONDITIONS

APPENDIX C - ENVIRONMENTAL MANAGEMENT PLAN