RENEWAL OF THE ENVIRONMENTAL CLEARANCE FOR THE OPERATION OF A PHOTOVOLTAIC (SOLAR) PLANT AND OVERHEAD POWERLINES ON A PORTION OF PORTION 7 OF FARM KLEIN OKAPUKA NO. 51

November 2023

App - 231130002535

Project Name:	***RENEWAL OF THE ENVIRONMENTAL CLEARANCE FOR THE OPERATION OF A PHOTOVOLTAIC (SOLAR) PLANT AND OVERHEAD POWERLINES ON A PORTION OF PORTION 7 OF FARM KLEIN OKAPUKA NO. 51***
Proponent:	**Namib Poultry (Pty) Ltd** NAMIB POULTRY BECAUSE YOU DESERVE BETTER P O Box 20276 Windhoek
Prepared by:	Green Earth ENVIRONMENTAL CONSULTANTS 1st floor Bridgeview Offices & Apartments, No. 4 Dr Kwame Nkrumah Avenue, Klein Windhoek, Namibia PO Box 6871, Ausspannplatz, Windhoek
Release Date:	November 2023
Consultant:	C. Du Toit C. Van Der Walt Cell: 081 127 3145 Email: charlie@greenearthnamibia.com

EXECUTIVE SUMMARY

Green Earth Environmental Consultants have been appointed by Namib Poultry to attend to and complete an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) **to renew the Environmental Clearance (EC) for the 4 Megawatt Photovoltaic Plant (PV Plant) and Overhead Power Lines on a Portion of Portion 7 of Farm Klein Okapuka No. 51, Khomas Region** as per the requirements of the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012). It is required to renew the Environmental Clearance (EC) as the old EC which was issued on 14 April 2020 expired on 14 April 2023.

Table 1: Overview of the Namib Poultry PV Plant

Characteristics	Description
Approved ECB Generation Licence	25 years
Licensee	Namib Poultry Industries (Pty) Ltd
Installed Capacity	3,087MWp/annum
Embedded Co-generator Plant	2,85MW
Storage	None
Connection with grid	Existing NPI - NamPower Transmitter station
Contestable customers	Namib Mills – 5,086MWh Namib Poultry – 6,296MWh
NamPower supply agreement	10 years
City of Windhoek Fitness Certificate	Valid till 13/05/2024
Operation & Management Agreement	NEC – 2 years - renewable

The activities listed below, which forms part of the proposed operations, may not be undertaken without an Environmental Clearance Renewal:

ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES

1. The construction of facilities for -

(a) the generation of electricity;

(b) the transmission and supply of electricity;

Activity	Impact
±16ha area was cleared to accommodate the Photovoltaic Plant and transfer station.	Low impact – area was already cleared in the past, mainly covered by intruder bush and impacted by human activities and grazing interference.
4-Megawatt PV Plant to be constructed in 2 phases. Phase 1 comprising of the installation and commissioning of a 2,85 MW PV Plant has been completed and is operational. It is the intension to implement Phase 2 in the next 2 – 3 years.	Low impact – phasing improves the feasibility of the project.

PV modules was fitted on aluminium/steel single axis solar tracker for optimized energy gain 1.2m above ground for reduced heat reflection.	Positive impact – improved efficiency of operation of the PV Plant.
PV Plant area was fenced off with a security fence to prevent human and animal interference and is under 24-hour security surveillance with access control.	Low impact as fence does not interfere with animal, human or vehicular tracks.
3km of overhead lines was constructed to link PV Plant with existing NPI Substation.	Low impact – lines was aligned with existing NamPower servitudes and roads.
Cable trenches 1m deep and was backfilled and compacted to standard in order to prevent erosion.	Low impact – soil erosion to be minimized.
Lines was constructed by timber poles, 80m spacing, Wolf bare conductor, fitted in HLPCD staggered delta formation with a minimum of 9m ground clearance.	Low impact as giraffes roaming the area will clear the lines at this height.
There are giraffes roaming on the farm.	Powerline was constructed at 9m height to prevent the risk of the electrocution of the giraffes.
Powerline bird interaction.	The lines are visible (fitted with bird flight divertors) in order to prevent birds from flying into the lines.
The PV Plant and transfer station area is maintained and kept clean from bush/shrub/tree regrowth by application of environmentally friendly herbicides and hand clearing.	Low impact - a systemic, broad-spectrum glyphosate-based herbicide, glyphosate-based herbicides do have a significant risk for human or environmental health when the product label is not properly followed.
Renewable source of energy which reduces operation costs of NPI.	Positive impact.
Less pressure on NamPower network	Positive impact.

The environmental impacts during the operational phase of the proposed project:

IMPACTS DURING OPERATIONAL PHASE			
Aspect	**Impact Type**	**Significance of impacts Unmitigated**	**Significance of impacts Mitigated**
Ecology Impacts	-	M	L
Dust and Air Quality	-	M	L
Groundwater Contamination	-	M	L
Waste Generation	-	M	L
Failure of Reticulation Pipeline	-	M	L
Fires and Explosions	-	M	L
Safety and Security	-	M	L

IMPACT EVALUATION CRITERION (*DEAT 2006*):		
Criteria	**Rating (Severity)**	
Impact Type	+	Positive
	O	No Impact
	-	Negative
Significance of impacts	L	Low (Little or no impact)
	M	Medium (Manageable impacts)
	H	High (Adverse impact)

Some of the positive impacts associated with the solar plant of Namib Poultry are the generation of energy, making use of a renewable source of energy and the creation of employment. The type of activities that is carried out on the site does not negatively affect the amenity of the locality and the activities does not adversely affect the environmental quality of the area. None of the potential impacts identified are regarded as having a significant impact to the extent that the proposed project should not be allowed further. However, the operational activities further on need to be controlled and monitored by the assigned managers and the proponent. Mitigation measures was provided that can control the extent, intensity, and frequency of these named impacts in order not to have substantial negative effects or results. It is believed that the overall cumulative impact on the biophysical environment will be low and there will be a positive impact on the socio-economic environment.

The Environmental Impact Assessment Renewal which follows upon this paragraph was conducted in accordance with the guidelines and stipulations of the Environmental Management Act (No 7 of 2007) meaning that all possible impacts have been considered and the details are presented in the report.

Based upon the conclusions and recommendations of the renewed Environmental Impact Assessment Report and Environmental Management Plan, the Environmental Commissioner of the Ministry of Environment, Forestry and Tourism is herewith requested to:

1. Accept and approve the renewed Environmental Impact Assessment.
2. Accept and approve the renewed Environmental Management Plan.
3. Issue a renewed Environmental Clearance **for the 4 Megawatt Photovoltaic Plant (PV Plant) and Overhead Power Lines on a Portion of Portion 7 of Farm Klein Okapuka No. 51, Khomas Region** for Namib Poultry and for the following listed activities:

   ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES
   1. The construction of facilities for -
   (a) the generation of electricity;
   (b) the transmission and supply of electricity;

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LIST OF ABBREVIATIONS

EC	Environmental Clearance
ECO	Environment Control Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
I&APs	Interested and Affected Parties
MAWLR	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism

1. INTRODUCTION

Green Earth Environmental Consultants have been appointed by Namib Poultry to attend to and complete an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) **to renew the Environmental Clearance (EC) for the 4 Megawatt Photovoltaic Plant (PV Plant) and Overhead Power Lines on a Portion of Portion 7 of Farm Klein Okapuka No. 51, Khomas Region** as per the requirements of the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012). It is required to renew the Environmental Clearance (EC) as the old EC which was issued on 14 April 2020 expired on 14 April 2023.

The activities listed below, which forms part of the proposed operations, may not be undertaken without an Environmental Clearance Renewal:

> ***ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES***
> *1. The construction of facilities for -*
> *(a) the generation of electricity;*
> *(b) the transmission and supply of electricity;*

The following Environmental Impact Assessment Renewal contains information on the project and the surrounding areas and activities.

2. TERMS OF REFERENCE

To be able to continue with the project, an Environmental Impact Assessment Renewal and Environmental Clearance Renewal is required. For this environmental impact exercise, *Green Earth Environmental Consultants* followed the terms of reference as stipulated under the Environmental Management Act.

The aim of the environmental impact assessment is:

- To comply with Namibia's Environmental Management Act (2007) and its regulations (2012).
- To ascertain existing environmental conditions on the site to determine its environmental sensitivity.
- To inform I&APs and relevant authorities of the details of the proposed activities and to provide them with an opportunity to raise issues and concerns.
- To assess the significance of issues and concerns raised.
- To compile a report detailing all identified issues and possible impacts, stipulating the way forward and identify specialist investigations required.
- To adhere to the National Solid Waste Management Strategy of the Ministry of Environment, Forestry and Tourism
- To outline management guidelines in an Environmental Management Plan (EMP) to minimize and/or mitigate potentially negative impacts.

The tasks that were undertaken for the Environmental Impact Assessment Renewal include the evaluation of the following: climate, water (hydrology), vegetation, geology, soils, social, cultural heritage, groundwater, sedimentation, erosion, biodiversity, sense of place, socio-economic environment, health, safety and traffic.

The renewed EIA and EMP from the assessment will be submitted to the Environmental Commissioner for consideration. A renewed Environmental Clearance will only be obtained (from the DEA) once the renewed EIA and EMP has been examined and approved for the listed activities.

The public consultation process as per the guidelines of the Act has been followed. The methods that were used to assess the environmental issues and alternatives included the collection of data on the project site and area from the proponent and identified stakeholders. All other permits, licenses or certificates that are further on required for the operation of the proposed project still needs to be applied for by the proponent.

3. PROJECT DESCRIPTION/SITE INFORMATION

3.1. LOCALITY OF PROJECT SITE

The Photovoltaic Plant (PV) is located on a portion of Portion 7 of Farm Klein Okapuka No. 51, Khomas Region, ±30km to the north of Windhoek, to the west of the B1 National Road. The PV Plant is used to supplement the electricity requirements of NPI's operations under an Embedded Co-generation Agreement with NamPower. The PV Plant is linked to the existing NamPower - NPI Transmitter Station located on the Farm from where it links up with the various NPI and Namib Mills operations via a ±3km of 11kV overhead powerlines. Phase 1 of the PV Plant (±2,85MWp/annum) has been constructed and is in operation. It is intended to implement Phase 2 in the next 2 – 3 years to bring the plant up to 4MW output to cater for the additional requirements of the Proponent's operations. Both Phases of the PV Plant and Transfer Station will be constructed on an area of approximately 16ha that have already been cleared from vegetation.

The PV Plant and Transfer Station includes the Solar Feeder Lines and overhead lines. The timber poles that were used for the overhead lines is 11m high with 9m ground clearance. The lines were constructed at 80m spacing, Wolf bare conductor (a special type of aluminium conductor steel reinforced) and fitted in HLPCD (staggered delta formation). PV modules was fitted on aluminium/steel single axis solar tracker for optimized energy gain. The solar modules are typically mounted 1.2m above ground for reduced heat reflection. The proposed line routes are 3 km 11kV overhead lines from the proposed PV plant to the existing Poultry Substation supplied from NamPower's bulk supply.

The road and power line crossings allows for special clearance from the necessary authorities based on site survey data and profiling. The line route for the generator feeder is west of the existing 132kV (operated at 66kV) monopole transmission line, just outside the 30m NamPower servitude. Phase 1 and 2 of the PV Park is aligned with the current power lines, farm boundary and road reserve. The area mentioned represents no less

than 16 ha for the PV park c/w transfer station. The entire area that accommodates the PV Park is fenced off with a security fence to prevent human and animal interference with 24 hour guarded access control.

The site for the PV Plant has previously been cleared of vegetation. The vegetation on the site consists mainly of intruder bush (see paragraph on biodiversity and vegetation). Civil interference to the soil during site preparation and construction was kept to a minimum, only some grading and first line levelling took place, but natural contours and run-off was respected and maintained. Cable trenches is up to 1m deep and was backfilled and compacted to standard in order to prevent erosion. The park area is maintained and kept clean from bushes/shrubs/trees re-growth by application of herbicides and hand clearing. See below locality of project site as well as the alignment of the overhead power lines:

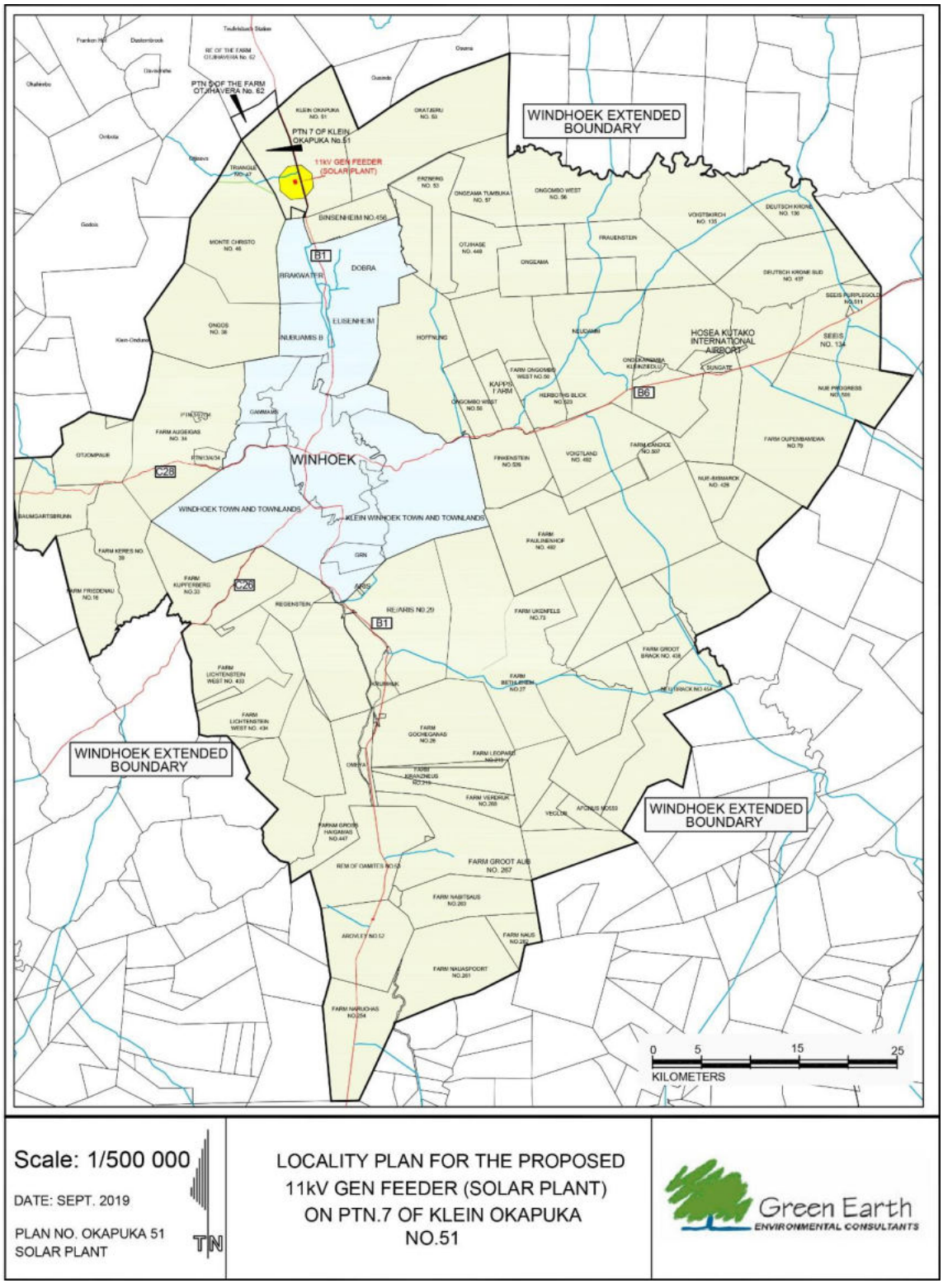


Figure 1: Location of Farm Klein Okapuka No. 51

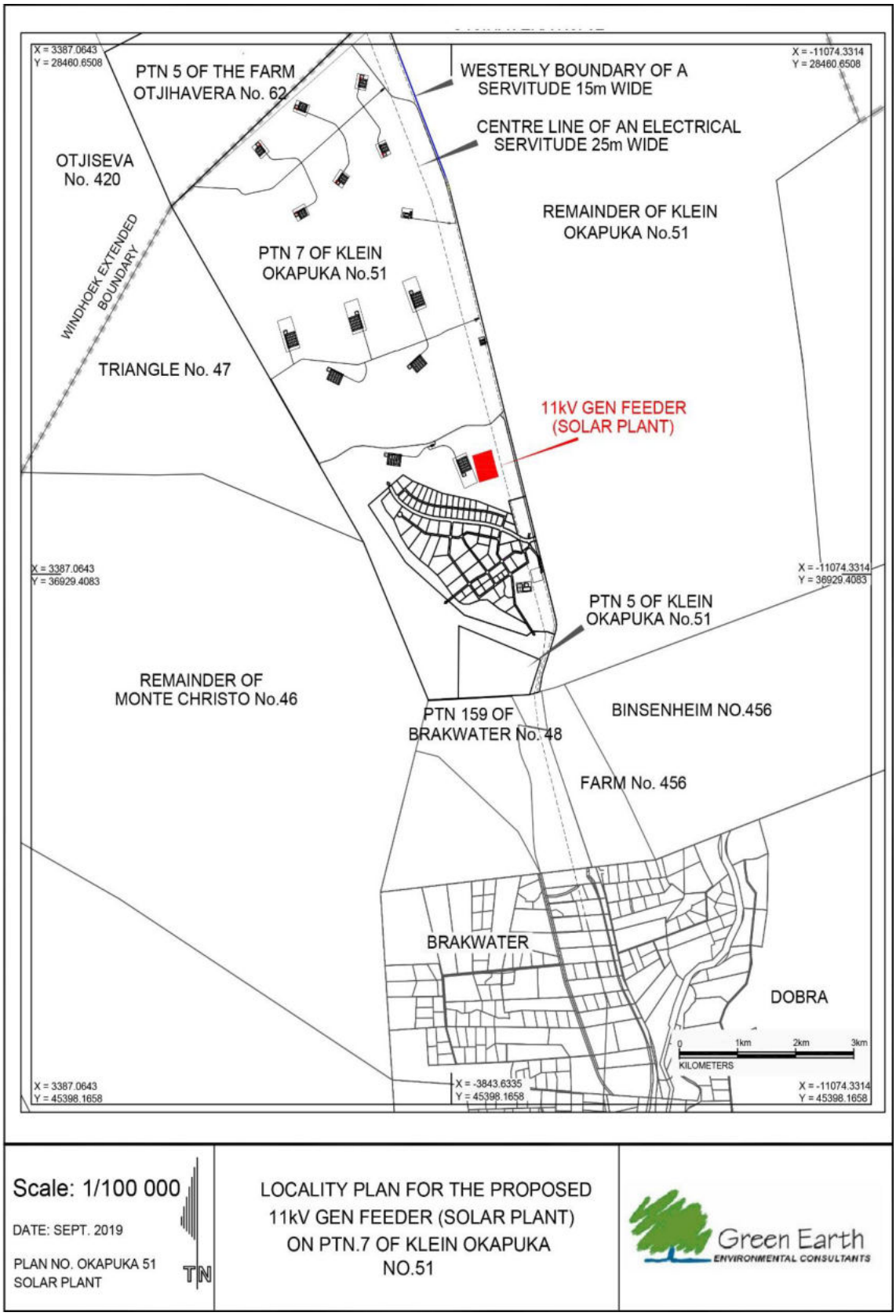


Figure 2: Project Site where Solar Plant will be located

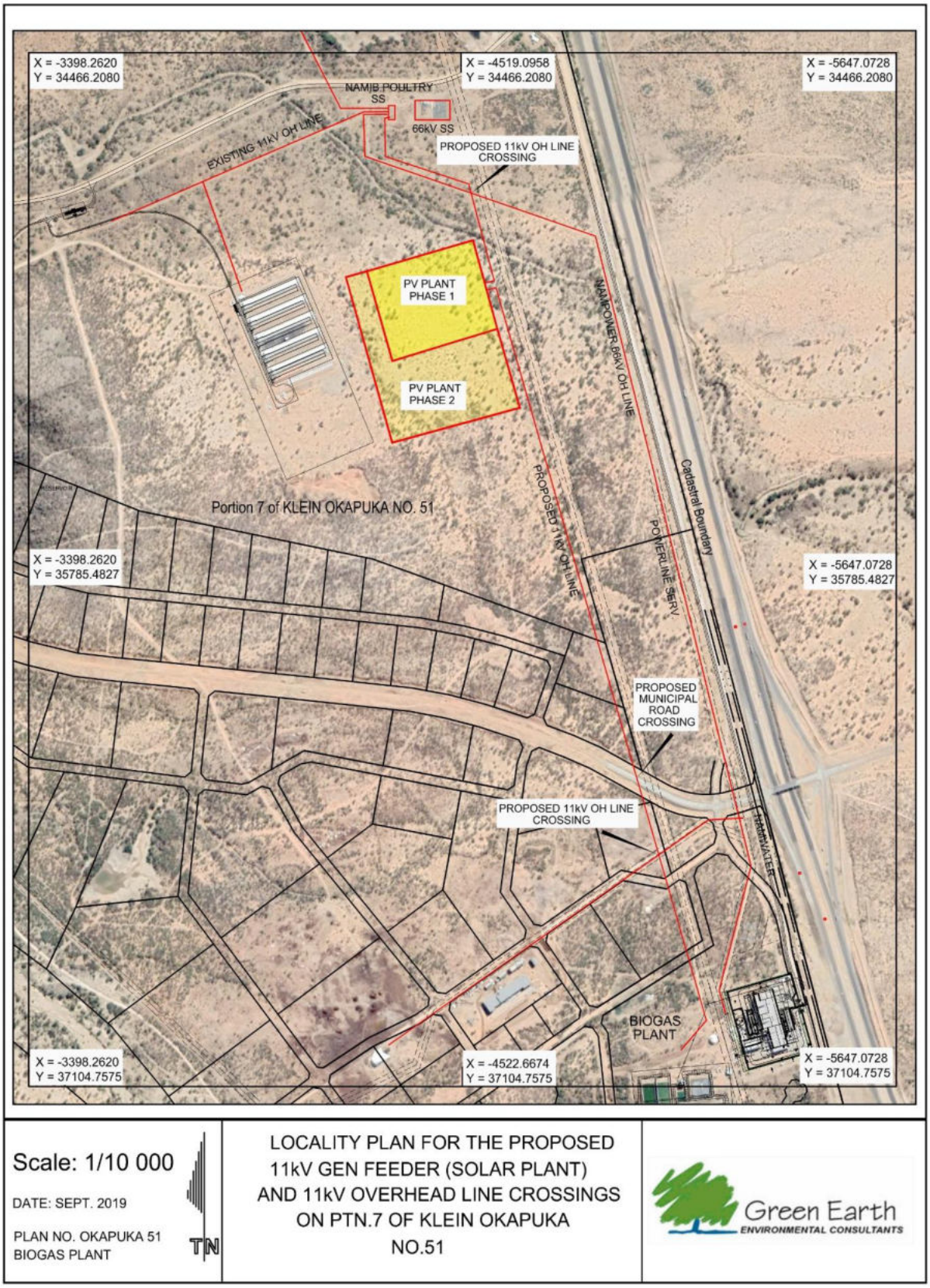


Figure 3: Solar Plant location with photo of area

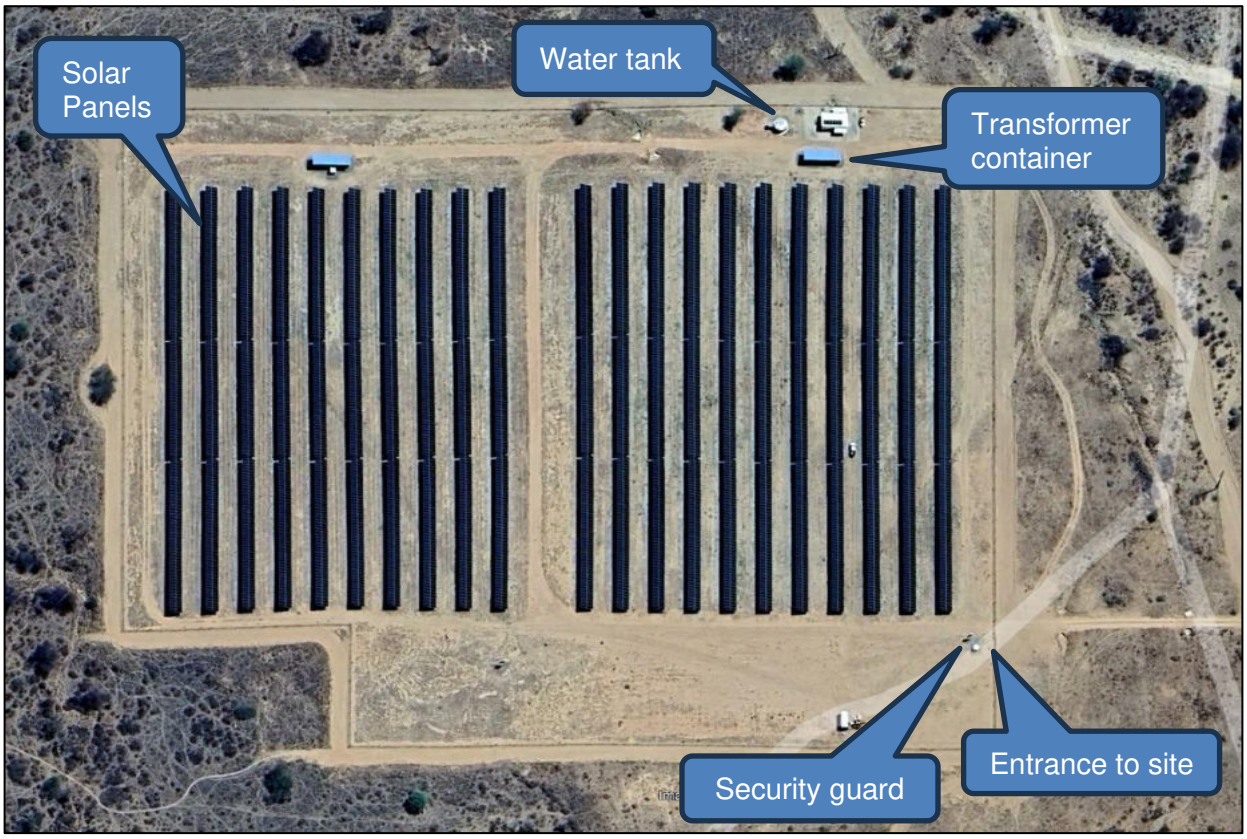


Figure 4: Current Google Image of the site

Figure 5: Solar panels on site

3.2. PV SOLAR ENERGY FACILITY

Typical solar panels capture light energy from the sun to generate electricity through a process known as the PV effect, where light energy energize electrons to produce electricity. Conventional PV technology generates electricity by converting solar radiation energy into a direct current which needs to be converted to an alternating current to connect to the grid *(Origins of Solar Energy, 2012)*.

4. CURRENT STATUS OF THE PROJECT

The Environmental Clearance expired on 14 April 2023 and must be renewed in order to allow the Proponent to comply with the Licensing Conditions, Third Party Agreements and to continue with Phase 2 of the project. See below *Photos* of Phase 1 of the site which is currently in operation:

Figure 6: Photos after construction of solar site

5. APPROVALS, LICENSES AND PERMITS OBTAINED

The following approvals have been obtained to allow the implementation of this project:

5.1. CITY OF WINHOEK – CERTIFICATE OF FITNESS

City of Windhoek issued a Fitness Certificate for the operations of Namib Poultry Industries – see copy below:

Department of Economic Development & Community Services

PO Box 59
80 Independence Avenue
WINDHOEK, NAMIBIA

Fax: (+264) 61 - 290 2331 • Tell: (+264) 61 - 290 2496 / 2603

CERTIFICATE OF FITNESS / REGISTRATION

REF NO: 2023/001570/260645

This is to certify that the premises as described hereunder is registered in terms of the General Health Regulations (G.N. 121 of 1969 as amended), Regulations Relating to the Registration of Businesses GN 202 of 2006, the Informal Trading Regulations 200 of 2007 and The Liquor Act, 1998 (Act No. 6 of 1998) for carrying on a business as stipulated.

TRADE NAME:	NAMIB POULTRY INDUSTRIES (PTY) LTD
ERF NO:	FARM KLEIN OKAPUKA NO 51
TOWNSHIP:	FARM KLEIN OKAPUKA NO 51
STREET NAME:	FARM KLEIN OKAPUKA NO 51 PORTION 7
OWNER/MANAGER:	ALLEN, JOHANN J Passport: A09916903
PO BOX:	20276 WINDHOEK
TELEPHONE:	264612901700
CITY:	WINDHOEK
MEDICALS:	680
NATURE:	ABATTOIR
RESTRICTED TO:	FULLY INTERGRATED BOILER FARMING AND A POULTRY PROCESSING ABATTOIR

CITY OF WINDHOEK
DEPARTMENT OF ECONOMIC DEVELOPMENT AND COMMUNITY SERVICES
CERTIFICATE OF FITNESS
28 FEB 2023
HEALTH AND ENVIRONMENT SERVICES DIVISION
P.O. Box 59, Windhoek

THIS CERTIFICATE EXPIRES ON: 2024-05-13

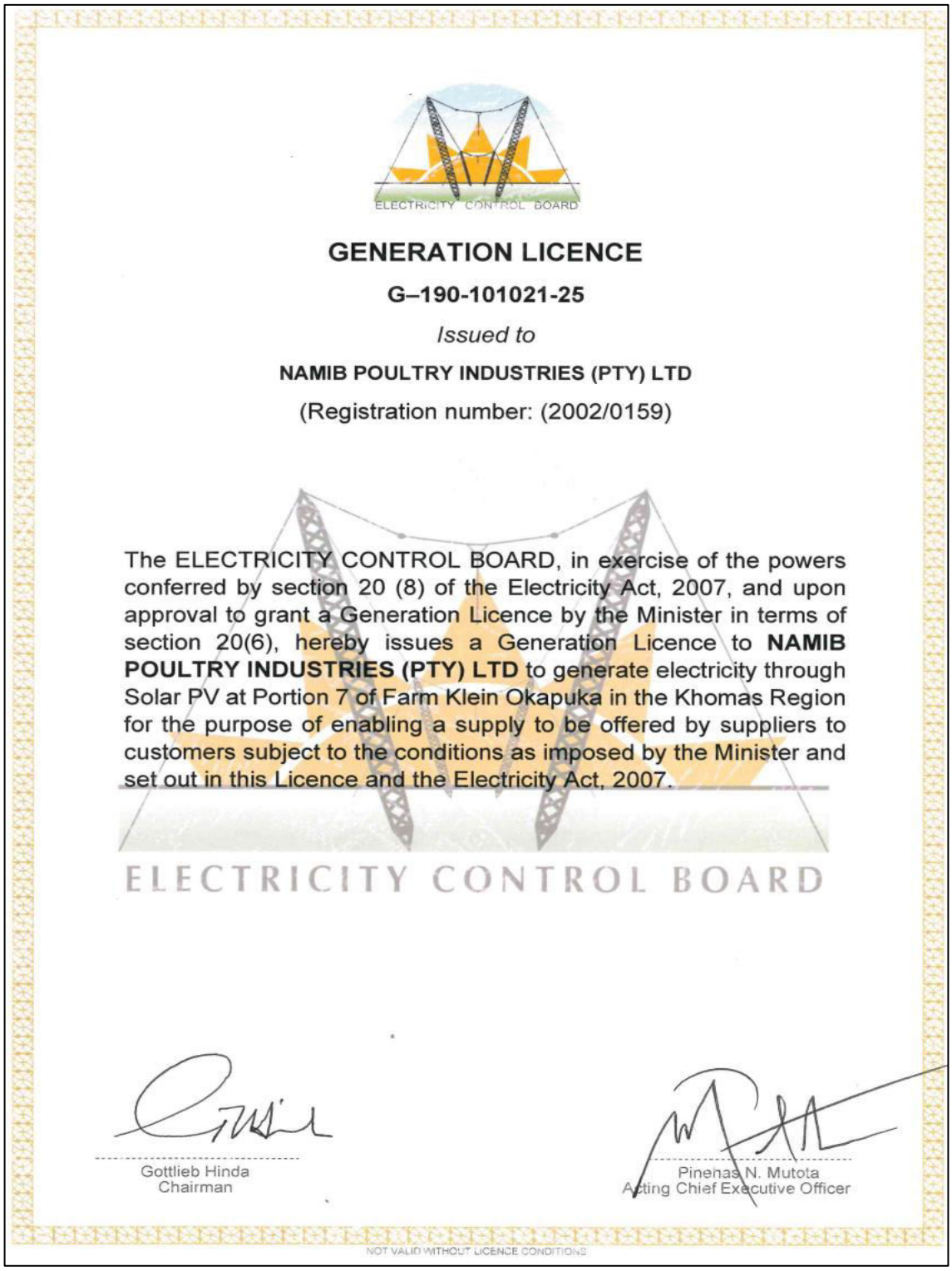
SECTION HEAD: BUSINESS REGISTRATION
DATE: 2023-02-28

MANAGER: HEALTH AND ENVIRONMENT SERVICES
DATE: 2023-02-28

All official correspondence must be addressed to the Chief Executive Officer

5.2. ELECTRICITY CONTROL BOARD LICENCE

The following Generation License was obtained from the Electricity Control Board:



ELECTRICITY CONTROL BOARD

GENERATION LICENCE

G–190-101021-25

Issued to

NAMIB POULTRY INDUSTRIES (PTY) LTD

(Registration number: (2002/0159)

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 **NAMIB POULTRY INDUSTRIES (PTY) LTD** to generate electricity through Solar PV at Portion 7 of Farm Klein Okapuka in the Khomas Region 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

Gottlieb Hinda
Chairman

Pinenas N. Mutota
Acting Chief Executive Officer

NOT VALID WITHOUT LICENCE CONDITIONS

The Generation License is valid for 25 Years.

Electricity Control Board
P.O. Box 2923, Windhoek, Namibia, ECB House, 35 Dr. Theo-Ben Gurirab Street
Tel: +264 61 374 300 | Fax: +264 61 374 305
E-mail: info@ecb.org.na | Website: www.ecb.org.na

Enquiries: G Nasima
Ref: 16/8

25 October 2021

Mr. Volker Rugheimer
Member of GS Fainsinger and Associates CC
Namib Poultry Industries (Pty) Ltd
P O Box 2142
32 Bismarck Street
WINDHOEK

Email: volker@gsfa.com.na

Dear Mr. Volker

APPROVAL OF A GENERATION LICENSE FOR NAMIB POULTRY INDUSTRY (PTY) LTD

The above-mentioned subject matter refers.

The Electricity Control Board (ECB) hereby informs Namib Poultry Industry (Pty)Ltd that your application for a generation license has been granted by the Minister of Mines and Energy.

The license fee payable is N$ 42,000.00 as per the attached invoice. The license will be issued upon payment. You are reminded of the requirement to fully adhere to all the conditions as outlined in the license conditions.

Namib Poultry Industry (Pty) Ltd must fully adhere to all the conditions as outlined in the license conditions, specifically section TPP1.3 of the conditions on total installed capacity of the plant, which is the rated nameplate capacity the plant. The construction of a plant exceeding the licensed installed capacity without an amendment of your licence will be a breach of the license conditions.

We wish you all the best with the implementation of the project.

For further information please contact our Licensing and Compliance Officer: Mr. Gideon Nasima via e-mail at gnasima@ecb.org.na or on telephone no. +264 61 374 300.

Yours sincerely,

Pinehas N. Mutota
ACTING CHIEF EXECUTIVE OFFICER

ELECTRICITY CONTROL BOARD
25 OCT 2021
PO Box 2923
WINDHOEK-NAMIBIA

5.3. NAMPOWER AGREEMENT

NamPower and Namib Poultry Industries signed an Embedded Co-generation Power Supply Agreement. See extract of the agreement below:

NamPower

Powering the Nation and beyond

POWER SUPPLY AGREEMENT
ADDENDUM 3

NAMIB POULTRY INDUSTRIES POWER SUPPLY
EMBEDDED CO-GENERATION PV PLANT (2.85MW)

(Hereinafter referred to as "this Agreement")

Entered into between

NAMIBIA POWER CORPORATION (PTY) LTD

AND

NAMIB POULTRY INDUSTRIES (PTY) LTD

(Hereinafter, each referred to as a "Party" and together referred to as the "Parties")

Namibia Power Corporation (Pty) Ltd
PO Box 2864, Windhoek, Namibia, NamPower Centre, 15 Luther Street
Tel: +264 61 205 4111
Fax: +264 61 232 805
Website address: www.nampower.com.na

1. The Parties to this Memorandum of Understanding ("this Agreement") are:

Namibia Power Corporation (Pty) Ltd, a limited liability company with company registration number 1960/2051 (hereinafter referred to as "NamPower") a company incorporated in terms of the laws of the Republic of Namibia, with its registered office at 15 Luther Street, Windhoek, Namibia and herein represented by
Mr. K.S. Haulofu in his capacity as **Managing Director**;

and

Namib Poultry Industries (Pty) Ltd with company registration number 2002/01159 (hereafter referred to as "the Customer") "), a company incorporated in terms of the laws of the Republic of Namibia, with its registered office at Klein Okapuka Farm, A1 Highway, Windhoek, Namibia and herein represented and duly authorised thereto by the Board of Directors, by **Mr. S.T. Ackermann** in his capacity as the **Financial Manager**

This Addendum to the Power Supply Agreement should be read in conjunction with the Power Supply Agreement signed on 16 November 2011, and subsequent signed Addendums 1 and 2. Only variations to the conditions as indicated in this Addendum will supersede the stipulations in the original Power Supply Agreement and Addendums 1 and 2.

RECITALS

WHEREAS, NamPower in accordance with licences issued to it, is in the business of the generation, transmission, supply, trading and to a limited extent distribution of electricity;

WHEREAS, the Customer applied to NamPower for power supply for the integration of a photovoltaic plant to its Namib Poultry Industries site at a capacity of 2.85MW;

WHEREAS, following the application, NamPower made an offer to the Customer, for a 2.85MW power supply at 11kV, which offer is dated 22 November 2021;

WHEREAS, the Customer has accepted NamPower's offer dated 22 November 2021, Financial Option 2;

Signed by the Customer	Signed by NamPower
Witness	Witness
Windhoek 7/12/2021	Windhoek 9/12/21
Place Date	Place Date

5.4. OPERATION & MAINTENANCE AGREEMENT NEC

The PV Plant is operated by Namibian Engineering Corporation (NEC) under an Operation & Maintenance Agreement. See extract of the agreement below:

NAMIBIAN ENGINEERING CORPORATION
Power & Pumps

NEC Power & Pumps (Pty) Ltd.

Directors: J. Hansen (Chairman)# H.Maier J de Klerk Olga Hansen #Swedish
CEO: N.T. Brückner

Reg. No. 2010/0693
P O Box 5052
Windhoek
Namibia 9000
Tel: (264) 61 – 23 6720
Fax: (264) 61 - 23 2673
necpp@nec-namibia.com

21 Joule Street
Windhoek
Republic of Namibia

Operation & Maintenance agreement – by NEC

Document Name:	O&M Agreement – ***NPI Solar park, Brackwater, Windhoek***
Project Reference	SGS 411 57
Project Filing	Q2020-09-2919
Client Name:	**Namibian Poultry Industries (NPI) Pty (Ltd)**
Installed / Commissioned by:	NEC Power and Pumps Pty (Ltd)

6 300 kWp Solar park, on Ideematec tracker. Constructed by NEC in 2017, Aussenkehr, Namibia

Page 1

www.nec-namibia.com

NEC's responsibilities as per the agreement is listed below:

4. NEC Agreement responsibilities

Under this agreement NEC will perform the following tasks to ensure the efficient operation of the Solar Park system:

1. **Professional PV Module Cleaning** from bird mist, dust and dirt - 5 times a year – rain will assist cleaning during parts of the year (Dec-April)
2. **Vegetation management** – Removal and / Or trimming of unwanted bush and grass which could affect the performance of the trackers and solar yield, as well as pose a risk for damage
3. **Clean inverters** on a 3 month basis, or when required by Pyranometer/Irradiation sensor indication
4. **Check cabling** a 3 month basis – AC/DC/MV/Communication
5. **Inspect Tracker system** on a monthly basis
6. On-site Solar measurements and data capturing, yield analysis and KPI calculations
7. Provide **monthly reports** on the system performance and output to the Client as well as an annual report to summarise Solar Park events for the particular year
8. **Response Time Guarantee:**
   - Fault Class 1 – Entire plant is off, with 100% power loss – **Max 4 daytime hours**
   - Fault Class 2 – More than 30% power loss or more than 900kWp down – **Max 12 hours**
   - Fault Class 3 – 0 to 30% power loss – **Max 24 hours**
9. **Maintenance implementation plan optimisation**
10. Repair / replacement of damaged items by NEC's staff for work done under the O&M Agreement will be covered by NEC Public Liability Cover which is attached to this document.
11. **Additional cleaning cycles if required to meet the performance ratio and therefore the predicted yield accurate to 95% of the Solar GISreport, will be carried out by NEC** at no cost to the client. **Should the client request additional cleaning cycles** over and above the performance ratio already reached (even though excessive cleaning of the panels is also not advisable) this will be for the clients account.
12. To allow access of data and monitoring reports **NPI has at all times their own dedicated access (parallel access to data).**
13. **NEC will provide logbooks of bi-weekly site inspections** – handed in with month report

5. O&M exclusions attributable to NEC

Exclusions under this agreement:

a) NEC will not be responsible for the supply of water on the park and therefore remains in the scope of the Client. About 35m3 of Water will be required per cleaning cycle of the PV modules. The Abeco tank should therefore be kept full over the year.
b) Insurance claim of equipment (Panels, Inverters, Tracker components: MCUs, controllers, sensors, Meteocontrol sensors and Meteocontrol equipment). Should NEC staff damage equipment during installation or service, **it will be replaced under NEC Insurance.**
c) NEC will not be Liable for security being absent, resulting in damage, harm or theft on the park
d) NEC will not be Liable for Extraordinary events or failure caused by Force Majeure
e) Call outs that turn out to not be caused by the Solar park or tracker failure will be billed to the client separately, as per call out fee below.
f) NEC will not be liable for loss of communication due to the Network provider – Communication to the park will be via Client network. And via Nampower integrated SCADA, with a direct link only to NamPower.

5.5. ENVIRONMENTAL CLEARANCE CERTIFICATE

The current Environmental Clearance Certificate was issued by the Ministry of Environment, Forestry and Tourism on 14 April 2020 which expired on 14 April 2023. See below a copy of the current Certificate:

ECC – 00598 Serial: gIWGej598

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
Namib Poultry Industries (Pty) Ltd

P O Box 20276, Windhoek, Portion 7 of Farm Klein Okapuka No. 51, Khomas Region

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY

Construction of a 4 Megawatt Photovoltaic Plant and overhead lines on a portion of portion 7 of farm Klein Okapuka no. 51, Khomas Region

ENVIRONMENTAL COMMISSIONER

Issued on the date: 2020-04-14

Expires on this date: 2023-04-14

(See conditions printed over leaf)

Reduce Reuse NAMIBIA TRASH

The purpose of this submission is to renew the Environmental Clearance for a further 3 years to allow the Proponent to continue with the implementation of the project.

6. BULK SERVICES AND INFRASTRUCTURE PROVISION

The site has the following bulk services:

6.1. ACCESS AND INTERNAL ROADS

The project site is located on Portion 7 of Farm Klein Okapuka No. 51, about 30 km north of Windhoek directly west of the B1 Highway to Okahandja. The project site access is to the western side of the B1 Highway. The access road is a gravel road leading from the newly constructed intersection with the B1 Highway onto the site and connecting all the operations and activities of Namib Poultry. The gravel road is maintained by Namib Poultry. The existing roads are sufficient for the purpose of the operations and no new roads have to be created on site. See below entrance gate to solar plant site:

Figure 7: Entrance to Solar Plant

6.2. WATER SUPPLY

Water requirements to the site are supplied from 2 sources:

- By **NamWater** via a pipeline from the main water line which supplies water from the Von Bach Dam to Windhoek. The initial agreement between Namib Poultry and NamWater made provision for an allocation of 45 000m³/month or 540 000m³/year. Currently NPI's average monthly water consumption amounts to 28 500m³/month.
- About 120m³/day is extracted from **boreholes**.

The savings between the NamWater allocation and current usage are achieved through the onsite treatment of water and the reuse thereof. Currently 96% of the water used in the meat processing plant is reclaimed. The existing water sources are enough to cater for the requirements of the PV Plant.

Figure 8: Water tank on site

6.3. ELECTRICITY RETICULATION

Electricity is obtained from NamPower with backup generators that are used during power failures. The proposed PV Plant is used to supplement the NamPower supply. The Proponent also intends to construct and operate a biodigester to generate biogas from the chicken manure generated from the chicken rearing operations which will supplement their electrical requirements. An EIA and EMP for the proposed biodigester have already been submitted to the MEFT for consideration and to obtain an Environmental Clearance.

Figure 9: Power storage Transformer / Container

Figure 10: Power line

6.4. SEWAGE TREATMENT AND DISPOSAL

Household sewerage from people working on the PV Plant is collected from the ablution facilities in a sealed underground tank. This sewerage is then collected in a tanker and taken to the wastewater treatment plant for treatment and recycling to ensure reuse of more water. A "honey sucker" collects the sewage and transport it to the treatment plant.

6.5. SOLID WASTE DISPOSAL/REFUSE REMOVAL

Construction waste was disposed of at approved City of Windhoek sites. Household waste generated at the PV Plant is sorted into the different recyclables and stored on site and then collected on site by an approved private waste management company (Rent-A-Drum) from where it is taken to their recycling facility for processing and disposed of at the approved waste disposal/landfill site.

6.6. STORMWATER MANAGEMENT

The natural flow of storm water and drainage was minimally disturbed, and the natural flow accommodated where possible. Provision was made for the accommodation of surface water/stormwater management as it may endanger infrastructure.

6.7. FIRE PROTECTION

The Proponent has put in the necessary fire protection infrastructure / extinguishers as per requirements. A specialist Fire Protection Specialist was contracted to introduce a proper fire protection plan with the required infrastructure and to oversee the annual auditing and maintenance of the infrastructure.

Figure 11: Fire extinguisher

7. ASSUMPTIONS AND LIMITATIONS

It is assumed that the information provided by the proponent (Namib Poultry (Pty) Ltd), GSFA – G.S. Fainsinger & Associates – Mr Volker Rugheimer (the Consulting Engineers appointed by NPI) and other relevant parties are accurate. Alternative sites were not evaluated as the proposed site is the site owned by the proponent and because the site is also located in close proximity of the Namib Poultry Substation into which the electricity generated by the PV Plant will be feed. The site was visited several times and any happenings after this are not mentioned in this report. (The assessment was based on the prevailing environmental conditions and not on future happenings on the site.) However, it is assumed that there will be no significant changes to the proposed project, and the environment will not adversely be affected between the compilation of the assessment and the implementation of the proposed activities.

8. AFFECTED NATURAL AND SOCIAL ENVIRONMENT

8.1. BIODIVERSITY AND VEGETATION

The project site is located in the Tree and Scrub Savanna and Nama Karoo Biome. The Windhoek (including Farm Okapuka) area in general contains a large diversity of annual and perennial grass, it is estimated that there is up to 101 grass species. Four of these species are endemic namely *Eragrostis omahekensis, Eragrostis scopelophila, Pennisetum foermeranum* and *Setaria finite* (*Mannheimer & Curtis, 2009*). However, these species are not present on the specific site as it has been mostly cleared from

vegetation. The natural characteristics of the site namely the vegetation clearance and the destruction of habitats is expected to further on have a low impact on the environment. See map below:

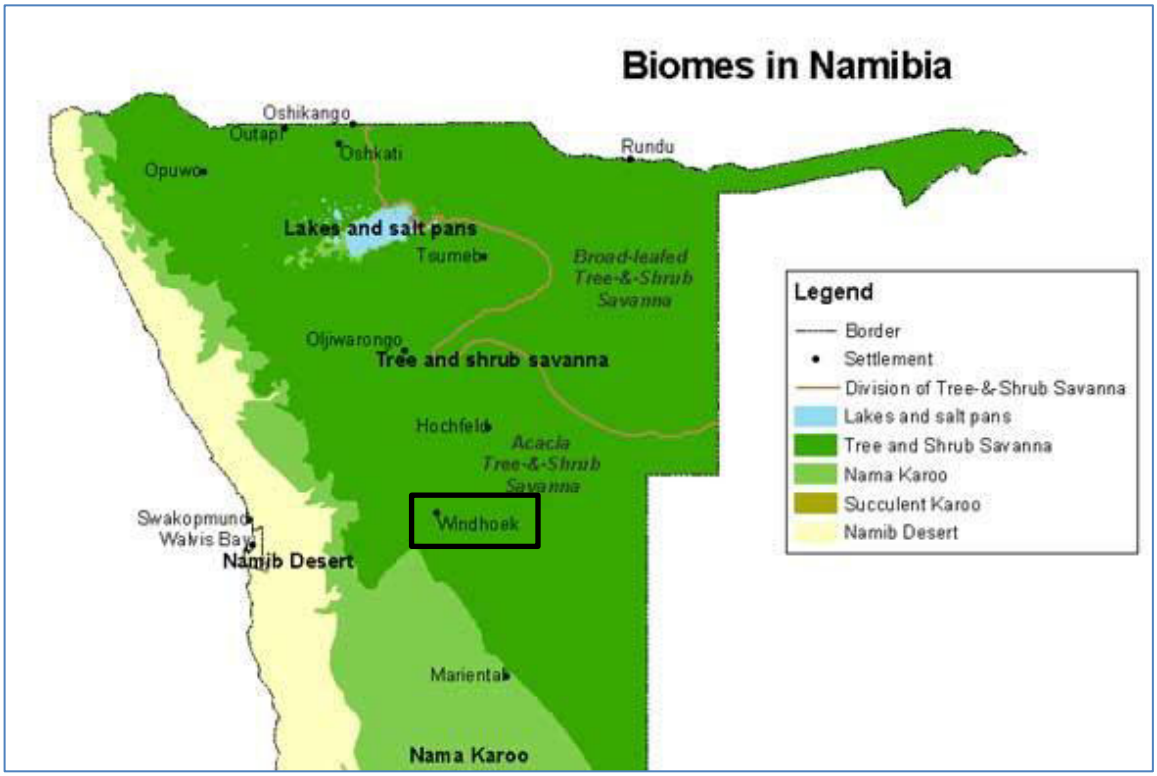


Figure 12: Biomes in Namibia (Atlas of Namibia, 2002)

Figure 13: Trees left on site

CONCLUSION AND IMPACT

The development had a low impact on vegetation, shrubs and trees.

8.2. SENSE OF PLACE

The proposed development did not have a large/negative impact on the sense of place in the area. An untidy or badly managed site can detract from the ecological well-being and individuality of the area. Unnecessary disturbance to the surroundings could be caused by poorly planned or poorly managed operational activities. The project site should be kept neat and clean where possible. Vegetation should not be removed or harmed if not necessary since it covers topsoil which prevents erosion. Noise and dust should be limited because of the neighbouring activities.

CONCLUSION AND IMPACT

The impact on the sense of place is low.

9. IMPACT ASSESSMENT AND EVALUATION

The Environmental Impact Assessment Renewal sets out potential positive and negative environmental impacts associated with the project site. The following assessment methodology will be used to examine each impact identified, see *Table* below:

Table 2: Impact Evaluation Criterion (DEAT 2006)

Criteria	Rating (Severity)	
Impact Type	+	Positive
	O	No Impact
	-	Negative
Significance of impact being either	L	Low (Little or no impact)
	M	Medium (Manageable impacts)
	H	High (Adverse impact)

Probability:	Duration:
5 – Definite/don't know	5 - Permanent
4 – Highly probable	4 – Long-term (impact ceases)
3 – Medium probability	3 – Medium term (5 – 15 years)
2 – Low probability	2 – Short-term (0 – 5 years)
1 – Improbable	1 - Immediate
0 - None	
Scale:	**Magnitude:**
5 – International	10 – Very high/don't know
4 – National	8 - High
3 – Regional	6 - Moderate
2 – Local	4 - Low
1 – Site only	2 - Minor
	0 - None

The impacts on the receiving environment are discussed in the paragraphs below:

9.1. IMPACTS DURING THE OPERATIONAL PHASE

9.1.1. ECOLOGICAL IMPACTS

Staff and visitors should only make use of walkways and existing roads to minimise the impact on vegetation. Minimise the area of disturbance by restricting movement to the designated working areas during maintenance and drives.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ecology Impacts	-	1	2	4	2	M	L

9.1.2. DUST POLLUTION AND AIR QUALITY

Vehicles transporting goods and staff will contribute to the release of hydrocarbon vapours, carbon monoxide and sulphur oxides into the air. Possible release of sewer

odour, due to sewer system failure of maintenance might also occur. All maintenance of bulk services and infrastructure at the project site has to be designed to enable environmental protection.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Dust & Air Quality	-	2	2	4	4	M	L

9.1.3. CONTAMINATION OF GROUNDWATER

Spillages might also occur during maintenance of the sewer system. This could have impacts on groundwater especially in cases of large sewer spills. Proper containment should be used in cases of sewerage system maintenance to avoid any possible leakages. Oil and chemical spillages may have a heath impact on groundwater users. Potential impact on the natural environment from possible polluted groundwater also exists.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Groundwater contamination	-	2	2	4	2	M	L

9.1.4. GENERATION OF WASTE

Household waste from the activities at the site and from the staff working at the site is generated. This waste is collected, sorted to be recycled and stored in on site for transportation and disposal at an approved landfill site.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Waste Generation	-	1	2	2	2	M	L

9.1.5. FAILURE IN RETICULATION PIPELINES

There may be a potential release of sewage, stormwater or water into the environment due to pipeline/system failure. As a result, the spillage could be released into the environment and could potentially be health hazard to surface and groundwater. Proper reticulation pipelines and drainage systems should be installed. Regular bulk services infrastructure and system inspection should be conducted.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Failure of Reticulation Pipeline	-	1	1	4	2	M	L

9.1.6. FIRES AND EXPLOSIONS

There should be sufficient water available for firefighting purposes. Ensure that all fire-fighting devices are in good working order and are serviced. All personnel have to be trained about responsible fire protection measures and good housekeeping such as the removal of flammable materials on site. Regular inspections should be carried out to inspect and test firefighting equipment by the contractor.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Fires and Explosions	-	2	1	4	2	M	L

9.1.7. HEALTH, SAFETY AND SECURITY

The safety, security and health of the labour force, employees and neighbours are of great importance, workers should be orientated with the maintenance of safety and health procedures and they should be provided with PPE (Personal Protective Equipment). Workers should be warned not to approach or chase any wild animals occurring on the site. No open flames, smoking or any potential sources of ignition should be allowed at the project location. Signs such as 'NO SMOKING' must be prominently displayed in parts where inflammable materials are stored on the premises.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Safety & Security	-	1	2	4	2	M	L

9.2. CUMULATIVE IMPACTS

These are impacts on the environment, which results from the incremental impacts of the construction and operation of the development when added to other past, present, and reasonably foreseeable future actions regardless of which person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. In relation to an activity, it means the impact of an activity that in it may not become significant when added to the existing and potential impacts resulting from similar or diverse activities or undertakings in the area.

Possible cumulative impacts associated with the proposed construction include: sewer damages/maintenance, uncontrolled traffic and destruction of the vegetation or the environment. These impacts could become significant especially if it is not properly supervised and controlled. This could collectively impact on the environmental conditions in the area. Cumulative impacts could occur in both the operational and the construction phase.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Cumulative Impacts	-	2	3	4	2	M	L

10. CONCLUSION

In line with the Environmental Management Act (No 7 of 2007), *Green Earth Environmental Consultants* have been appointed to conduct an Environmental Impact Assessment Renewal **for the 4 Megawatt Photovoltaic Plant (PV Plant) and Overhead Power Lines on a Portion of Portion 7 of Farm Klein Okapuka No. 51, Khomas Region**.

Negative impacts that can be associated with the development are most likely to include: production of solid waste, dust emissions, atmospheric emissions, noise pollution, movement of soils, increased wastewater generation, the disruption of groundwater from the foundation or other structures, can result in an increase in traffic on the nearby roads and there can be an impact on the occupational health and safety of workers. However, this project is believed to be an asset to this area. Facilities and employment were made available for which there is a need.

After assessing all information available on this project, *Green Earth Environmental Consultants* believe that the development was required.

11. RECOMMENDATION

It is therefore recommended that the Ministry of Environment, Forestry and Tourism through the Environmental Commissioner support and approve the Environmental Clearance Renewal **for the 4 Megawatt Photovoltaic Plant (PV Plant) and Overhead Power Lines on a Portion of Portion 7 of Farm Klein Okapuka No. 51, Khomas Region** and for the following listed activities:

ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES

1. The construction of facilities for -

(a) the generation of electricity;

(b) the transmission and supply of electricity;

LIST OF REFERENCES

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Soil Conservation Act, 1969. *Office of the Prime Minister*. Windhoek. Namibia, pp. 1 – 14.

Water Resource Management Act, 2004. *Office of the Prime Minister*. Windhoek. Namibia, pp. 6 – 67.

APPENDIX A: CURRICULUM VITAE OF CHARLIE DU TOIT

1. Position:	Environmental Practitioner	
2. Name/Surname:	Charl du Toit	
3. Date of Birth:	29 October 1960	
4. Nationality:	Namibian	

5. Education:	Name of Institution	University of Stellenbosch, South Africa
	Degree/Qualification	Hons B (B + A) in Business Administration and Management
	Date Obtained	1985-1987
	Name of Institution	University of Stellenbosch, South Africa
	Degree/Qualification	BSc Agric Hons (Chemistry, Agronomy and Soil Science)
	Date Obtained	1979-1982
	Name of Institution	Boland Agricultural High School, Paarl, South Africa
	Degree/Qualification	Grade 12
	Date Obtained	1974-1978

6. Membership of Professional Association:	EAPAN Member (Membership Number: 112)	

7. Languages:		Speaking	Reading	Writing
	English	Good	Good	Good
	Afrikaans	Good	Good	Good

8. Employment Record:	From	To	Employer	Position(s) held
	2009	Present	Green Earth Environmental Consultants	Environmental Practitioner
	2005	2008	Elmarie Du Toit Town Planning Consultants	Manager
	2003	2005	Pupkewitz Megabuild	General Manager
	1995	2003	Agra Cooperative Limited	Manager Trade
	1989	1995		Chief Agricultural Consultant

1985	1988	Namibia Development Corporation Ministry of Agriculture	Agricultural Researcher

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

_____

Charl du Toit

APPENDIX B: CURRICULUM VITAE OF CARIEN VAN DER WALT

1. **Position:** Environmental Consultant
2. **Name/Surname:** Carien van der Walt
3. **Date of Birth:** 6 August 1990
4. **Nationality:** Namibian
5. **Education:**

Institution	Degree/Diploma	Years
University of Stellenbosch	B.A. (Degree) Environment and Development	2009 to 2011
University of South Africa	B.A. (Honours) Environmental Management	2012 to 2013

6. **Membership of Professional Associations:**

EAPAN Member (Membership Number: 113)

7. **Languages:**

Language	Speaking	Reading	Writing
English	Good	Good	Good
Afrikaans	Good	Good	Good

8. **Employment Record:**

From	To	Employer	Positions Held
07/2013	Present	Green Earth Environmental Consultants	Environmental Consultant
06/2012	03/2013	Enviro Management Consultants Namibia	Environmental Consultant
12/2011	05/2012	Green Earth Environmental Consultants	Environmental Consultant

9. **Detailed Tasks Assigned:**

Conducting the Environmental Impact Assessment, Environmental Management Plan, Public Participation, Environmental Compliance and Environmental Control Officer

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engage.

_____

Carien van der Walt

APPENDIX C: ENVIRONMENTAL MANAGEMENT PLAN