

BASIC ASSESSMENT PROCESS

PROPOSED DEVELOPMENT OF A 100MW PHOTOVOLTAIC (PV) SOLAR FACILITY AND ASSOCIATED INFRASTRUCTURE ON FARM VARSPUTS 564 NEAR SPRINGBOK IN NAMA KHOI LOCAL MUNICIPALITY, NORTHERN CAPE

BACKGROUND INFORMATION DOCUMENT

1. INTRODUCTION

Liu Energy (Pty) Ltd proposes to develop and operate a facility for generation of renewable energy and associated infrastructure on Farm Varsputs 564 near Springbok, Nama Khoi Municipality, in the Northern Cape – refer to the attached Locality Map. The development and operation of facilities for generation of renewable energy is a listed activity in terms of the Environmental Impact Assessment (EIA) Regulations of 2014 published under the National Environmental Management Act (Act 107 of 1998) as amended – herein referred to as NEMA – and require an environmental authorisation.

The purpose of this document is to provide relevant information about the proposed development and the Environmental Impact Assessment (EIA) process to be followed. The document further provide Interested and Affected Parties (IA&Ps) with an opportunity to register on the I&AP database and to participate effectively in the environmental assessment process.

The information presented in the document include:

- i. Project Description
- ii. Project Location
- iii. Basic Assessment Process
- iv. Public Participation Process
- v. Registering as an Interested and Affected Party

2. PROJECT DESCRIPTION

The facility for renewable energy is designed for capacity of 100MW electricity output from solar photovoltaic panels. The project footprint is approximately 300 hectares and includes the following associated infrastructure:

- Solar panels in a number of rows
- Inverter stations to convert direct current (DC) to alternate current (AC)
- 100MWh battery storage facility
- Internal substation to receive, convert and step-up electricity
- Internal road and paths
- Operation and maintenance building, including control room
- Septic tanks to service ablution activities
- Perimeter fencing for the solar PV site

The solar plant will be connected to the Groeipunt Substation which is approximately three (3) kilometers away, refer to the attached Locality Map.

3. PROJECT LOCATION

The proposed project will be located at the following locality:

Farm: Varsputs 564
Nearest town: Springbok
Local Municipality: Nama Khoi
District Municipality: Namakwa District Municipality
Province: Northern Cape

GPS Coordinates:

Latitude: 29° 28' 48.50"S;
Longitude: 18° 18' 26.70" E

4. ENVIRONMENTAL ISSUES IDENTIFIED

The proposed site falls within a Critical Biodiversity Area 2 and Ecological Support Area. A Screening Report was developed using the Department of Environment, Forestry and Fisheries (DEFF) screening tool. The following environmental issues will be further investigated during the impact assessment process:

- Ecological Impacts
- Avifauna Impacts
- Socio-Economic Impacts
- Safety and Security

5. PROCESS

5.1. Purpose of Environmental Assessment

The EIA regulations promulgated in terms of NEMA prescribe the procedures that must be followed in the consideration, investigation, assessment, and reporting of activities that have been identified. The regulations further aim to provide the competent

authority with adequate information to make decisions that will ensure that activities which may have an unacceptable negative impact on the environment are not authorised, and activities that are authorised are undertaken in such a manner that the environmental impacts are managed to acceptable levels.

4 Degrees has been appointed to act as the independent Environmental Assessment Practitioner (EAP) to conduct an Environmental Impact Assessment (EIA) and related processes for the purpose obtaining the required authorisation for the project.

5.2. Listed Activities

The proposed project is a listed activity in terms of the Environmental Impact Assessment (EIA) Regulations of 2014 promulgated under the National Environmental Management Act (Act 107 of 1998) as amended.

The EIA regulations and listed activity notice requires that an environmental authorization be obtained from the competent authorities prior to commencement of the project. Listed activities for the proposed project are:

- **Listing Notice 1, Activity 11**
 - o Development of facilities or infrastructure for the transmission or distribution of electricity outside of urban areas or industrial complexes with a capacity of more than 33kV but less than 275kV
- Listing Notice 1, Activity 28
 - o Residential, mixed, retail, commercial, industrial or institutional development where such land was for agriculture on or after 01

April 1998, where such development occur outside urban area where total land to be developed is bigger than one (1) hectare

- **Listing Notice 2, Activity 1**
 - o Development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 Megawatts or more
- **Listing Notice 2, Activity 15**
 - o Clearance of an area of 20 ha or more of indigenous vegetation
- **Listing Notice 3, Activity 12**
 - o The clearance of an area of 300sqm or more of indigenous vegetation within a critical biodiversity area identified in bioregional plans

5.3. Environmental Assessment Process

In terms of the EIA Regulations, a Basic Assessment Process should be undertaken for listed activities in Listing Notice 1 and 3. Furthermore, procedures to be followed in applying for environmental authorisation for large scale wind and solar photovoltaic energy development activities identified in terms of Section 24(2)(a) of NEMA when occurring in geographical areas of strategic importance were published on the 16 February 2018.

In terms of the procedures, when an activity triggers activity 1 of Listing Notice 2 of the EIA Regulations, the application must follow a Basic Assessment Process where the entire proposed facility falls within the Renewable Energy Development zone (REDZ). The

proposed development falls within the Springbok REDZ, therefore a Basic Assessment Process, as illustrated below, will be followed.



Figure 1: Simplified Basic Assessment Process

6. PUBLIC PARTICIPATION PROCESS

The Public Participation Process (PPP) is important to the environmental assessment process to provide an opportunity for Interested and Affected Parties (I&APs) to provide input on the proposed project. The public is encouraged to register as I&APs for the proposed project and submit comments in writing to the Environmental Assessment Practitioner (EAP) at the details listed below.

Registered I&APs will be informed of:-

- Developments at various stages of the environmental assessment process;
- Availability of Draft Basic Assessment for review;
- Authority decision.

Interested and Affected Parties (I&APs) are invited to register on the I&AP database at the following details:

Details of the EAP: Ms. Reetsang Mothibi

4 Degrees Consulting

Tel: 011 238 6300

Tel: 081 412 2159

Cell: 084 440 1122

Email 1: reetsang@4degrees.co.za

Email 2: projects@4degrees.co.za

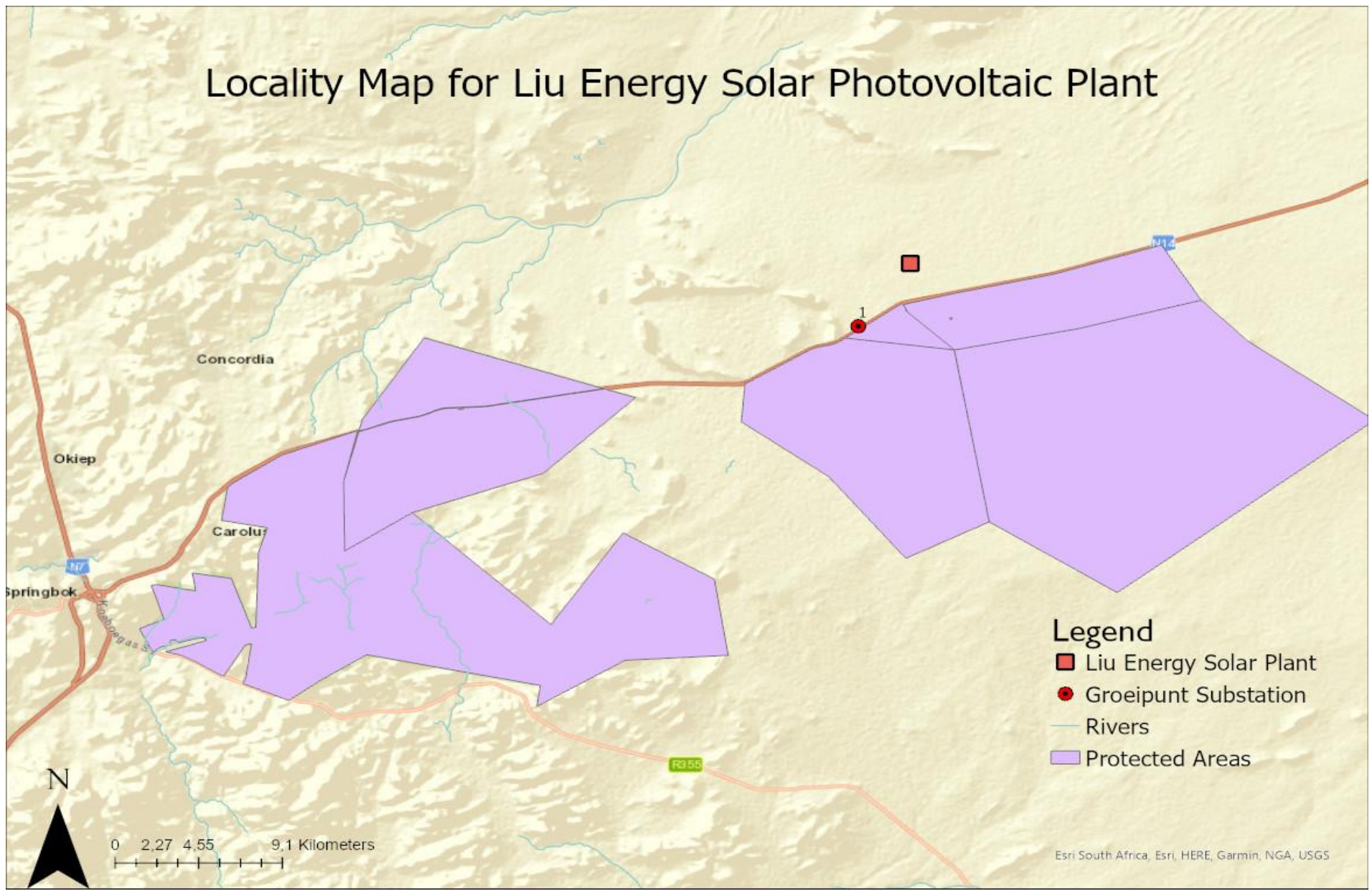


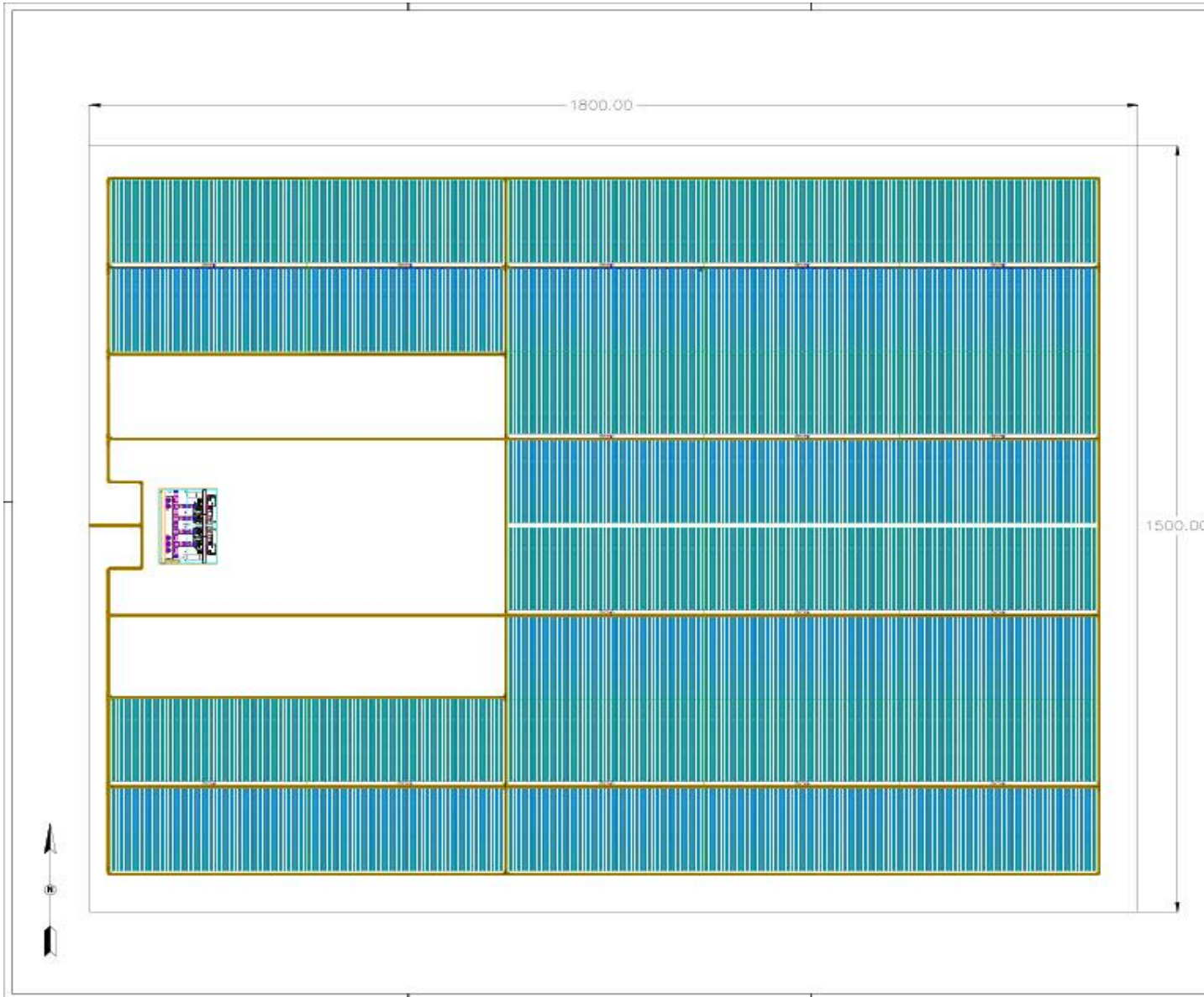
Figure 2: Example of Solar Panels to be used



Figure 3: Example of Solar Panels to be used

Locality Map for Liu Energy Solar Photovoltaic Plant





PLANT DETAILS

FENCE	CHAIN LINK AS MINIMUM
FENCE LENGTH	6000 m
AREA	1800X1500m
HECTARE	27ha
PV MODULE TYPE	SOLAR, BIFACIAL
PV MODULE POWER	635 / 640 Wp
PV MODULE DIMENSIONS	2.384 x 1.303 x 0.035 m
INVERTER MANUFACTURER & TYPE	SUNGROW, CENTRAL INVERTER
INVERTER MODEL	3.125MW
INVERTER RATING 50°C 40°C	3.125 MVA 3.473 kVA
SYSTEM TYPE	SINGLE-AXIS TRACKING
SYSTEM VOLTAGE	1,500 V
PV TABLE CONFIGURATION	SP
PITCH	7 m
ROW TO ROW CLEARANCE	~3.6 m
AZIMUTH	0°
ROAD WIDTH (MINOR MAJOR)	3 m 4 m
MODULES IN SERIES PER STRING	30
TOTAL NO. OF PV STRINGS	8144
TOTAL NO. OF PV MODULES	384 320
TOTAL NO. OF INVERTERS	32
TOTAL NO. OF PCLs	32
PLANT DC POWER (25°C)	117.4 MWp
PLANT AC POWER (25°C)	111.526 MVA
PLANT AC POWER (50°C)	100 MVA
DC/AC RATIO	1.174

NOTES

1. THE EQUIPMENT AND DIMENSIONS USED FOR THIS PRELIMINARY PV ARRAY DESIGN IS INDICATIVE ONLY. THE EPC CONTRACTOR SHALL SELECT THE APPROPRIATE EQUIPMENT AND SIZE THE PLANT ACCORDINGLY.

100MWac
LAYOUT PLAN
PHOTOVOLTAIC FIELD

A			FIRST ISSUE		
REVISION	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
DESIGNER	CLIENT				
DOCUMENT TITLE					
LAYOUT PLAN					
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<small>GENERAL NOTE</small> THIS DRAWING IS FOR REFERENCE ONLY AND SHOULD NOT BE USED FOR ENGINEERING OR FINAL CONSTRUCTION PURPOSES.					

PICTURES FROM THE SITE VISIT

