Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

FINAL SCOPING REPORT

DEA Reference number:
14/12/16/3/3/2/1035

November 2017

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Prepared for:
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REPORT DETAILS

Title:	**Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province: SCOPING REPORT**
Prepared for:	This Scoping Report forms part of a series of reports and information sources that are being provided during the Environmental Impact Assessment (EIA) Process for the proposed Skeerhok PV 3 project. In accordance with the EIA Regulations, the purpose of the Scoping Report is to: • Provide a description of the proposed project, including a sufficient level of detail to enable stakeholders to identify relevant issues and concerns; • Describe the local environmental and development context within which the project is proposed, to assist further in identifying issues and concerns; • Provide an overview of the process being followed in the Scoping Phase, in particular the Public Participation Process, as well as present the Plan of Study for EIA that would be followed in the subsequent EIA Phase; and • Present the issues and concerns identified to date from the stakeholder engagement process, together with an explanation of how these issues will be addressed through the EIA Process. This Final Scoping Report has been submitted to DEA for decision making.
Prepared for:	juwi Renewable Energies (PTY) Ltd Contact Person: Cleo Forster
Prepared by:	CSIR P O Box 320, Stellenbosch, 7599, South Africa Tel: +27 21 242 2432 Fax: +27 21 261 2472
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EXECUTIVE SUMMARY

PROJECT OVERVIEW

juwi Renewable Energies (PTY) Ltd is proposing to develop three 100 Megawatt (MW) Solar Photovoltaic (PV) power generation facilities and associated electrical infrastructure (132 kV transmission lines for each 100 MW facility) on Portion 0 of Smutshoek Farm 395 and Portion 9 of Gemsbok Bult 120, and the connection points to the Eskom Nieuwehoop Substation on the Portion 3 of Gemsbok Bult Farm 120, approximately 80 km south of Upington and 30 km north-east of Kenhardt within the !Kheis Local Municipality, Northern Cape Province.

In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the 2014 amended NEMA Environmental Impact Assessment (EIA) Regulations promulgated in Government Gazette 40772 and Government Notice (GN) R327, R326, R325 and R324 on 7 April 2017, a full Scoping and EIA Process is required for the construction of each Solar PV facilities. A separate Basic Assessment Process will be undertaken for the development of the proposed transmission line and, associated electrical infrastructure to enable connection to the Eskom Nieuwehoop Substation. The Applicant has appointed the Council for Scientific and Industrial Research (CSIR) to undertake the separate EIA and Basic Assessment (BA) Processes in order to determine the biophysical, social and economic impacts associated with undertaking the proposed development.

Since the proposed 100 MW Solar PV facilities are located within the same geographical area and constitute the same type of activity, an integrated Public Participation Process (PPP) will be undertaken for the proposed projects. However, separate Applications for Environmental Authorisation (EA) have been lodged with the Competent Authority (i.e. the National Department of Environmental Affairs (DEA)) for each proposed Scoping and EIA project and will be lodged for the BA project. Furthermore, separate reports (i.e. BA and Scoping and EIA Reports) will be compiled for each project. The Basic Assessment Report will be made available for Interested and Affected Party (I&AP) review with the EIA Reports.

The proposed 100 MW Solar PV facility projects (requiring a Scoping and EIA Process) are referred to as:

- Skeerhok PV 1;
- Skeerhok PV 2; and
- Skeerhok PV 3.

The proposed 132 kV transmission line project (requiring a BA Process) is referred to as:

- Skeerhok PV Transmission Line;

This Scoping Report only discusses the proposed **Skeerhok PV 3** project.

NEED FOR THE PROJECT

The Integrated Resource Plan for South Africa for the period 2010 to 2030 (referred to as "IRP 2010") was released by government in 2010, and proposes to develop and secure 17 800 MW of renewable energy capacity by 2030 (including wind, solar and other energy sources). The IRP was updated in 2013. The IRP 2010 has set up a target of 3 725 MW of renewable energy to be produced by Independent Power Producers (IPPs) by 2016. On 18 August 2015, an additional target of 6 300 MW to be procured and generated from renewable energy sources was added to the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) as noted Government Gazette 39111. The additional target allocated for solar PV energy is 2 200 MW.

In 2011, the Department of Energy (DOE) launched the REIPPPP and invited potential IPPs to submit proposals for the financing, construction, operation and maintenance of the first 3 725 MW of onshore wind, solar thermal, solar PV, biomass, biogas, landfill gas or small hydro projects. The two main evaluation criteria for compliant proposals are price and economic development, with other selection criteria including technical feasibility and grid connectivity, environmental acceptability, black economic empowerment, community development, and local economic and manufacturing propositions. The bidders with the highest rankings (according to the aforementioned criteria) are appointed as "Preferred Bidders" by the DOE. The proposed projects aim to contribute to the above strategic imperative.

PROJECT DESCRIPTION

Linked to enhancing its operations within South Africa, the 100 MW Solar PV facility (i.e. Skeerhok PV 3) proposed by juwi will cover an approximate area of 300 hectares (ha). The site (farm) is a total of approximately 4332 ha. Due to the fact that this project only requires 300 ha of land, there is scope to avoid major environmental constraints through the final design of the facility within the development footprint.

The proposed project will make use of PV solar technology to generate electricity from the sun's energy. The Applicant is proposing to develop a facility with a possible maximum installed capacity of 100 MW Alternating Current (AC) of electricity from PV solar energy.

Once a Power Purchase Agreement (PPA) is awarded, the proposed facility will generate electricity for a minimum period of 20 years. It is proposed that juwi will implement the Self-Build Option for the additional electrical infrastructure to be constructed (which will be assessed separately as part of a BA Process)). Following the construction phase, the proposed transmission line will either be transferred into the ownership of Eskom or remain in the ownership of juwi.

The solar facility will consist of the following components:

- ***Solar Field:***
  - ≤250 ha Free Field Single Axis Tracker or fixed tilt PV – 114 MW DC;
  - Solar module mounting structures comprised of galvanised steel and aluminium; and
  - below ground electrical cables connecting the PV arrays to the inverter stations, O&M building and collector substation; and
  - Inverters and mini-subs.

- ***Collector substation:***
  - ≤1 ha 22/33 kV to 132 kV collector substation to receive, convert and step up electricity from the PV facility to the 132 kV grid suitable supply. The facility will house control rooms and grid control yards for both Eskom and the Independent Power Producer. A 32 m telecommunications tower (lattice or monopole type) will be established in the substation area;
- ***O&M area:***
  - Operations and Maintenance (O&M) buildings;
  - ≤1 ha hectare O&M laydown area (near / adjacent substation);
  - ≤0.01 ha solar measuring station;
  - Parking, reception area, offices, guest accommodations and ablution facilities for operational staff, security and visitors;
  - Workshops, storage areas for materials and spare parts;
  - Water storage tanks or lined ponds (~160 kl/day during first 3 months; ~90 kl/day for 21 months during rest of construction period; ~20 kl/day during operation);
  - Septic tanks and sewer lines to service ablution facilities; and
  - Central Waste collection and storage area.
- ***Battery Storage System:***
  - 100 MW Battery Storage Facility with a maximum height of 8m and a maximum volume of 1,120 m^3 of batteries (dangerous goods) and associated operational, safety and control infrastructure;
- ***Access road:***
  - ≤ 15 km long, ≤8 m wide gravel access road running from the transnet service road to the site
- ***Service roads:***
  - ≤10 km of ≤4 m wide gravel internal service roads within the plant boundary;
- ***Other infrastructure:***
  - Perimeter fencing and internal security fencing and gates as required.
  - Access control gate and guard house on access road;
  - ≤3.5 km length of small diameter water supply pipeline connecting existing boreholes to storage.
  - Stormwater channels
- ***Construction Site office area (used during construction and rehabilitated thereafter):***
  - ≤1 ha site office area;
  - ≤ 20 ha laydown area; and
  - ≤1 ha concrete batching plant

NEED FOR AN ENVIRONMENTAL IMPACT ASSESSMENT

As noted above, in terms of the EIA Regulations promulgated under Chapter 5 of the NEMA published in GN R327, R326, R325 and R324 in Government Gazette 40772, dated 7 April 2017, a full Scoping and EIA Process is required for the proposed project. The need for the full Scoping and EIA is triggered by, amongst others, the inclusion of Activity 1 listed in GN R325 (Listing Notice 2):

- *"The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs within an urban area, or, on existing infrastructure".*

Given that energy related projects have been elevated to national strategic importance in terms of the EA Process, the proposed project requires authorisation from the National DEA, acting in consultation with other spheres of government.

The purpose of the EIA is to identify, assess and report on any potential impacts the proposed project, if implemented, may have on the receiving environment. The Environmental Assessment therefore needs to show the Competent Authority, the DEA; and the project proponent, juwi, what the consequences of their choices will be in terms of impacts on the biophysical and socio-economic environment and how such impacts can be, as far as possible, enhanced or mitigated and managed as the case may be.

PURPOSE OF THE SCOPING REPORT

The Scoping Phase of the EIA refers to the process of determining the spatial and temporal boundaries for the EIA. In broad terms, the objectives of the Scoping Process in terms of the 2014 amended NEMA EIA Regulations (GN R326) are to:

- Confirm the process to be followed and opportunities for stakeholder engagement;
- Clarify the project scope to be covered;
- Identify and confirm the preferred activity and technology alternative;
- Identify and confirm the preferred site for the preferred activity;
- Identify the key issues to be addressed in the impact assessment phase and the approach to be followed in addressing these issues; and
- Confirm the level of assessment to be undertaken during the impact assessment

This is achieved through parallel initiatives of consulting with:

- The lead authorities involved in the decision-making for this EIA application;
- The public to ensure that local issues are well understood; and
- The EIA specialist team to ensure that technical issues are identified.

The Scoping Process is supported by a review of relevant background literature on the local area. Through this comprehensive process, the environmental assessment can identify and focus on key issues requiring assessment.

The primary objective of the Scoping Report is to present key stakeholders (including affected organs of state) with an overview of the project and key issues that require assessment in the EIA Phase and allow the opportunity for the identification of additional issues that may require assessment. Issues raised in response to this Scoping Report (currently being released for a 30-day comment period) will be captured in an Issues and Responses Trail as an appendix to the Final Scoping Report, which will be submitted to the National DEA for decision-making (i.e. approval or rejection). This approval is planned to mark the end of the Scoping Phase after which the EIA Process moves into the impact assessment and reporting phase.

IDENTIFICATION OF ISSUES

The list below indicates the main issues identified thus far during the Scoping Phase and to be addressed during the EIA Process.

Terrestrial and Aquatic Ecology Impacts:

Construction Phase:

- Ousting of fauna through increased anthropogenic activities, disturbance of refugia (location of an isolated population that was widespread in the past) and general change in habitat.
- Increased electrical light pollution leading to changes in nocturnal behavioural patterns amongst fauna.
- Exclusion (or entrapment) of in particular, larger fauna on account of the fencing of the site.
- Changes in edaphics (soils) on account of excavation and import of material, leading to alteration of plant communities and fossorial species in and around these points.
- Alteration in surface drainage patterns on account of construction activities leading to rapid change in plant communities and general habitat structure both within the site and immediately adjacent to site.
- Alteration of surface water quality on account of construction activities that lead to changes in water chemistry (e.g. use of concrete, increased hydrocarbon input, increased sediment within run off etc. alter various chemical parameters).
- Depending upon the origin of water (import or through abstraction of groundwater) changes in sub-surface water resources may arise, particularly in the case of the latter

Operational Phase:

- Alteration of ecological processes on account of the exclusion of certain species inherent to the functional state of land within the PV facility i.e. larger fossorial species and predators will be excluded from the PV facility site by virtue of its fencing, generally leading to possible variations in populations of other species that remain within the site, with concomitant ecological change.
- Increased shading of vegetation as a consequence of the PV arrays, will lead to changes in plant water relations and possible changes in plant community structures within the site.
- The fencing of the site, possibly with electric fencing, is likely to impact upon faunal behaviour, leading to the exclusion of certain species and possible mortalities. Alternatively, such changes may also favour some specific individuals, particularly those that remain within the confines of the proposed PV facility, which is likely to lead to further localised alteration in habitat and ecological processes within the facility.
- Abstraction of ground water for the cleaning of modules will alter the state of sub-surface water resources, depending upon nature and origin of such water.

Visual Impacts:

Construction Phase:

- Potential visual intrusion of construction activities on the existing views of sensitive visual receptors in the rural landscape.
- Potential visual intrusion of a large area cleared of vegetation on the existing views of sensitive visual receptors.
- Potential visual impact of night lighting during the construction phase on the nightscape of the region.

Operational Phase:

- Potential landscape impact of introducing a large solar plant into a remote rural landscape.
- Potential visual intrusion of a large solar field on the existing views of sensitive visual receptors.

- Potential visual intrusion of tall, relatively large structures on the existing views of sensitive visual receptors.
- Potential impact of night lighting of the development on the relatively dark rural nightscape.

Archaeology and Cultural Landscape:

Construction and Operational Phases:

- Direct disturbance and/or destruction of archaeological material;
- Direct impacts to the landscape through introduction of industrial type facilities; and
- Direct disturbance and/or destruction of possible graves.

Palaeontology:

- Potential damage to or destruction of fossil heritage at or near the surface within the study area.

Soils and Agricultural Potential

Construction and Operational Phases:

- Economic consequences of the proposed project at local/regional scale due to the modification/loss of agricultural potential on the site.
- Operational Phase: Whether soil conditions will be transformed and agricultural soil resources will be damaged or lost.

Social Issues:

- Construction and Operational Phases:
  - Influx of jobseekers;
  - Increased competition for urban-based employment;
  - Increases in social deviance;
  - Increases in incidence of HIV/AIDS infections;
  - Expectations regarding jobs;
  - Local spending;
  - Local employment; and
  - Job losses at the end of the project life-cycle.

The Plan of Study for EIA (Chapter 7) presents the approach to the forthcoming EIA Phase. This includes the Terms of Reference for the various specialist studies that are proposed to address the issues raised, where necessary.

Project team/...

PROJECT TEAM

NAME	ORGANISATION	ROLE/STUDY TO BE UNDERTAKEN
Environmental Management Services (CSIR)		
Paul Lochner	CSIR	Technical Advisor and Quality Assurance (EAPSA) Certified
Surina Laurie	CSIR	Project Leader (*Pr. Sci. Nat.)*
Kelly Stroebel	CSIR	Project Manager (Appointed EAP)
Babalwa Mqokeli	CSIR	Project Officer
Specialists		
Simon Bundy	Sustainable Development Projects (SDP)	Ecological Impact Assessment (including Terrestrial Ecology)
Jon Smallie	Wild Skies Ecological Services	Avifauna Impact Assessment
Luanita Snyman-Van der Walt	CSIR	Visual Impact Assessment
Dr. Jayson Orton	ASHA Consulting (Pty) Ltd	Heritage Impact Assessment (Archaeology and Cultural Landscape)
Dr. John Almond	Natura Viva cc	Desktop Palaeontological Impact Assessment

Due to the proximity of the proposed project to identical projects, the findings of the EIA will also be informed by the Soils and Agriculture Potential Assessment studies and Social Impact Assessments that have been undertaken in the area.

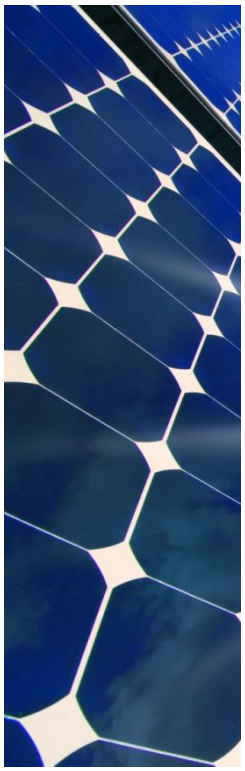
PUBLIC PARTICIPATION

In order to notify and inform the public of the proposed project and invite I&APs to register on the project database, the project and EIA Process was advertised in one local newspaper (i.e. The Gemsbok), as shown in **Appendix D.** The newspaper advertisement also provided the details of the project website (i.e. https://www.csir.co.za/environmental-impact-assessment) where information available on the project, could be downloaded from.

Regulation 41 (2) (a) of the 2014 amended EIA Regulations require that a notice board providing information on the project and EIA Process is fixed at a place that is conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of the site where the application will be undertaken or any alternative site. To this end, a 841 mm x 594 mm notice board placed at various locations will reflect in **Appendix F** of this **Final Scoping Report.**

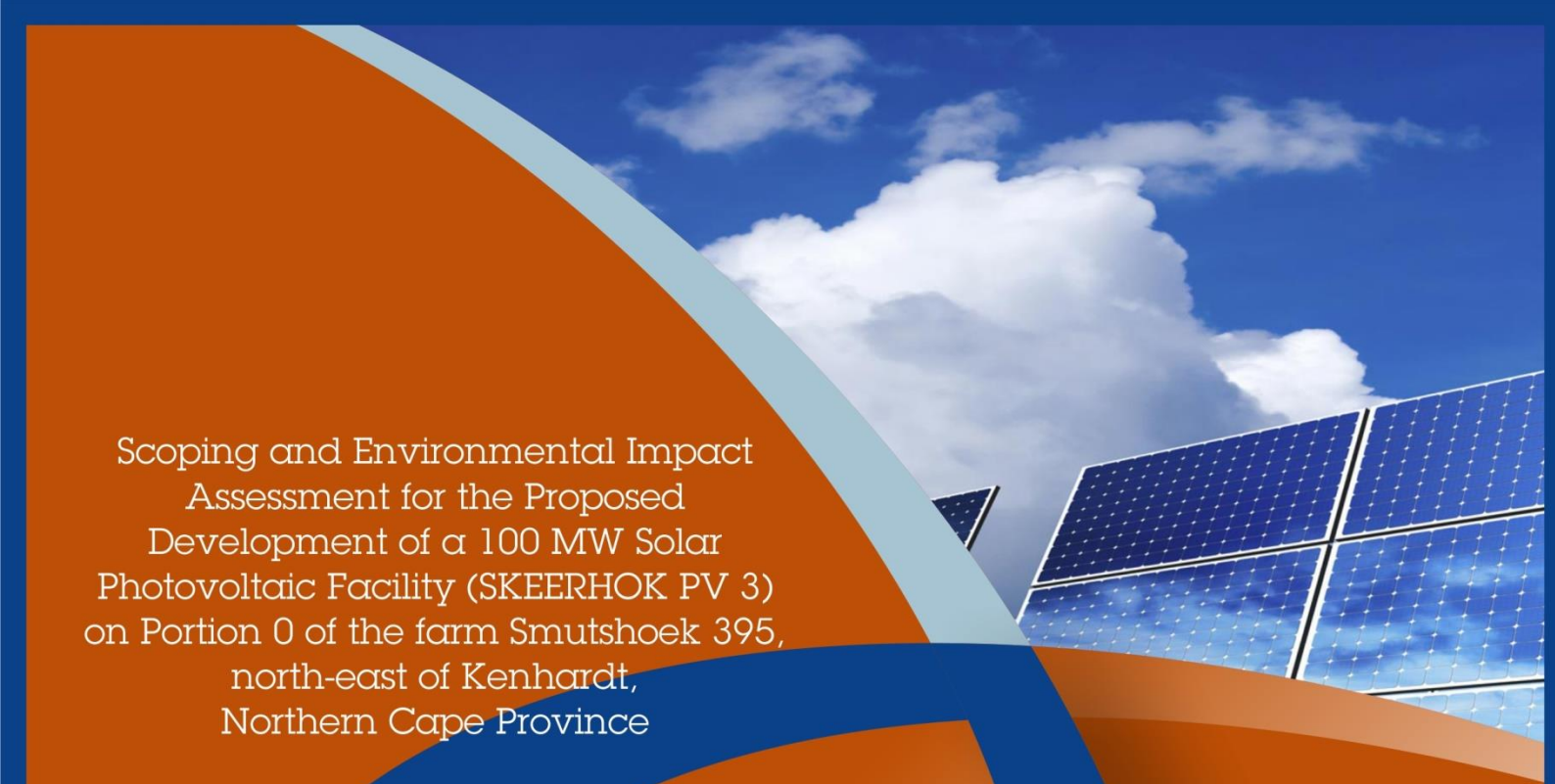
In addition to the newspaper advertisement and site notice boards, letters regarding the Scoping and EIA Processes were mailed to all pre-identified key stakeholders on the database. This letter provided I&APs with a 30-day period to register their interest on the project database and comment on the Draft Scoping Report. The report is available for download from the project website (mentioned above) as well as for viewing at the Kenhardt Public Library.

GLOSSARY



AC	Alternating Current
ADT	Average Daily Traffic
AGIS	Agricultural Geo-Referenced Information System
BA	Basic Assessment
BGIS	Biodiversity Geographic Information System
BID	Background Information Document
CA	Competent Authority
CBA	Critical Biodiversity Area
CPV	Concentrated Photovoltaic
CSP	Concentrated Solar Power
CSIR	Council for Scientific and Industrial Research
DAFF	National Department of Agriculture, Forestry and Fisheries
DEA	National Department of Environmental Affairs
DEA&DP	Western Cape Department of Environmental Affairs and Development Planning
DC	Direct Current
DM	Siyanda District Municipality
DMR	National Department of Minerals Resources
DOE	Department Of Energy
DOT	National Department of Transport
DSR	Draft Scoping Report
DWA	National Department of Water Affairs
EA	Environmental Authorization
EAP	Environmental Assessment Practitioner
EC	Electrical Conductivity
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ESA	Ecological Support Area
FEPA	Freshwater Ecosystem Protection Areas
FSR	Final Scoping Report
GA	General Authorization
GG	Government Gazette
GIS	Geographical Information Systems
GN R	Government Notice Regulation
HPM	Hydraulic Plant Module
I&AP	Interested and Affected Party
IEM	Integrated Environmental Management
ICB	Iron Chromium Battery

IDP	Integrated Development Plan
IPP	Independent Power Producer
IRP	Integrated Resource Plan
kWh	Kilowatt Hours
LSA	Later Stone Age
Mf	Friesdale Charkonite
Mja	Jacomys Pan Formation
Mks	Klip Koppies Granite
MSA	Middle Stone Age
MW	Megawatts
NBA	South African National Parks
NEMA	National Environmental Management Act (Act 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act
NERSA	National Energy Regulator of South Africa
NFEPA	National Freshwater Ecosystems Protected Areas
NHRA	National Heritage Resources Act (Act 25 of 1999)
NPAES	National Protected Expansion Strategy
NWA	National Water Act (Act No. 36 of 1998)
PES	Present Ecological State
PPA	Power Purchasing Agreement
PV	Photovoltaic
REDZs	Renewable Energy Development Zones
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
S&EIR	Scoping and Environmental Impact Reporting
SABAP2	South African Bird Atlas Project
SAHRA	South African Heritage Resources Agency
SANRAL	South African National Roads Agency Limited
SANS	South African National Standards
SANBI	South African National Biodiversity Institute
SARERD	South African Renewable Energy Resource Database
SDF	Spatial Development Framework
TDS	Total Dissolved Solids
ToR	Terms of Reference
WASA	Wind Atlas of South Africa
WMA	Water Management Area
WULA	Water Use License Application



Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

FINAL SCOPING REPORT

CHAPTER 1: *Introduction*

CONTENTS

TABLES

FIGURES

KEY INFORMATION TO THIS APPLICATION

Table 1.1: Summary of Project Description

<table>
<tr><th>No.</th><th>Project aspect</th><th>Description</th></tr>
<tr><td>1</td><td>Description of the activity</td><td>juwi proposes the construction and operation of a ≤100 MW solar energy facility (SEF) on Portion 0 of the Farm Smutshoek 395 and associated infrastructure, near Kenhardt in the !Kheis Municipality, in the Northern Cape Province.</td></tr>
<tr><td>2</td><td>Municipality</td><td>!Kheis Municipality</td></tr>
<tr><td>3</td><td>Applicant</td><td>juwi Renewable Energies (Pty) Ltd</td></tr>
<tr><td></td><td>Property details</td><td><table><tr><th>Farm Name</th><th>Farm No.</th><th>Farm Portion</th><th>Surveyor General 21 Digit Code</th></tr><tr><td>Smutshoek</td><td>395</td><td>0</td><td>C03600000000039500000</td></tr></table></td></tr>
<tr><td>4</td><td>Size of the site</td><td>Approximately property size is 4332 hectares (ha).</td></tr>
<tr><td>5</td><td>Development footprint</td><td>Approximately ~300 ha for the PV development (incl. associated infrastructure)
Area assessed ~ 350 ha</td></tr>
<tr><td>6</td><td>Capacity of the facility (in MWac)</td><td>≤100 MWac
100 MWh battery storage facility</td></tr>
<tr><td>7</td><td>Type of technology</td><td>A renewable energy facility comprising of numerous rows of PV (fixed or single axis) modules with associated support infrastructure to generate up to 100 MWac electricity.</td></tr>
<tr><td>8</td><td>Structure heights</td><td>• Solar PV panels: approximately 5 m high
• Battery storage facility: approximately 8 m high
• Operations and Maintenance (O&M) buildings: approximately 8 m high
• Collector (on-site) substation approximately: 30 m high including a 32 m high telecoms tower
• On-site 132 kV transmission line: approximately 30 m above ground level</td></tr>
<tr><td>9</td><td>Type of grid connection (substation to which project will connect)</td><td>An overhead 132 kV transmission line will be constructed for the SEF and will extend between the proposed on-site substation and the Eskom Nieuwehoop Substation (to be assessed as part of a separate BA Process).</td></tr>
<tr><td>10</td><td>Other infrastructure (e.g. additional infrastructure, details of access roads, extent of areas required for laydown of materials and equipment, etc.)</td><td>• Perimeter fencing and internal security fencing and gates as required.
• Access control gate and guard house on access road;
• Small diameter water supply pipeline connecting boreholes to storage.
• Batching plant;
• Panel maintenance and cleaning area;
• Stormwater channels and culverts</td></tr>
</table>

IMPORTANT NOTICE

The Scoping and Environmental Impact Report process required by the National Environmental Management Act (Act. 107 of 1998) (NEMA) consists of two phases: (1) scoping and (2) a detailed impact assessment phase (i.e. the Environmental Impact Assessment (EIA) Phase).

The scoping phase is very important to any project, as it is the first stage for the proposed development to be introduced to the public and that they have the opportunity to contribute valuable local knowledge and help identify significant issues. This information is then used to define the terms of reference (i.e. Plan of Study for EIA) for the EIA phase, by identifying the approach, critical issues to address, feasible alternatives, scope of work for detailed specialist assessments and preliminary mitigation measures (DEAT, 2002).

However, the current 2014 NEMA EIA Regulations (Government Notice No. R 326 of 2017, specifically Appendix 2 to these regulations), as amended, requires the Scoping Report to include much more detailed information, such as the identification and assessment of impacts, the preferred site, and mitigation measures. These were previously only required in the EIA phase in terms of the 2006 and 2010 EIA Regulations. In order to meet these current requirements, specialists undertook scoping phase assessments and have been included in this document.

All Interested and Affected Parties should note that despite the above-mentioned changes to Scoping Report (SR) requirements, there is still an opportunity to raise issues that would define the terms of reference for the EIA Phase. All concerns raised during the Scoping phase will be addressed appropriately and incorporated, where relevant, to guide the EIA phase. If additional specialist assessments are required, based on the concerns raised and/or comments received by the Department of Environmental Affairs (DEA), the additional studies will be undertaken during the EIA phase.

In terms of the 2006 and 2010 NEMA EIA regulations two versions namely a draft and final version of the scoping and environmental impact report respectively were made available for public comment. Interested and Affected Parties (I&APs) should note that only one version of the draft SR and one version of the draft Environmental Impact Report will be made available for public comment in terms of the 2014 NEMA EIA Regulations, as amended.

NEMA REQUIREMENTS WITH REFERENCE TO RELEVANT SECTIONS OF THIS REPORT

The EIA process undertaken to date has culminated in the production of this SR, which provides information relevant to the project and establishes the potential impacts that will be assessed in detail during the impact assessment phase.

Table 1.2 illustrates how the structure of the SR addressed applicable requirements for information terms of 2014 EIA Regulations, as amended.

Table 1.2: Environmental Impact Assessment Regulations (GN No. 982 of 2014) requirements for Scoping Reports

Section of the EIA Regulations	Requirements for a Scoping Report in terms of Appendix 2 of the 2014 NEMA EIA Regulations, as amended (GN R326)	Section	Page
Appendix 2 - (1)(a)	Details of - i. the EAP who prepared the report; and ii. the expertise of the EAP, including a curriculum vitae;	Section 1.7 and Appendix A	Pages 1-26 and 1-18
Appendix 2 - (1)(b)	The location of the activity, including - i. the 21 digit Surveyor General code of each cadastral land parcel; ii. where available, the physical address and farm name; iii. where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section 1.1, 2.0 and 3.1	Pages 1-3, 1-9, 2-2 and 3-3
Appendix 2 - (1)(c)	A plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is - i. a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or ii. on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Section 2.0 and 3.2	Pages 2-2 and 3-5
Appendix 2 - (1)(d)	A description of the scope of the proposed activity, including – i. all listed and specified activities triggered; ii. a description of the activities to be undertaken, including associated structures and infrastructure;	Section 1.1, 2.1 and 4.1	Pages 1-10 to 1-11, 2-4 to 2-9 and 4-5 to 4-7
Appendix 2 - (1)(e)	A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;	Section 4.1 and 4.2	Pages 4-8 to 4-15
Appendix 2 - (1)(f)	A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section 1.5	Pages 1-14 to 1-25
Appendix 2 - (1)(g)	A full description of the process followed to reach the proposed preferred activity, site and location of the development footprint	Section 3.3, 4.1, Section 5.1, 6.1 -	Pages 4-16;

Section of the EIA Regulations	Requirements for a Scoping Report in terms of Appendix 2 of the 2014 NEMA EIA Regulations, as amended (GN R326)	Section	Page
	within the site, including - i. details of all the alternatives considered; ii. details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; iii. a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; iv. the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; v. the impacts and risks which have informed the identification of each alternative, including the nature, significance, consequence, extent, duration and probability of such identified impacts, including the degree to which these impacts – (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated; vi. the methodology used in identifying and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives; vii. positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; viii. the possible mitigation measures that could be applied and level of residual risk; ix. the outcome of the site selection matrix; x. if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and xi. a concluding statement indicating the preferred alternatives, including preferred location of the activity;	6.12 and Section 7.3	5-6 to 5-14; 6-3 to 6-15 and 7-3 to 7-6.
Appendix 2 - (1)(h)	A plan of study for undertaking the environmental impact assessment process to be undertaken, including - i. a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity; ii. a description of the aspects to be assessed as part of the environmental impact assessment process; iii. aspects to be assessed by specialists; iv. a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists; v. a description of the proposed method of assessing duration and significance;	Section 7.1-7.7	Pages 7-6 to 7-18

Section of the EIA Regulations	Requirements for a Scoping Report in terms of Appendix 2 of the 2014 NEMA EIA Regulations, as amended (GN R326)	Section	Page
	vi. an indication of the stages at which the competent authority will be consulted; vii. particulars of the public participation process that will be conducted during the environmental impact assessment process; and viii. a description of the tasks that will be undertaken as part of the environmental impact assessment process; ix. identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.		
Appendix 2 - (1)(i)	An undertaking under oath or affirmation by the EAP in relation to - i. the correctness of the information provided in the report; ii. the inclusion of comments and inputs from stakeholders and interested and affected parties; and iii. any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;	Appendix B	Page 1
Appendix 2 - (1)(j)	An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;	Appendix B	Page 1
Appendix 2 - (1)(k)	Where applicable, any specific information required by the competent authority;	Appendix H	Pages 5 - 12
Appendix 2 - (1)(l)	Any other matter required in terms of section 24(4)(a) and (b) of the Act.	Not applicable at this stage	N/A

1. INTRODUCTION

This chapter provides an introduction (project overview) of the proposed juwi Solar Energy Facility, Skeerhok PV 3, proposed on the Smutshoek Farm 395 Portion 0 near Kenhardt in the Northern Cape. This chapter includes:

- An overview of the motivation or needs and desirability of the proposed PV Facility;
- Information on the Applicant;
- The appointed Environmental Assessment Practitioner (EAP) and the specialist team;
- An outline the objectives of the Scoping Report; and
- The Requirements for a Scoping Report in terms of Appendix 2 of the 2014 NEMA EIA Regulations, as amended (GN R326).

1.1. Introduction to the Proposed Development of a Solar PV Facility

juwi Renewable Energies (Pty) Ltd (hereinafter referred to as "juwi") proposes to construct and operate a 100 MW Solar Energy Facility (SEF) and associated electrical infrastructure (subject to a separate Basic Assessment Process), on the Smutshoek Farm 395, Portion 0 in the Northern Cape of South Africa. The project, referred to as **Skeerhok PV 3**, will be located approximately 70 km south of Upington and 43 km north-east of Kenhardt within the !Kheis Local Municipality, Northern Cape Province. The connection point is the existing Eskom Nieuwehoop substation located on the Portion 3 of Gemsbok Bult Farm 120.

In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the 2014 NEMA EIA Regulations, promulgated in Government Gazette 40772 and Government Notice (GN) R326, R327, R325 and R324 on 7 April 2017, a full Scoping and EIA Process is required for the construction of the proposed Skeerhok PV 3 Facility. juwi has appointed the Council for Scientific and Industrial Research (CSIR) to undertake the EIA Process in order to determine the biophysical, social and economic impacts associated with undertaking the proposed activities. Given that energy related projects have been elevated to national strategic importance in terms of the EIA Process, the proposed Solar PV Facility requires authorisation from the DEA as the Competent Authority (CA), acting in consultation with other spheres of government.

juwi intends to develop three Solar PV Facilities of 100 MW each and associated electrical infrastructure (subject to a separate Basic Assessment Process) on Portion 0 of Smutshoek Farm 395 and Portion 9 of Gemsbok Bult Farm 120 near Kenhardt in the Northern Cape (Figure 1.1). The three proposed projects are indicated in Table 1.3 below. This SR only considers the proposed development of the Skeerhok PV 3 project.

Table 1.3: Three Preferred Solar PV Facilities proposed by juwi near Kenhardt in the Northern Cape

No	Solar PV Project	Project Site
1.	Skeerhok PV 1	Portion 0, Smutshoek Farm 395
2.	Skeerhok PV 2	Portion 9 of Gemsbok Bult Farm 120
3.	**Skeerhok PV 3**	Portion 0, **Smutshoek Farm 395**

Since the proposed 3 x 100 MW Solar PV Facilities are located within the same geographical area and constitute the same type of activity, an integrated Public Participation Process (PPP) will be undertaken for the proposed projects. However, three separate Applications for EA will be submitted to DEA.

Furthermore, three separate SR and three separate EIA Reports will be prepared and submitted to DEA for decision-making.

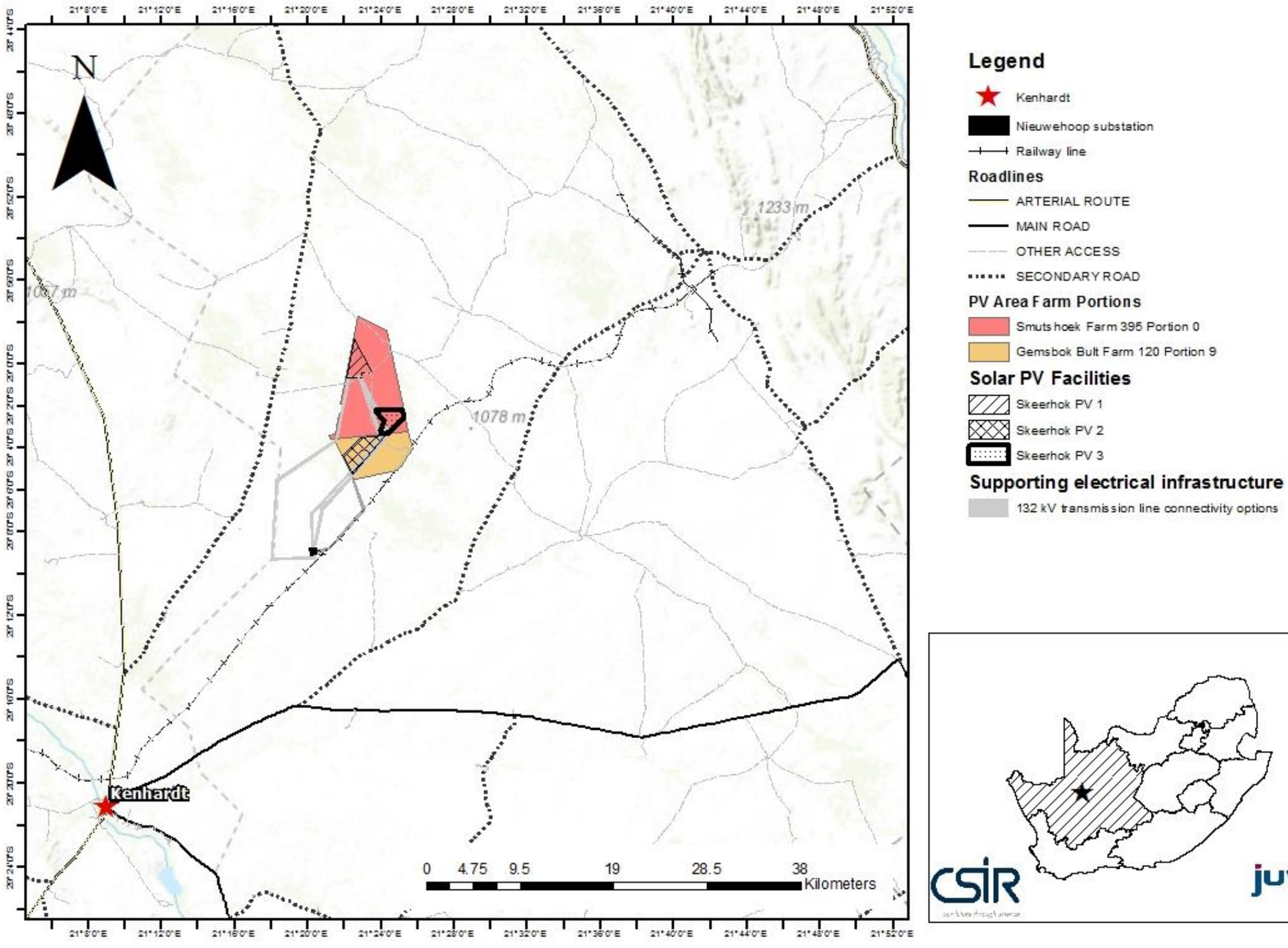


Figure 1.1: Locality map for the proposed three Solar Photovoltaic Facilities near Kenhardt in the Northern Cape. Skeerhok PV 3 (project under consideration for this Scoping process) is shown in a bold black border on the map

The proposed Solar PV Facility will require a development area of approximately ~300 ha. The project will comprise the following main components (which are discussed in more detail in the Project Description Chapter (Chapter 2) of this Scoping Report and illustrated in Figure 1.2 below:

- ***Solar Field:***
  - ≤250 ha Free Field Single Axis Tracker or fixed tilt PV – 114 MWdc;
  - Solar module mounting structures comprised of galvanised steel and aluminium; and
  - below ground electrical cables connecting the PV arrays to the inverter stations, O&M building and collector substation; and
  - Inverters and mini-subs.

- ***Collector substation:***
  - ≤1 ha 22/33 kV to 132 kV collector substation to receive, convert and step up electricity from the PV facility to the 132 kV grid suitable supply. The facility will house control rooms and grid control yards for both Eskom and the Independent Power Producer. A 32 m telecommunications tower (lattice or monopole type) will be established in the substation area.

- ***O&M area:***
  - Operations and Maintenance (O&M) buildings;
  - ≤1 ha hectare O&M laydown area (near / adjacent substation);
  - ≤0.01 ha solar measuring station;
  - Parking, reception area, offices, guest accommodations and ablution facilities for operational staff, security and visitors;
  - Workshops, storage areas for materials and spare parts;
  - Water storage tanks or lined ponds (~160 kl/day during first 3 months; ~60 kl/day for 15 months during rest of construction period; ~20 kl/day during operation);
  - Septic tanks and sewer lines to service ablution facilities; and
  - Central Waste collection and storage area.

- ***Battery Storage System:***
  - 100 MW Battery Storage Facility with a maximum height of 8 m and a maximum volume of 1,120 m^3 of batteries (dangerous goods) and associated operational, safety and control infrastructure.

- ***Access road:***
  - ≤15 km long, ≤8 m wide gravel access road running from the Transnet Service Road to the site.

- ***Service roads:***
  - ≤10 km of ≤4 m wide gravel internal service roads within the plant boundary.

- ***Other infrastructure:***
  - Perimeter fencing and internal security fencing and gates as required.
  - Access control gate and guard house on access road;
  - Small diameter water supply pipeline connecting boreholes to storage.
  - Stormwater channels; and culverts.

- ***Construction Site office area (used during construction and rehabilitated thereafter):***
  - ≤1 ha site office area;
  - ≤20 ha laydown area; and
  - ≤1 ha concrete batching plant.

The 100 MW PV Facility will connect to the Eskom Nieuwehoop Substation located on the Portion 3 Gemsbok Bult Farm 120 via a 132 kV overhead transmission line (the development of the 132kV line will be considered under a separate Basic Assessment process). Environmental Authorisation for the construction of the 400/132 kV Eskom Nieuwehoop Substation was granted on 21 February 2011 by the DEA (DEA reference number: 12/12/20/1166). An EA (DEA reference number: DEA Reference Number: 12/12/20/2606; NEAS Reference Number: DEA/EIA/0000785/2011), dated 14 February 2014, granted authorisation to Eskom Holdings SOC Limited to construct, *inter alia*, the following within the existing development footprint of the Nieuwehoop Substation:

- 2 x 400 kV transformer feeder bay;
- A 400 / 132 kV transformer;
- 132 kV busbar;
- 400 / 132 kV 500 MVA x 3 transformers; and
- 8 x 132 kV feeder bays and associated lines.

Depending on the location of the substation on-site, a maximum of 30 kms will be accommodated for the length of the proposed overhead line, connecting the on-site substation to the Nieuwehoop Substation.

A detailed project description (based on the conceptual design) is provided in Chapter 2 of this Scoping Report.

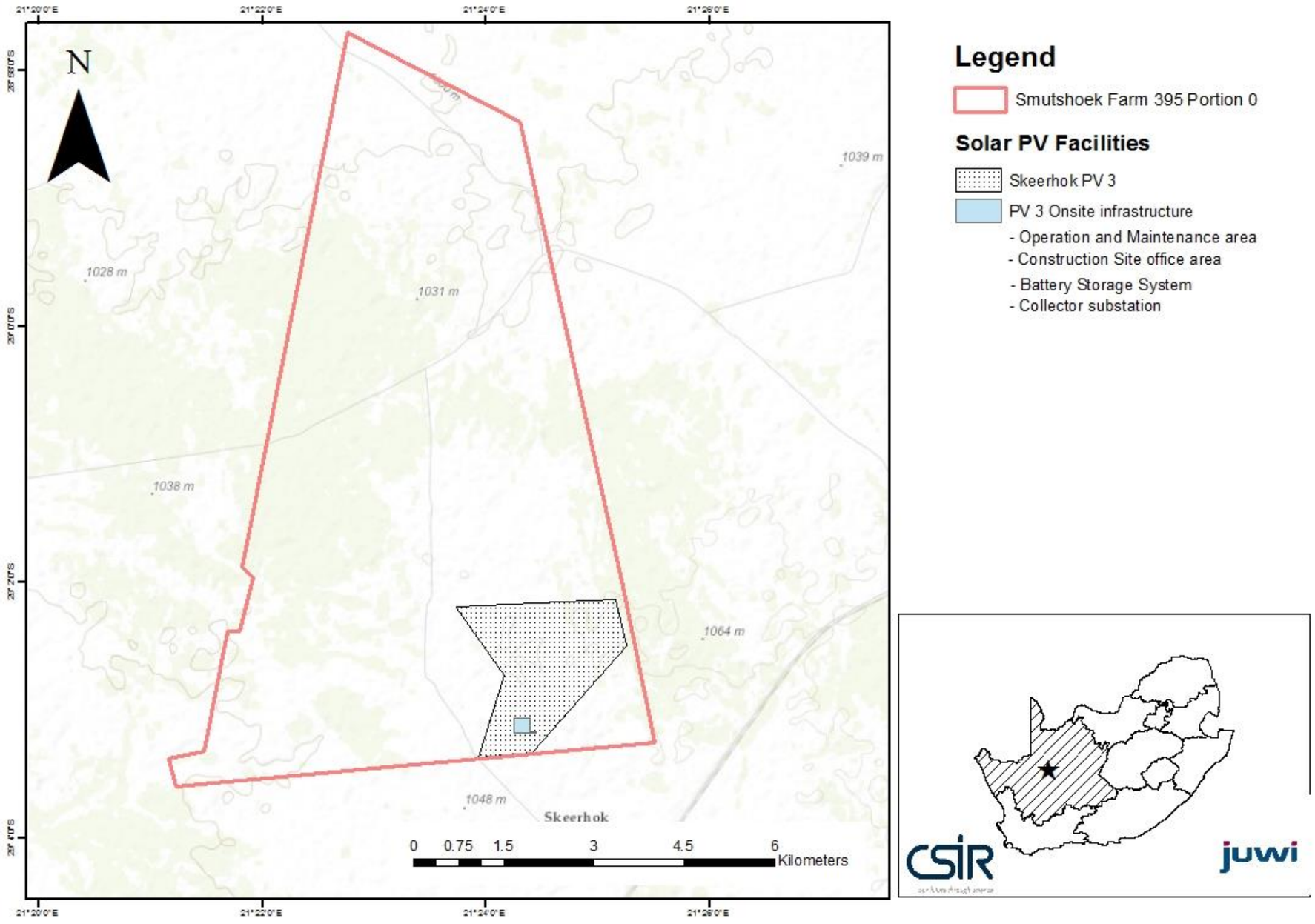


Figure 1.2: Plan locating the main components of the proposed Skeerhok PV 3 project on Portion 0 of Sumtshoek Farm 395

1.2. Requirements for an EIA

As noted above, in terms of the EIA Regulations, as amended, promulgated under Chapter 5 of the NEMA published in GN R326, R327, R325 and R324 on 7 April 2017, a full Scoping and EIA Process is required for the proposed project. The need for the full Scoping and EIA is triggered by, amongst others, the inclusion of Activity 1 listed in GN R325 (Listing Notice 2):

- "The development of facility or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more, excluding where such development of facility or infrastructure is for photovoltaic installations and occurs (a) within an urban area; or (b) on existing infrastructure".

Chapter 4 of this Scoping Report contains the detailed list of activities contained in R327, R325 and R324 which may be triggered by the various project components and thus form part of the Scoping and EIA Process.

The purpose of the EIA is to identify, assess and report on any potential impacts the proposed project, if implemented, may have on the receiving environment. The environmental assessment therefore needs to show the CA, the DEA, and the project applicant, juwi, what the consequences of their choices will be in terms of impacts on the biophysical and socio-economic environment and how such impacts can be, as far as possible, enhanced or mitigated and managed as the case may be.

1.3. Project Applicant and Project Overview

juwi Renewable Energies in South Africa is part of the international juwi Group, one of the world's leading companies in the area of renewable energy. juwi South Africa focuses on Solar Energy and Wind Energy, and works with landowners, project developers, technology providers, regulators and investors to source and develop renewable energy projects. juwi acts as the project interface, coordinating the research and studies, the site identification, the project structure, environmental impact assessments, selecting the strategic partners, arranging financing, ensuring bid compliance and bidding under the Department of Energy's (DoE) Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) and reaching financial closure.

1.4. Project Motivation (Including Need and Desirability)

The need for renewable energy is becoming increasingly apparent, in both local and international context, with South Africa becoming an integral part of the global transition towards renewable sources of electricity generation. The urgency behind this evolution can be appreciated considering that South Africa is the largest emitter of greenhouse gases in Africa, accounting for as much as 42 % of the continent's total emissions, and is also estimated to rank amongst the top 20 largest emitters of greenhouse gases in the world. These emissions are largely a result of an energy-intensive economy and high dependence on coal-based electricity generation. The South African government is therefore committed to supplementing the existing generation capacity of thermal and nuclear power plants with renewable energy power generation, thus creating the framework that will lead to an increase in the supply of clean energy for the nation.

South Africa is subject to some of the highest levels of solar radiation in the world with an average daily solar radiation that varies between 4.5 kilowatt hours per square metre per day (kWh/m^2 /day) and 6.5 kilowatt hours per square metre per day (kWh/m^2/day). This, in comparison to about 3.6kWh/^{m2}/day for parts of the United States and about 2.5kWh/m^2/day for Europe and the United Kingdom (Department of Energy, 2016), reveals that South Africa has considerable solar resource potential which should be exploited. On a provincial level, the Northern Cape is considered to be the best location for solar energy development in South Africa, due to its exceptionally high solar resource, flat and sparsely populated land, good transport, electricity grid infrastructure and the low population density. The average solar radiation in the Northern Cape ranges from 2200 kWh/m^2 per annum to 3200 kWh/m^2 per annum. On an annual scale, the Northern Cape received the most incoming solar radiation throughout the years (1980 to 2009), followed by North West and Free State. KwaZulu-Natal received least amount of mean monthly solar radiation in comparison with other provinces.

The Kenhardt area has an average solar radiation between 2200-2300 kWh/m^2/ per annum and is one of the best locations, within the Northern Cape for solar power generation. Therefore, this section of South Africa is deemed the most suitable for the construction and operation of solar energy facilities as opposed to other areas and provinces within South Africa. For example, coastal regions within KwaZulu-Natal, Eastern Cape and Western Cape mainly have a solar radiation between 1500 kWh/m^2 and 1700 kWh/m^2 per annum, which is not completely feasible for solar energy projects.

The establishment of the proposed PV power generation facility would strengthen the existing electricity grid for the area. Additionally, the project would contribute towards meeting the national energy target as set by the Department of Energy (DoE) and assist the government in achieving its proposed renewable energy target of 17 800 MW by 2030.

Should the proposed site and development identified by juwi be acceptable, it is considered viable that long term benefits for the community and society in the Kenhardt area would be realised. The towns in the Northern Cape are generally small with limited job opportunities, and the proposed project will provide an opportunity for additional employment in an area where job creation is identified as a key priority. Approximately 1600 (600 direct and 1000 indirect) employment opportunities will be created during the construction period and 200 (50 direct and 150 indirect) employment opportunities will be created during the operation period of the proposed project.

The proposed project would also have international significance as it contributes to South Africa being able to meet some of its international obligations by aligning domestic policy with internationally agreed strategies and standards as set by the United Nations Framework Convention on Climate Change (UNFCCC), Kyoto Protocol, and United Nations Convention on Biological Diversity (UNCBD) all of which South Africa is a signatory to. Renewable energy is critical to South Africa as this source of energy is recognised as a major contribution to climate protection, has a much lower environmental impact, as well as advancing economic and social development.

1.5. Need and Desirability

It is an important requirement in the EIA Process to review the need and desirability of the proposed project. Guidelines on Need and Desirability were published in the Government Gazette of 20 October 2014. These guidelines list specific questions to determine need and desirability of proposed developments. This checklist is a useful tool in addressing specific questions relating to the need and

desirability of a project and assists in explaining that need and desirability at the provincial and local context. Need and desirability answer the question of whether the activity is being proposed at the right time and in the right place. Table 1.4 includes a list of questions based on the DEA's Guideline to determine the need and desirability of the proposed project. It should be noted this table will be informed by the outcomes of the Scoping and EIA Process and will be updated, once the relevant impact assessment have been received.

Table 1.4: The Guideline on the Need and Desirability's list of 14 questions to determine the "Need and Desirability" of a proposed project

NEED	
Question	**Response**
1. How will this development (and its separate elements/aspects) impact on the ecological integrity of the area)?	
1.1. How were the following ecological integrity considerations taken into account?: 1.1.1. Threatened Ecosystems, 1.1.2. Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure, 1.1.3. Critical Biodiversity Areas ("CBAs") and Ecological Support Areas ("ESAs"), 1.1.4. Conservation targets, 1.1.5. Ecological drivers of the ecosystem, 1.1.6. Environmental Management Framework, 1.1.7. Spatial Development Framework, and 1.1.8. Global and international responsibilities relating to the environment (e.g. RAMSAR sites, Climate Change, etc.).	**The environmental sensitivities present on site will be assessed within the ecological impact assessment to be undertaken during the EIA phase of this project.** **The specialist will identify all ecological sensitive areas on site that have to be avoided by the proposed development as well as ecological sensitive areas and how to suitably develop within these areas so that the ecological integrity of the areas are maintained.** **The preliminary sensitivity map is included in Chapter 2 of this Scoping Report and will be further refined during the EIA Phase.**
1.2. How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	**The environmental sensitivities present on site will be assessed within the ecological impact assessment to be undertaken during the EIA phase of this project.** **The specialist will identify all ecological sensitive areas on site that have to be avoided by the proposed development as well as ecological sensitive areas and how to suitably develop within these areas so that the ecological integrity of the areas are maintained.** **The preliminary sensitivity map is included in Chapter 3 of this Scoping Report and will be**

NEED	
Question	**Response**
	further refined during the EIA Phase. **Measures to avoid, remedy, mitigate and manage impacts will be included within the Environmental Management Programme that will be compiled during the EIA Phase and included within the EIA Report.**
1.3. How will this development pollute and/or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	**Measures to avoid, remedy, mitigate and manage impacts will be included within the Environmental Management Programme that will be compiled during the EIA Phase and included within the EIA Report.**
1.4. What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether; what measures were explored to minimise, reuse and/or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?	**Measures to avoid, remedy, mitigate and manage impacts will be included within the Environmental Management Programme that will be compiled during the EIA Phase and included within the EIA Report.**
1.5. How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	**A Heritage Impact Assessment will be undertaken during the EIA Phase. A preliminary specialist Heritage profile is included in Chapter 3 of this Scoping Report and will be further refined during the EIA Phase**
1.6. How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	**Measures to avoid, remedy, mitigate and manage impacts will be included within the Environmental Management Programme that will be compiled during the EIA Phase and included within the EIA Report.**
1.7. How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardise the integrity of the resource and/or system taking into account carrying capacity restrictions, limits of	**The proposed project aims to harness the sun's light for the generation of electricity. This project is seen as a source of 'clean energy' and reduces the dependence on non-renewable sources, such as coal fired power plants.**

NEED	
Question	**Response**
acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts? 1.7.1. Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e. de-materialised growth)? (note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life) 1.7.2. Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e. what are the opportunity costs of using these resources this the proposed development alternative?) 1.7.3. Do the proposed location, type and scale of development promote a reduced dependency on resources?	**The proposed project is a sustainable option for the area and the proposed footprint will be placed to ensure avoidance and/or mitigation of any potential impacts to the receiving environment.**
1.8. How were a risk-averse and cautious approach applied in terms of ecological impacts?: 1.8.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)? 1.8.2. What is the level of risk associated with the limits of current knowledge? 1.8.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	**The precautionary approach has been adopted for this assessment, i.e. assuming the worst-case scenario will occur and then identifying ways to mitigate or manage these impacts.** **Current gaps in knowledge include the preferred technology to be used and the number of other solar facilities that will be developed at this site. Ways in which these gaps are addressed is to consider all types of solar technologies as part of the assessment and to consider the cumulative impact of all solar facilities being developed within the area.**

NEED	
Question	**Response**
1.9. How will the ecological impacts resulting from this development impact on people's environmental right in terms following: 1.9.1. Negative impacts: e.g. access to resources, opportunity costs, loss of amenity (e.g. open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts? 1.9.2. Positive impacts: e.g. improved access to resources, improved amenity, improved air or water quality, etc. What measures were taken to enhance positive impacts?	**This will be considered as part of the desktop review of previous social assessments undertaken in the area for similar types of projects.**
1.10. Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g. on livelihoods, loss of heritage site, opportunity costs, etc.)?	**This will be considered as part of the desktop review of previous social assessments undertaken in the area for similar types of projects.**
1.11. Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives / targets / considerations of the area?	**This will be considered as part of the desktop review of previous social assessments undertaken in the area for similar types of projects.**
1.12. Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations?	**Please refer to Chapter 5 of this Scoping Report.**
1.13. Describe the positive and negative cumulative ecological/biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area?	**Please refer to Chapter 6 of this Scoping Report.**
2.1. What is the socio-economic context of the area, based on, amongst other considerations, the following considerations?:	

NEED	
Question	**Response**
2.1.1. The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks of policies applicable to the area,	**The !Kheis Municipality Draft Integrated Development Plan (IDP) (2012 – 2017 and 2015 – 2019) states that an opportunity exists to utilise solar energy more widely and lessen the dependence on wood and fire. This opportunity has been identified because not all people within the municipal area have access to electricity. Even though this solar facility will not provide the municipality directly with electricity, the energy produced by the facility will feed into the national grid. Furthermore, the DEA have commissioned a Strategic Environmental Assessment (SEA) to identify the areas in South Africa that are of strategic importance for Wind and Solar PV development. The SEA aims to identify strategic geographical areas best suited for the roll-out of large scale wind and solar PV energy projects, referred to as Renewable Energy Development Zones (REDZs). The proposed solar facility falls within one of the potential eight REDZ areas. Therefore, should the REDZ be established and renewable projects operate within these areas, Eskom may be able to unlock funding to proactively construct grid infrastructure to facilitate generation capacity from these areas. This will mean that the municipality will also benefit from these upgrades and potentially alleviate the electrification backlogs present in the area.** **One of the priority issues identified within the !Kheis Municipality IDP (2012 – 2017 and 2015 – 2019) is the low levels of skilled people, as well as high levels of poverty and unemployment. The IDP (2012 – 2017 and 2015 – 2019) states that the objective to resolve this issue is to create an environment whereby the local community is empowered through capacity building and skills development (particularly for the youth). The proposed project will create job opportunities and economic spin offs during the construction and operational phases (if an EA is granted by the DEA). It is estimated that approximately 600 direct and 1000 indirect employment opportunities will be created during the construction phase. During the operational phase, approximately 50 direct and 150 indirect employment opportunities will be created. It should however be noted that employment during the construction phase will be**

NEED	
Question	**Response**
	temporary, whilst being long-term during the operational phase. **Therefore, the proposed SEF would help to address the need for increased electricity supply while also providing advanced skills transfer and training to the local communities and creating contractual and permanent employment in the area.** **The proposed activity does not compromise any of the objectives set within the !Kheis Municipality Draft IDP (2012 – 2017 and 2015 – 2019). The proposed project will also be supportive of the IDP's objective of creating more job opportunities. The proposed Solar Energy Facility will assist in local job creation during the construction and operation phases of the project (if an EA is granted by the DEA). However, as noted above, employment opportunities will be temporary during the construction phase and long-term during the operational phase as the facility is expected to be operational for 20 years.**
2.1.2. Spatial priorities and desired spatial patterns (e.g. need for integrated of segregated communities, need to upgrade informal settlements, need for densification, etc.),	**N/A the proposed project is located within a rural area and the site is zoned for agricultural use.**
2.1.3. Spatial characteristics (e.g. existing land uses, planned land uses, cultural landscapes, etc.)	**The impact on sensitive natural areas would be limited (however, this would need to be confirmed and determined as part of the EIA Phase of the proposed project). The impact of the proposed project on cultural/heritage areas (archaeology and palaeontology) will be assessed as part of the EIA Phase. Based on assessments that were done for the adjacent Mulilo Nieuwehoop Phase 1 Solar PV Project, these impacts on heritage resources are not anticipated to be significant.** **The preferred project site is currently being used for agricultural purposes, predominantly grazing. Should the proposed project proceed, approximately 300 ha of the land will be developed on and it is not expected that this will significantly threaten the agricultural activities present on site. A Soils and Agricultural Potential Study will be included within the EIA Report to**

NEED	
Question	**Response**
	reflect the impact of the proposed project in terms of the land use and agricultural potential. **As noted, an EMPr will be compiled for the proposed project to ensure that all potential negative impacts identified are suitably managed and mitigated, and potential positive impacts are enhanced. The impact on the sense of place is difficult to predict and would potentially be ambiguous. This is due to the subjective nature of perceptions regarding the relative attraction or disturbance of the solar facility in a rural landscape. The visual impact and considerations will be further assessed as part of the Visual Impact Assessment to be undertaken as part of the EIA Phase of this project. An environmental sensitivity map will also be created during the EIA Phase based on the input obtained from the various specialist studies. These sensitive features will be identified so that they can be avoided by the proposed layout of the proposed solar PV facility**
2.1.4. Municipal Economic Development Strategy ("LED Strategy").	**To be confirmed during the EIA Phase.**
2.2. Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area? 2.2.1. Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?	**To be addressed within the Social Impact Assessment that will be included within the EIA Phase.**
2.3. How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?	**To be addressed within the Social Impact Assessment that will be included within the EIA Phase.**
2.4. Will the development result in equitable (intra- and inter-generational) impact distribution, in the short- and longterm? Will the impact be socially and economically sustainable in the short- and long-term?	**To be addressed within the Social Impact Assessment that will be included within the EIA Phase.**
2.5. In terms of location, describe how the placement of the proposed development will:	
2.5.1. result in the creation of residential and	**N/A the proposed project is located within a rural**

NEED		
Question		**Response**
	employment opportunities in close proximity to or integrated with each other	**area and the site is zoned for agricultural use.**
2.5.2.	reduce the need for transport of people and goods	**N/A the proposed project is located within a rural area and the site is zoned for agricultural use.**
2.5.3.	result in access to public transport or enable non-motorised and pedestrian transport (e.g. will the development result in densification and the achievement of thresholds in terms public transport)	**N/A the proposed project is located within a rural area and the site is zoned for agricultural use. This project is a renewable energy project and not a transportation project.**
2.5.4.	compliment other uses in the area	**The preferred project site is currently being used for agricultural purposes, predominantly grazing. Should the proposed project proceed, approximately 900 ha of the land will be developed on and it is not expected that this will significantly threaten the agricultural activities present on site. A Soils and Agricultural Potential Study will be included within the EIA Report to reflect the impact of the proposed project in terms of the land use and agricultural potential.**
2.5.5.	be in line with the planning for the area	
2.5.6.	for urban related development, make use of underutilised land available with the urban edge	**N/A the proposed project is located within a rural area and the site is zoned for agricultural use.**
2.5.7.	optimise the use of existing resources and infrastructure	**The proposed project will connect to an existing Eskom Nieuwehoop Substation and will make use of the Transnet Service Road as an access road until the access road traverses the greater project area, i.e. enters farm Gemsbok Bult Portion 9.**
2.5.8.	opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g. not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement)	**N/A**
2.5.9.	discourage "urban sprawl" and contribute to compaction/densification	**N/A**
2.5.10.	contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs	**N/A the proposed project is located within a rural area and the site is zoned for agricultural use.**
2.5.11.	encourage environmentally sustainable land development practices and processes	**To be confirmed as part of the outcomes of the EIA Phase.**
2.5.12.	take into account special locational factors that might favour the specific location (e.g. the location of a strategic	**Please refer to Chapter 2 for a description of the process undertaken to identify the site is a preferred site for a Solar Energy Facility**

NEED	
Question	**Response**
mineral resource, access to the port, access to rail, etc.)	
2.5.13. the investment in the settlement or area in question will generate the highest socio-economic returns (i.e. an area with high economic potential)	**To be addressed within the Social Impact Assessment that will be included within the EIA Phase.**
2.5.14. impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and	**The impact on sensitive natural areas would be limited (however, this would need to be confirmed and determined as part of the EIA Phase of the proposed project). The impact of the proposed project on cultural/heritage areas (archaeology and palaeontology) will be assessed as part of the EIA Phase. Based on assessments that were done for the adjacent Mulilo Nieuwehoop Phase 1 Solar PV Project, these impacts on heritage resources are not anticipated to be significant.**
2.5.15. in terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?	**Several Solar Energy Facilities are proposed in the area, which lends itself potentially to a renewable energy development area.** **The proposed solar facility falls within one of the potential eight REDZ areas. Therefore, should the REDZ be established and renewable projects operate within these areas, Eskom may be able to unlock funding to proactively construct grid infrastructure to facilitate generation capacity from these areas. This will mean that the municipality will also benefit from these upgrades and potentially alleviate the electrification backlogs present in the area.**
2.6. How were a risk-averse and cautious approach applied in terms of socio-economic impacts?:	
2.6.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?	**To be addressed within the Social Impact Assessment that will be included within the EIA Phase.**
2.6.2. What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge?	
2.6.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	

<table>
<tr><th colspan="2">NEED</th></tr>
<tr><th>Question</th><th>Response</th></tr>
<tr><td colspan="2">2.7. How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following:</td></tr>
<tr><td>2.7.1. Negative impacts: e.g. health (e.g. HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?</td><td rowspan="6">To be addressed within the Social Impact Assessment that will be included within the EIA Phase.</td></tr>
<tr><td>2.7.2. Positive impacts. What measures were taken to enhance positive impacts?</td></tr>
<tr><td>2.8. Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socioeconomic impacts will result in ecological impacts (e.g. over utilisation of natural resources, etc.)?</td></tr>
<tr><td>2.9. What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?</td></tr>
<tr><td>2.10. What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?</td></tr>
<tr><td>2.11. What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?</td></tr>
<tr><td>2.12. What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?</td><td></td></tr>
<tr><td colspan="2">2.13. What measures were taken to:</td></tr>
</table>

NEED	
Question	**Response**
2.13.1. ensure the participation of all interested and affected parties	**The PPP to be undertaken as part of the Scoping and EIA process is included in the Final Scoping Report. Various methods have been employed to notify potential (I&APs) of the proposed project, namely, through adverts, sites notices on site and in Kenhardt and notification letters.**
2.13.2. provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation	
2.13.3. ensure participation by vulnerable and disadvantaged persons	
2.13.4. promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means	**The EIA process will take cognisance of all interests, needs and values espoused by all interested and affected parties. Opportunity for public participation will be provided to all I&APs throughout the EIA process in terms of the 2014 EIA Regulations, as amended.**
2.13.5. ensure openness and transparency, and access to information in terms of the process	**The PPP to be undertaken as part of the Scoping and EIA process have been included within the Final Scoping Report. Various methods will be employed to notify potential I&APs of the proposed project, namely, through adverts, sites notices on site and in Kenhardt and notification letters.**
2.13.6. ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge	**The EIA process will take cognisance of all interests, needs and values adopted by all interested and affected parties.**
2.13.7. ensure that the vital role of women and youth in environmental management and development were recognised and their full participation therein were be promoted	**Public participation of all I&APs has been promoted and opportunities for engagement will be provided during the EIA process.**
2.14. Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g.. a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)?	**To be addressed within the Social Impact Assessment that will be included within the EIA Phase.**
2.15. What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?	**An EMPr will be developed to address health and safety concerns. An Environmental Control Officer will be appointed to monitor compliance.**

NEED	
Question	**Response**
2.16. Describe how the development will impact on job creation in terms of, amongst other aspects:	
2.16.1. the number of temporary versus permanent jobs that will be created	**To be addressed within the Social Impact Assessment that will be included within the EIA Phase.**
2.16.2. whether the labour available in the area will be able to take up the job opportunities (i.e. do the required skills match the skills available in the area)	
2.16.3. the distance from where labourers will have to travel	
2.16.4. the location of jobs opportunities versus the location of impacts (i.e. equitable distribution of costs and benefits)	
2.16.5. the opportunity costs in terms of job creation (e.g. a mine might create 100 jobs, but impact on 1000 agricultural jobs, etc.)	
2.17. What measures were taken to ensure:	
2.17.1. that there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment	**To be determined during the EIA Phase (following the Public Participation Phase undertaken as part of the Scoping Phase)**
2.17.2. that actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?	**To be determined during the EIA Phase (following the Public Participation Phase undertaken as part of the Scoping Phase)**
2.18. What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?	**To be determined during the EIA Phase**
2.19. Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?	**To be determined during the EIA Phase**
2.20. What measures were taken to ensure that he costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment?	**To be determined during the EIA Phase**
2.21. Considering the need to secure ecological	**It would be premature to decide on the**

NEED	
Question	**Response**
integrity and a healthy bio-physical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?	**environmental practicability of the proposed development prior to the completion of the impact assessment phase of this EIA Process. However, at first glance, the long-term viability of agriculture (i.e. the existing land-use) on the proposed project site seems to be marginal and subject to global economic and climatic change variables which directly impacts on its practicability. The proposed solar energy facility would however be more robust in terms of economic viability and profitability while also being largely uninfluenced by climate change variables. The proposed project would also provide the farm owner with additional income by way of lease agreements (as explained above) and may also contribute to local socio-economic upliftment through job creation.**
2.22. Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area?	**The potential cumulative impacts resulting from the proposed project can only be objectively determined at the end of the EIA Process. These will be assessed as part of the EIA. Similar types of projects that are being undertaken or are proposed to be undertaken (e.g. other solar PV Projects within 20 km of the proposed project**

1.6. EIA Team

As previously noted, the CSIR has been appointed by juwi to undertake the EIA required for the proposed project. Public participation forms an integral part of the EIA Process and assists in identifying issues and possible alternatives to be considered during the EIA Process. The CSIR is undertaking the PPP for this EIA. Details on the PPP are included in Chapter 4 of this Scoping Report.

The EIA team which is involved in this Scoping and EIA Process is listed in Table 1.5 below. This team includes a number of specialists which have either been involved to date, or are planned to provide inputs during the EIA Process.

Table 1.5: The EIA Team

NAME	ORGANISATION	ROLE/STUDY TO BE UNDERTAKEN
Environmental Management Services (CSIR)		
Paul Lochner	CSIR	Technical Advisor and Quality Assurance (EAPSA) Certified
Surina Laurie	CSIR	Project Leader (*Pr. Sci. Nat.)*
Kelly Stroebel	CSIR	Project Manager (Appointed EAP)
Babalwa Mqokeli	CSIR	Project Officer

NAME	ORGANISATION	ROLE/STUDY TO BE UNDERTAKEN
Specialists		
Simon Bundy	Sustainable Development Projects (SDP)	Ecological Impact Assessment (including Terrestrial Ecology)
Jon Smallie	Wild Skies Ecological Services	Avifauna Impact Assessment
Luanita Snyman-Van der Walt	CSIR	Visual Impact Assessment
Dr. Jayson Orton	ASHA Consulting (Pty) Ltd	Heritage Impact Assessment (Archaeology and Cultural Landscape)
Dr. John Almond	Natura Viva cc	Desktop Palaeontological Impact Assessment

Due to the proximity of the proposed project to identical projects, existing information will be used to provide impact statements for soils and agricultural potential, social issues and traffic. These impact statements will be included in the DEIAR and will be reviewed by qualified specialists in the respective fields.

juwi has appointed the services of an Square Kilometre Array (SKA) approved specialist to conduct RFI and Electromagnetic Interference (EMI) based studies to determine the level of mitigation shielding required in order to comply with the SKA Regulations. Please refer to Chapter 6 (Section 6.10) of this Scoping Report for more information, as well as Chapter 7 for the ToR's for the RFI study. The findings of this assessment will be provided to the SKA for consideration and comment.

1.7. Details and Expertise of the Environmental Assessment Practitioner

Kelly Stroebel is a Junior EAP in the EMS group of the CSIR and holds an Honours degree in Environmental Science. She has been the Project Manager of several EIAs in South Africa and several Basic Assessments for the Special Needs and Skills Development Programme. She has also assisted in the SIP projects including the National Wind & Solar Strategic Environmental Assessment (SEA) and Electricity Grid Infrastructure SEA which were commissioned by the national Department of Environmental Affairs.

Kelly will be supported by the EIA Project Team as outlined within Table 1.5.

1.8. Objectives for this Scoping Report

The Scoping Phase of the EIA refers to the process of determining the spatial and temporal boundaries for the EIA. In broad terms, the objectives of the Scoping Process in terms of the 2017 NEMA EIA Regulations, as amended (GN R326) are to:

- Confirm the process to be followed and opportunities for stakeholder engagement;
- Clarify the project scope to be covered;
- Identify and confirm the preferred activity and technology alternative;
- Identify and confirm the preferred site for the preferred activity;
- Identify the key issues to be addressed in the impact assessment phase and the approach to be followed in addressing these issues; and
- Confirm the level of assessment to be undertaken during the impact assessment.

This is achieved through parallel initiatives of consulting with:

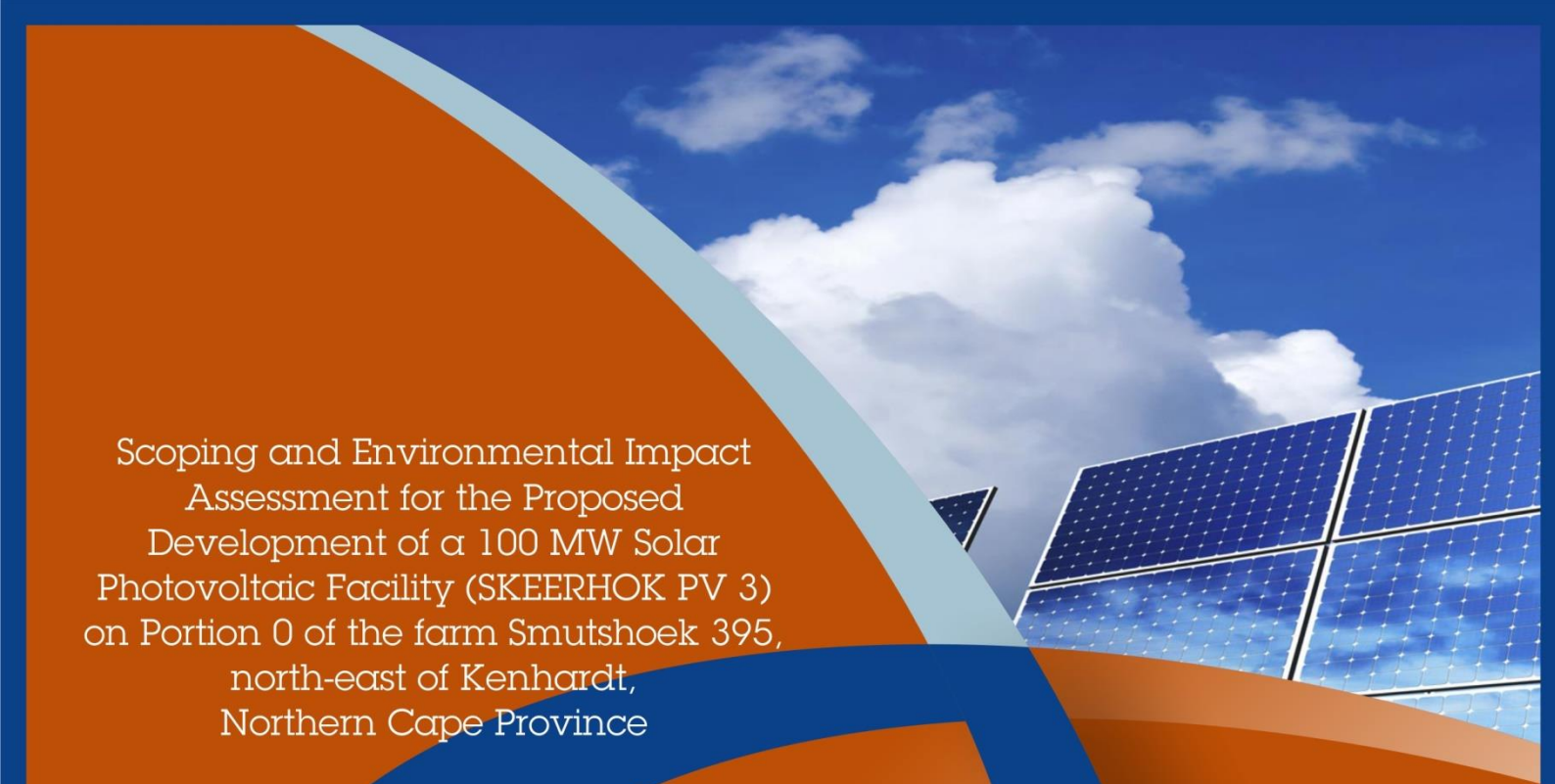
- The lead authorities involved in the decision-making for this EIA application;
- The public to ensure that local issues are well understood; and
- The EIA specialist team to ensure that technical issues are identified.

The Scoping Process is supported by a review of relevant background literature on the local area. Through this comprehensive process, the environmental assessment can identify and focus on key issues requiring further assessment during the EIA Phase.

The primary objective of the Scoping Report is to present key stakeholders (including affected organs of state) with an overview of the proposed project and key issues that require assessment in the EIA Phase and allow the opportunity for the identification of additional issues that may require assessment.
Issues raised in response to this Scoping Report (currently being released for a 30-day comment period) will be captured in the Issues and Responses Trail and will be included in the finalised Scoping Report and Plan of Study for EIA, which will be submitted to the DEA for decision-making (i.e. approval or rejection) in line with Regulation 21 (1) of GN R326. This approval is planned to mark the end of the Scoping Phase after which the EIA Process moves into the impact assessment and reporting phase.

In terms of legal requirements, a crucial objective of the Scoping Report is to satisfy the requirements of Appendix 2 of the amended 2014 NEMA EIA Regulations (as noted in Regulation 21 (3) of the GN R326). This section regulates and prescribes the content of the Scoping Report and specifies the type of supporting information that must accompany the submission of the Scoping Report to the authorities. An overview of where the requirements of Appendix 2 of the 2014 NEMA EIA Regulations are addressed in this Scoping Report is presented in Table 1.2.

Furthermore, this process is designed to satisfy the requirements of Regulations 41, 42, 43 and 44 of the 2014 NEMA EIA Regulations relating to the PPP and, specifically, the registration of and submissions from I&APs.



Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

FINAL SCOPING REPORT

CHAPTER 2: *Project Description*

CONTENTS

TABLES

FIGURES

2. PROJECT DESCRIPTION

This chapter provides an overview of the conceptual project design and an overview of the site and technology selection process for the Skeerhok PV 3 Solar Energy Facility (SEF), as provided by juwi.

The purpose of this chapter is to present sufficient project information to inform the Scoping and EIA Process in terms of design parameters applicable to the project. It is important to note that the project description details are preliminary at this stage and it is likely that some of the details presented herein may change during the detailed design phase and upon further investigations (including the findings and input of the specialist studies conducted during the EIA Phase of the proposed project).

As noted previously, the proposed project will take place on Portion 0 of Smutshoek Farm 395 (Surveyor General 21-Digit Code: C03600000000039500000) near Kenhardt in the Northern Cape (Figure 2.1). The co-ordinates of the boundary/corner points of the preferred project site (Skeerhok PV 3) are shown in Table 2.1 below.

Table 2.1: Co-ordinates of the Corner Points of the Preferred Project Site

Site	Point	Latitude	Longitude
Skeerhok PV 3	North-West	29° 02' 11.98"S	21° 23' 43.23"E
	North- East	29° 02' 08.03"S	21° 25' 07.37"E
	East	29° 02' 30.86"S	21° 25' 15.57"E
	South-West	29° 03' 21.59"S	21° 23' 54.84"E

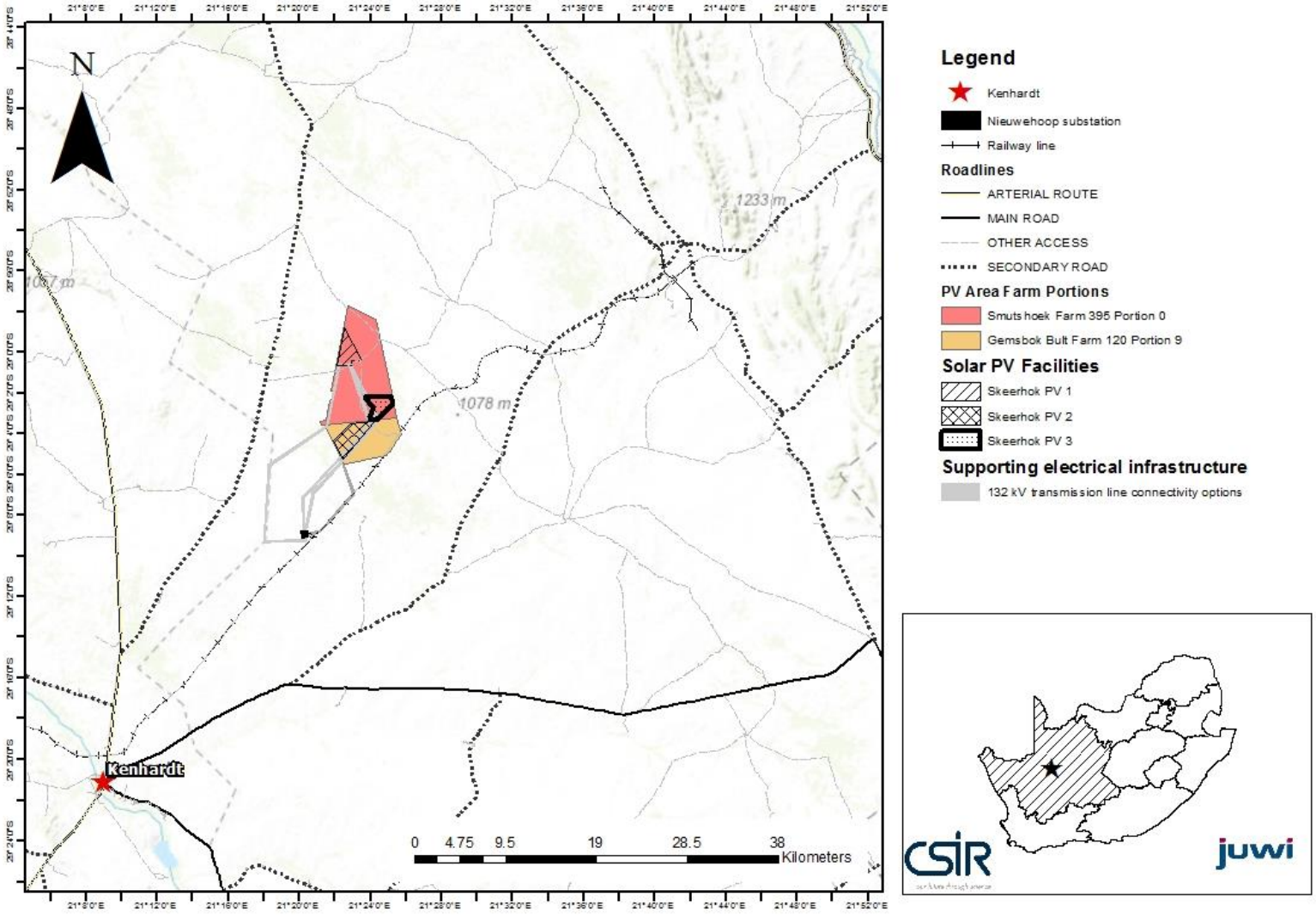


Figure 2.1: Proposed Locality of the proposed Skeerhok PV 3, (including the power line routing, subject to a separate BA process)

2.1. Key Components of the Proposed Solar Energy Facility

A summary of the key components of the proposed project is described below. It is important to note at the outset that the exact specifications of the proposed project components will be determined during the detailed engineering phase.

The project is being developed with a maximum possible installed capacity of 114 MW DC each which produces 100 MW AC of electricity. As mentioned in Chapter 1 of this Scoping Report, once commercial operation date is achieved, the proposed facility will generate electricity for a minimum period of 20 years. The property on which the SEF is to be constructed will be leased by the project owner from the property owners for the life span of the project. The preferred project site includes approximately 337 ha of land in total. Due to the fact that the solar PV facility requires approximately 300 ha of land there is spatial scope to avoid major environmental constraints through optimisation of the final design of the Solar Facility.

Cumulatively, the total area of the properties (not the proposed facility footprints) where the overall proposed 3 SEFs will be constructed on comprises approximately of 6,500 ha (this includes approximately 4,500 ha and 2,000 ha for Portion 0 of Smutshoek Farm 395 and Portion 9 of Gemsbok Bult Farm 120, respectively). The total development area (area under consideration for this assessment) of the 3 SEFs is approximately 900 ha, which accounts for 14 % of the total area of the farms.

The two main components of the project will consist of the solar field (solar panels and building infrastructure) and the associated infrastructure. The technical components forming part of the Solar Facility are discussed in detail in Sections 2.2 and 2.3 below.

The Solar Facility will consist of the following components:

- ***Solar Field:***
  - ≤250 ha Free Field Single Axis Tracker or fixed tilt PV – 114 MW DC;
  - Solar module mounting structures comprised of galvanised steel and aluminium; and
  - below ground electrical cables connecting the PV arrays to the inverter stations, O&M building and collector substation; and
  - Inverters and mini-subs.

- ***Collector substation:***
  - ≤1 ha 22/33 kV to 1132 kV collector substation to receive, convert and step up electricity from the PV facility to the 132 kV grid suitable supply. The facility will house control rooms and grid control yards for both Eskom and the Independent Power Producer. A 32 m telecommunications tower (lattice or monopole type) will be established in the substation area.

- ***O&M area:***
  - Operations and Maintenance (O&M) buildings;
  - ≤1 ha hectare O&M laydown area (near / adjacent substation);
  - ≤0.01 ha solar measuring station;
  - Parking, reception area, offices, guest accommodations and ablution facilities for operational staff, security and visitors;
  - Workshops, storage areas for materials and spare parts;

- Water storage tanks or lined ponds (~160 kl/day during first 3 months; ~90 kl/day for 21 months during rest of construction period; ~20 kl/day during operation);
- Septic tanks and sewer lines to service ablution facilities; and
- Central Waste collection and storage area.

- ***Battery Storage System:***
  - 100 MW Battery Storage Facility with a maximum height of 8m and a maximum volume of 1,120 m^3 of batteries (dangerous goods) and associated operational, safety and control infrastructure.

- ***Access road:***
  - ≤15 km long, ≤8 m wide gravel access road running from the Transnet Service Road to the site.

- ***Service roads:***
  - ≤10 km of ≤4 m wide gravel internal service roads within the plant boundary;.

- ***Other infrastructure:***
  - Perimeter fencing and internal security fencing and gates as required.
  - Access control gate and guard house on access road;
  - ≤3.5 km length of small diameter water supply pipeline connecting existing boreholes to storage.
  - Stormwater channels.

- ***Construction Site office area (used during construction and rehabilitated thereafter):***
  - ≤1 ha site office area;
  - ≤ 20 ha laydown area; and
  - ≤1 ha concrete batching plant.

The Skeerhok PV 3 project will connect to the Eskom Nieuwehoop Substation located on Portion 3 of Gemsbok Bult Farm 120 via a 132 kV overhead transmission line (the development of the 132 kV line will be considered under a separate Basic Assessment process).

2.2. Solar Field

The Solar Field will consist of the solar arrays (panels) and building infrastructure.

- ***Solar Arrays***

The footprint of the proposed SEF is estimated to be approximately 300 ha and will include the development of the solar field including electrical infrastructure, the structure of the solar array and foundations. The exact number of solar panels arrays, confirmation of the foundation type and detailed design will follow as the development progresses.

- ***PV Modules***

The smallest unit of a PV installation is a cell. A number of cells form a module, and finally a number of modules form the arrays (Figure 2.2Figure 2.2).

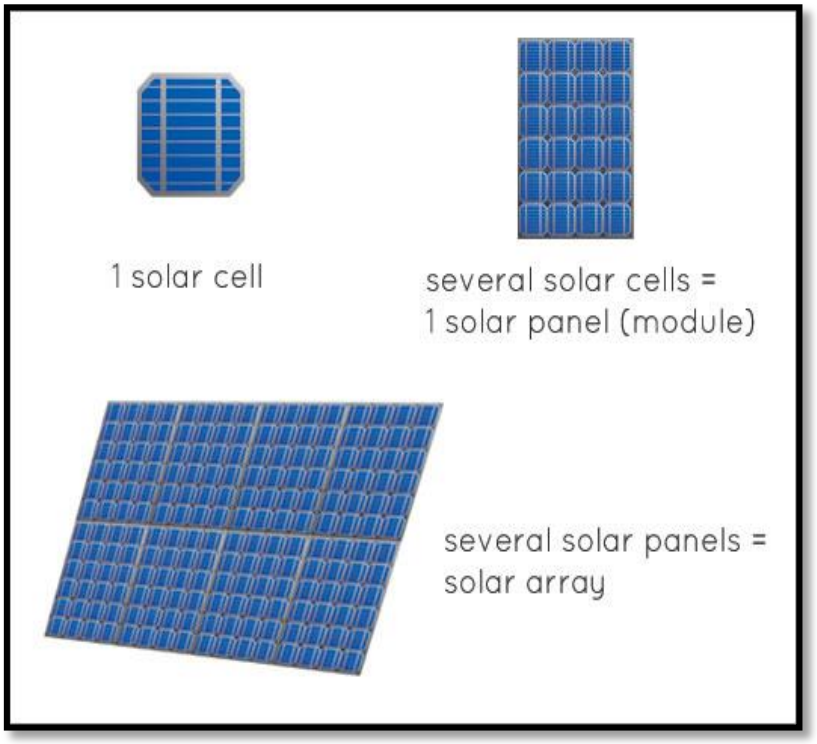


Figure 2.2: Components of the Proposed PV Installation (Source: Go Greena, 2013*)*

Modules are arranged into strings that form the solar field. Modules are arranged in section sizes of approximately 40 m x 5 m sections called tables and are installed on racks which are made of aluminium or galvanised steel. The arrays and racks will be mounted above the ground through either steel or concrete towers (which will be confirmed during the detailed engineering phase), as shown in Figure 2.3. The entire structure is not expected to exceed 10 m in height (measured from the ground).

All the arrays will be wired to inverter stations that convert the DC power into AC power.

Figure 2.3: PV Technology

- ***Mounting System***

Solar panels can be mounted in various ways to ensure maximum exposure of the PV panels to sunlight. The four main mounting systems considered as part of the EIA are:

- Single axis tracking systems;
- Fixed axis tracking systems;
- Dual axis tracking systems; and
- Fixed tilt mounting structures.

In a fixed axis tracking system, the PV panels are installed at a set tilt facing north and cannot move, whereas in a single axis tracking system the panels follow the sun (i.e. east to west) to ensure maximum exposure to sunlight. In a dual axis tracking system, the PV panels can follow the sun from east to west, as well as follow the suns altitude (which results in an optimal angle of radiation onto the panel (Vermaak, 2014)). Dual axis tracking systems can therefore follow the sun throughout the day both horizontally and vertically. The type of mounting system will be confirmed during the detailed engineering phase.

- ***Building Infrastructure***

The solar field will require on-site buildings, including operations and maintenance on-site substation and substation building, laydown areas and security enclosures. The on-site substation is expected to extend approximately 32 m in height, with a maximum footprint of 100 m x 100 m (≤1 ha). Ablution facilities are likely to be incorporated into the office structures occupying an area of roughly 30 m x 30 m. The buildings will likely be of single storey design. The buildings are required to support the functioning of the facility and to provide services to personnel that will operate and maintain the facility. The building infrastructure for both technology types will be the same. Detailed design will follow as the development progresses.

2.3. Associated Infrastructure

- ***Electrical Infrastructure***

As mentioned above, the solar arrays are typically connected to each other in strings, which are in turn connected to inverters that convert DC current to AC current. The strings will be connected to the inverter stations by low voltage underground (internal) DC cables. Power from the inverter stations will be transformed from low to medium voltage (22kV) at the medium voltage transformers. From here the energy passes to the Ring Main Units which are connected in series to the proposed on-site substation, via medium voltage underground cables (22/33 kV). The voltage is again stepped up to 132kV at the onsite sub and the power produced transmitted via a 132 kV overhead transmission line into the national grid system at the Eskom Nieuwehoop substation on Portion 3 of Gemsbok Bult Farm 120. An overhead 132 kV transmission line will be constructed for the SEF and will extend between the proposed on-site substation and the Eskom Nieuwehoop Substation. It will be constructed with steel or concrete tower structures. The length of the proposed overhead line, connecting the on-site substation to the Nieuwehoop Substation is approximately 15 km.

It is quite possible that the project owner will implement the Self-Build Option for the additional electrical infrastructure to be constructed (which includes the 132 kV transmission line and additional feeder bay(s), busbar(s), 400/132 kV transformer and a transformer bay at the Eskom Nieuwehoop Substation). Following the construction phase, the proposed electrical infrastructure will either be transferred into the ownership of Eskom or remain in the ownership of the proponent.

Please note that the construction of the 132 kV transmission line, service road below transmission line, the feeder bays, busbars, 400/132 kV transformer and transformer bay at the Eskom Substation will be subject to a separate BA process and will not be considered as part of this Scoping and EIA process.

Detailed design will follow as the development progresses.

- ***Roads***

The main access road will be the National Road, the R27, and an existing Transnet Service Road leading to the site. The R27 extends from Keimoes, which is the most northern point of the road, to Vredendal in the south. The R27 is 6 m wide and falls within a 45 m road reserve. This National Road is designed for minimum daily traffic exceeding 1000 vehicle units. The Transnet Service Road is 7-8 m wide. It is proposed that an internal gravel access road be constructed from this Transnet Service Road to the proposed site. This road is not expected to be more than 6 m wide. The length of the internal roads will be confirmed as the location, design and layout of the facility progresses. Discussions will be held between the Project Applicant and Transnet Freight Rail during the EIA Phase regarding the potential use of the Transnet Road and any specific associated requirements.

- ***Fencing***

For various reasons (such as security, public protection and lawful requirements), the proposed facility will be secured via the installation of boundary fencing. The fencing is planned to be approximately 3 m high. Access points will be managed and monitored by an appointed security service provider. The type of fencing is yet to be determined; however it may be a fully electrified option. Detailed design will follow as the development progresses.

- ***Panel Maintenance and Cleaning***

The accumulation of dust on solar panels generally negatively influences the productivity of the Solar Facility. As such the panels require regular cleaning. Cleaning and maintenance of the panels will require water. It is proposed that panel cleaning will take place quarterly; however this may be revised should the site conditions warrant more frequent cleaning. Should municipal water be delivered to site it will be stored on site in suitable containers during the operational phase. It is estimated that 7000 kilolitres of water will be used annually for the cleaning of the solar panels, road maintenance and general employee usage during the operational phase (the project has a minimum lifespan of 20 years). It is estimated that during the first 3 months of construction approximately 160 kL/day predominantly for road construction. For the remaining 21 months of construction approximately 90 kL/day

- ***Stormwater Channels***

Although care has been taken to avoid drainage areas, if required, stormwater channels will be constructed on the site to ensure that stormwater run-off from the site is appropriately managed. Water from these channels will not contain any chemicals or hazardous substances, and will be released into the surrounding environment based on the natural drainage contours.

- ***Battery storage facility***

It is proposed that a nominal 100 MWh Battery Storage Facility for grid storage would be housed in stacked containers, or multi-storey building, with a maximum height of 8 m and a maximum volume of 1,120 m^3 of batteries and associated operational, safety and control infrastructure. Three types of battery technologies are being considered for the proposed project: Lithium-ion, Sodium-sulphur or Vanadium Redox flow battery.

Battery storage offers a wide range of advantages to South Africa including renewable energy time shift, renewable capacity firming, electricity supply reliability and quality improvement, voltage regulation, electricity reserve capacity improvement, transmission congestion relief, load following and time of use energy cost management. In essence, this technology allows renewable energy to enter the base load and peak power generation market and therefore can compete directly with fossil fuel sources of power generation and offer a truly sustainable electricity supply option.

- ***Batching plant***

A concrete batching plant is proposed as part of the Construction Site office area, with a footprint of approximately 1 ha.

2.4. Overview of Project Development Cycle

2.4.1. Construction Phase

The construction phase will take place subsequent to the issuing of a positive EA from the DEA and once a power purchase agreement (PPA) with a suitable energy off-taker is signed, this could be Government or private. The construction phase is expected to be approximately 12 - 24 months for the proposed Solar PV Facility.

The construction phase will involve the transportation of personnel, construction material and equipment to the site, and personnel away from the site (the personnel that will not be accommodated on-site). In terms of site establishment, laydown areas will be required at the outset of the construction phase, as well as dedicated access routes from the laydown areas to the working areas. Haul roads for construction traffic (for the delivery of concrete, road materials and other construction materials) will be required, as described in Section 2.3 above.

The laydown area will either be located adjacent to or at the project site. It is expected that the laydown area will be temporary in nature (for the duration of the construction phase) and will include the establishment of the construction site camp (including site offices and other temporary facility for the appointed Contractors). The laydown area is expected to cover a maximum area of 20 ha. If the laydown area is located outside of the footprint of the SEF itself, the area will thereafter be rehabilitated (i.e. returned to its pre-construction condition) at the end of the construction phase.

All efforts will be made to ensure that all construction work will be undertaken in compliance with local, provincial and national legislation, local and international best practice, as well as the Environmental Management Programme (EMPr), which will be compiled during the EIA Phase and included in the EIA Report. During the construction phase, both skilled and unskilled temporary employment opportunities will be created. It is difficult to specify the actual number of employment opportunities that will be created at this stage; however approximately 600 direct and 1000 indirect employment opportunities are expected to be created during the construction phase. It should however be noted that employment during the construction phase will be temporary, whilst being long-term during the operational phase.

2.4.2. Operational Phase

The proposed SEF will possibly become operational by 2021. The following activities will occur during the operational phase:

- Generation of 100 MW AC of electricity to add to the national grid;
- Storage of 100 MWh of energy; and
- Maintenance of the SEF, including washing of panels (as explained in Section 2.3).

The projected operations are expected to provide several services and added economic spin offs (as highlighted in Chapter 1 of this Scoping Report). The proposed SEF is expected to generate electricity for a minimum period of 20 years. The operational phase of the project is expected to create skilled employment opportunities. However, other opportunities may arise for unskilled labour to be integrated to the ancillary activities. During the operational phase, approximately 50 direct and 150 indirect opportunities will be created over the 20 year lifespan of the proposed facility.

2.4.3. Decommissioning Phase

The main aim of decommissioning is to return the land to its original, pre-construction condition. Should the unlikely need for decommissioning arise (i.e. if the SEF becomes outdated or the land needs to be used for other purposes), the decommissioning procedures will be undertaken in line with the EMPr and any legislation or guidelines relevant at the time and the site will be rehabilitated and returned to the pre-construction state.

Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

FINAL SCOPING REPORT

CHAPTER 3:

Description of the Affected Environment

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TABLES

FIGURES

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT

This chapter of the Scoping Report provides an overview of the affected environment for the proposed Skeerhok PV 3 project and the surrounding region. The receiving environment is understood to include biophysical, socio-economic and heritage aspects which could be affected by the proposed development or which in turn might impact on the proposed development.

This information is provided to identify the potential issues and impacts of the proposed project on the environment. The information presented here has been sourced from:

- Scoping input from the specialists that form part of the project team;
- Scoping inputs from the Scoping Reports of the proposed Mulilo Renewable Project Development's Nieuwehoop Phase 1 and Phase 2 Solar PV projects proposed adjacent to the proposed Skeerhok PV 3 project (this project);
- Review of information available on the South African National Biodiversity Institute (SANBI) Biodiversity Geographical Information System (BGIS) and Agricultural Geo-Referenced Information System (AGIS); and
- !Kheis Local Municipality and ZF Mgcawu District Municipality IDPs and the Northern Cape PSDF.

It is important to note that this chapter intends to provide an overview and does not represent a detailed environmental study. Detailed studies focused on significant environmental aspects of this project within the development footprint of the project will be provided during the EIA Phase.

3.1. Background

The proposed project is located on Portion 0 of the Farm Smutshoek 395 near Kenhardt in the Northern Cape Province. The total farm property is approximately 4500 ha in size and the development footprint is 300 ha for Skeerhok PV 3. As previously noted, the site is located approximately 43 km north-east of Kenhardt, in the ZF Mgcawu District Municipality and the !Kheis Local Municipality in the Northern Cape Province. The co-ordinates of the corner points of the preferred project area are provided in Chapter 2 of this Scoping Report. Figure 3.1 provides a locality map of the proposed project area within a regional setting.

3.2. Preliminary Sensitivity Screening

Based on the preliminary sensitivity screening undertaken for the sites, the proposed project area does not fall within any threatened ecosystem, National Protected Areas, National Protected Area Expansion Strategy (NPAES) Focus Areas or areas of conservation planning. There is no conservation plan for the !Kheis Local Municipality and the ZF Mgcawu District Municipality, hence Critical Biodiversity Areas (CBAs) are not present or defined. The proposed SEF falls within the *Bushmanland Arid Grassland* veld type (NKb3), which is an extensive habitat form, located primarily to the south of the Orange River, but may include a number of smaller habitat forms within its broader extent. This type of vegetation is classified as *Least threatened* (i.e. this vegetation type is not listed as Threatened Ecosystems under the National Environmental Biodiversity Act (NEMBA)). In terms of the National Biodiversity Assessment (NBA) (2011), rivers are classified into critically endangered, endangered, vulnerable and least threatened. Two drainage features flow in close proximity to the farms of the proposed SEF, one of these is the *NRougas se Loop* flowing towards the Smutshoek Farm 395 and an unnamed drainage feature

running towards Portion 9 of Gemsbok Bult Farm 120. These features are classified as Class B (Largely Natural) National Freshwater Ecosystems Protected Areas (NFEPA) (Figure 3.9).

Figure 3.1 represents the regional setting of the proposed Skeerhok PV 3 project with relation to drainage features.

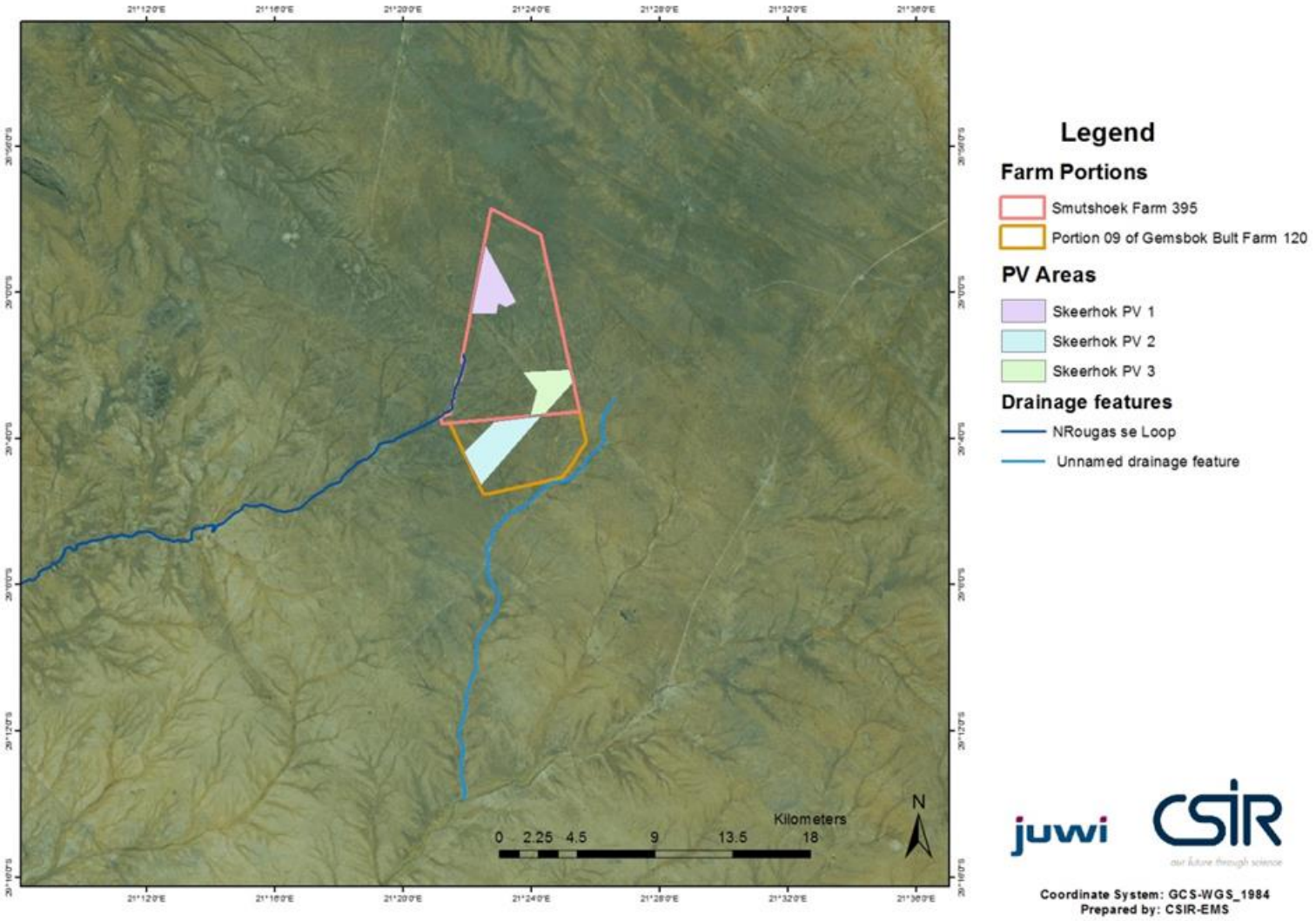


Figure 3.1: Locality Map for the proposed Skeerhok PV 3 Project with relation to drainage features

3.3. Biophysical Environment

3.3.1. Climatic Conditions

The mean annual rainfall of South Africa is shown in Figure 3.2 below. The climate of the Northern Cape is semi-arid with a late summer-autumn rainfall regime. Average rainfall of the area varies from 50 mm to 400 mm per year. Evaporation levels within this province exceed the annual rainfall. Climate conditions are extreme (i.e. very cold in winter and extremely hot in summer).

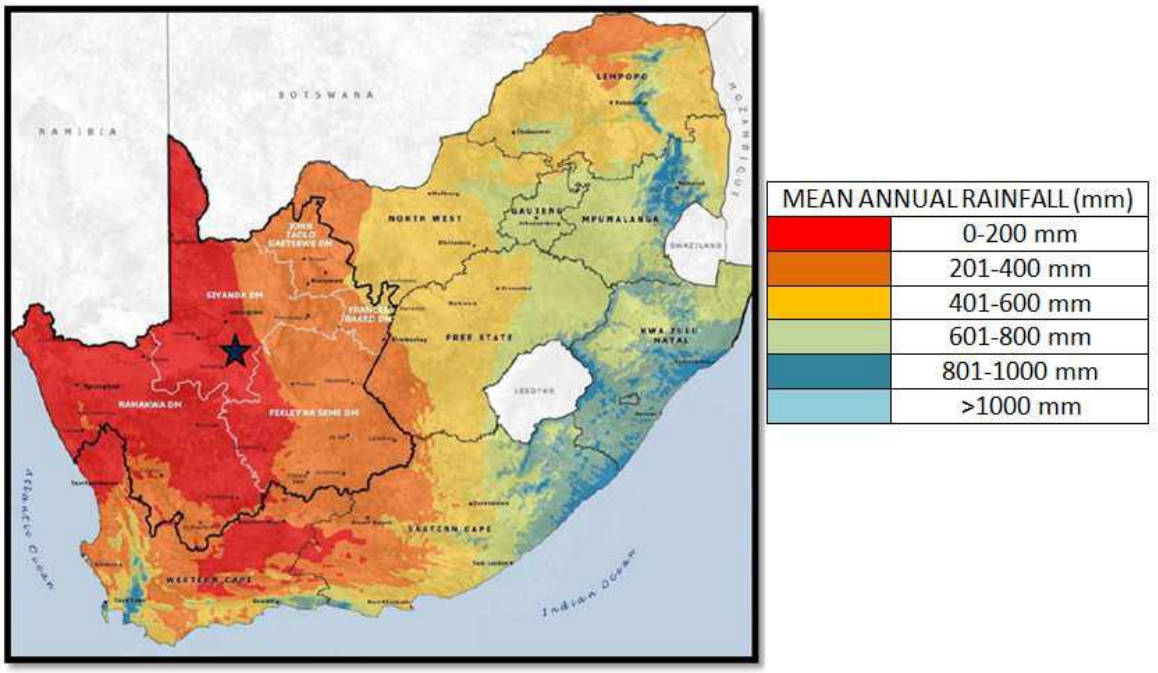


Figure 3.2: Mean Annual Rainfall Levels of South Africa (Source: Northern Cape PSDF, 2012)

Figure 3.3 shows the average rainfall and rainy days in Kenhardt for 2016, and Figure 3.4 shows the average rainfall and evaporation for Kenhardt in 2015. The lowest rainfall occurrence was in June (0 mm) and the highest rainfall occurrence was in January 2016 (43.81 mm). Since the area receives most of its rainfall during autumn (March to May), it has a semi-arid to arid climate. The relevance of this information is that rainfall occurs whilst temperatures are still quite high and therefore the associated evaporation rates will be high. This implies that groundwater recharge will be will need to be assessed prior to construction.

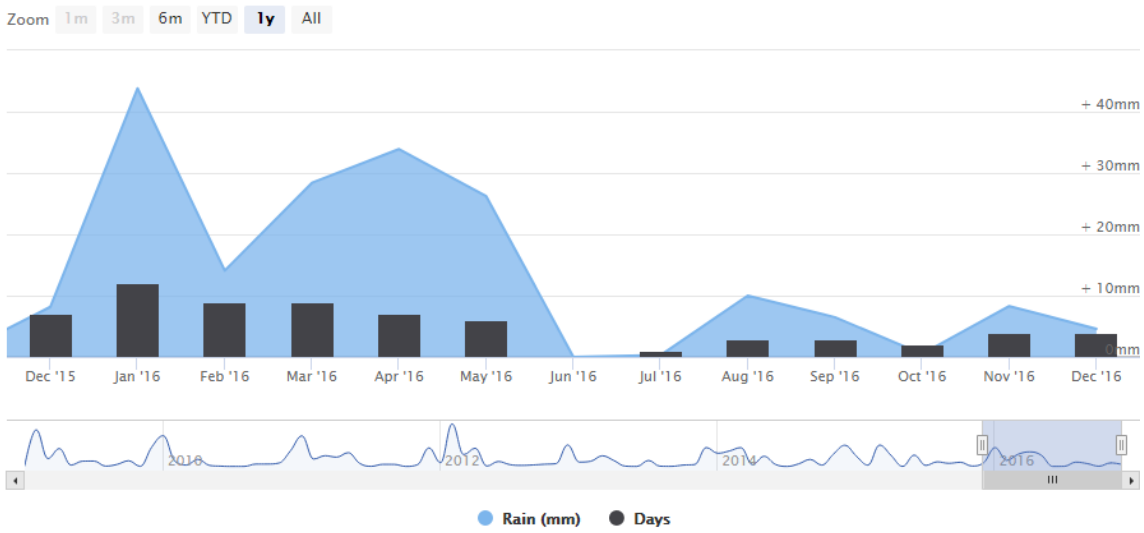


Figure 3.3: Mean Rainfall Levels and Rainy Days for Kenhardt in 2016 (Source: WeatherOnline.com)

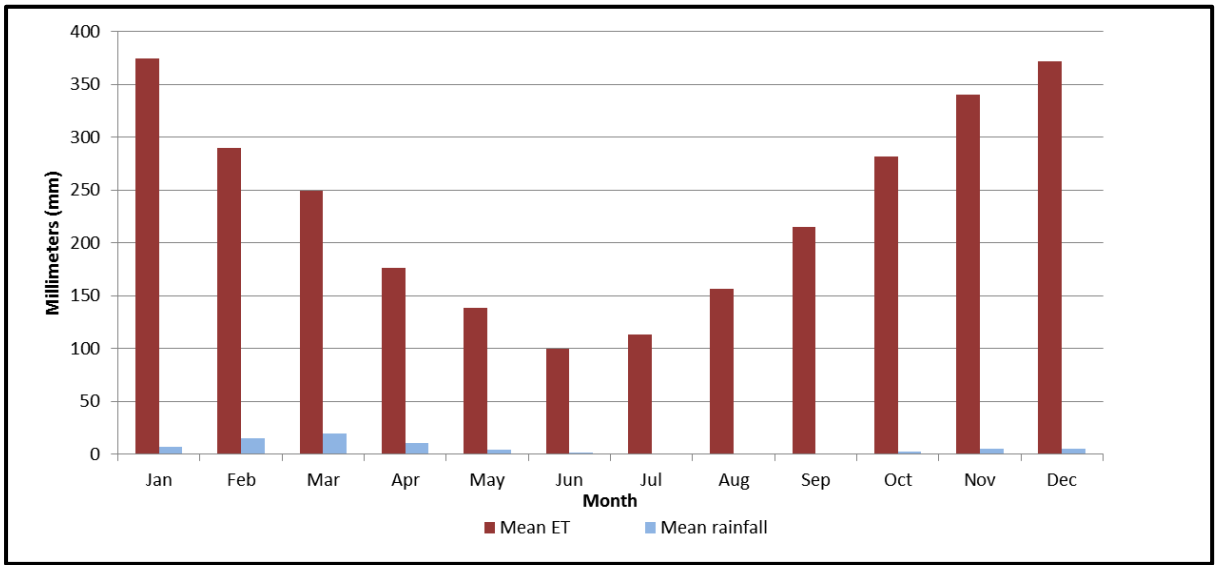


Figure 3.4: Long Term Average Rainfall and Evaporation (Schulze *et al.*, 2008 in GEOSS, 2015

Figure 3.5 shows the average monthly climatic chart for Kenhardt[1]. As shown in Figure 3.5, the highest temperatures are reached in the summer months (December to January) and the lowest in the winter months (June to August). The average temperature of the area is 19.6°C, with an annual average high temperature of 28°C and an annual average low temperature of 11°C. The average midday temperatures for Upington range from 19°C in June to 33°C in January (GEOSS, 2015).

The average daily solar radiation levels in South Africa range between 4.5 and 6.5 kilowatt-hour per square meter (kWh/m^2). In South Africa the measured solar radiation is the highest in the Northern Cape, North West Province and the Free State. As discussed in Chapter 2 and Chapter 5 of this Scoping Report

[1] Data available online at: http://www.climatedata.eu

and shown in Figure 5.4, the site was selected because of the high solar radiation levels of the area (2300 kWh/m^2 per annum or 6.3 kWh/m^2 per day).

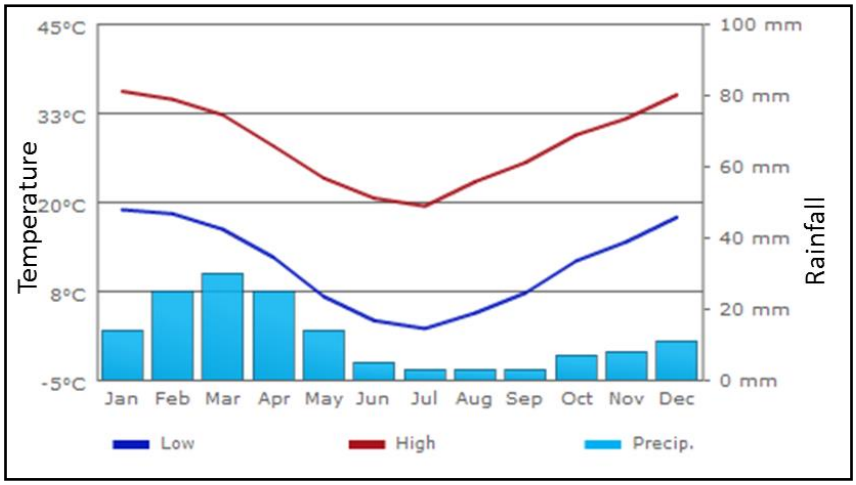


Figure 3.5: Climate chart for Kenhardt showing the monthly maximum and minimum temperatures (lines) and the average rainfall (bars) (Source: Climatedata)

One of the most important climate parameters for agriculture in a South African context is moisture availability, which is the ratio of rainfall to evapotranspiration. Moisture availability is classified into 6 categories across the country (as shown in Table 3.1). The proposed development site falls within class 6 which is described as a very severe limitation to agriculture (Lanz, 2015).

Table 3.1: The classification of moisture availability climate classes for summer rainfall areas across South Africa (Agricultural Research Council, Undated)

Climate class	Moisture availability (Rainfall/0.25 PET)	Description of agricultural limitation
C1	>34	None to slight
C2	27-34	Slight
C3	19-26	Moderate
C4	12-18	Moderate to severe
C5	6-12	Severe
C6	<6	Very severe

3.3.2. Topography and Landscape

The topography of the region is flat with gentle, open undulations (Holland, 2015). The underlying geology of the sites belongs to the Vyfbeker Metamorphic Suite and represents supracrustal rocks (sediments which have undergone several episodes of metamorphism and deformation) of the Kakamas Terrane (Johnson, Anhaeusser, and Thomas 2006). Erosion resistant rocks of this suite form distinctive low rocky hills that are often visible in the distance, although none occur in the study area. Vegetation consists of low shrubs and grassland with occasional quiver trees (kokerboom), and produces a mottled background to most views which is effective at making some development types such as power lines and pylons blend in with the background (Holland, 2015).

The Kenhardt landscape is arid with brown sand occurring widely and being occasionally interspersed with black boulders. Because of the lack of trees in the area, a large number of weaver birds make use of the telegraph poles along the road to build their community nests (GEOSS, 2015).This was also evident during the avifaunal specialist's site visit conducted as part of this scoping phase assessment; where a Martial Eagle was spotted sitting on top of a Sociable Weaver's nest on a Telkom pole (Wildskies, 2017).

The elevation characteristics of the project area are very slight with an average of slope of 0.5 %, an elevation gain of approximately 27 m on the north-east profile (across 14 km) and 31 m on the east-west profile (across 6 km) (Figure 3.6) (Google Inc., 2015).

A description of the geology and vegetation of the region is provided in their respective sections of this chapter.

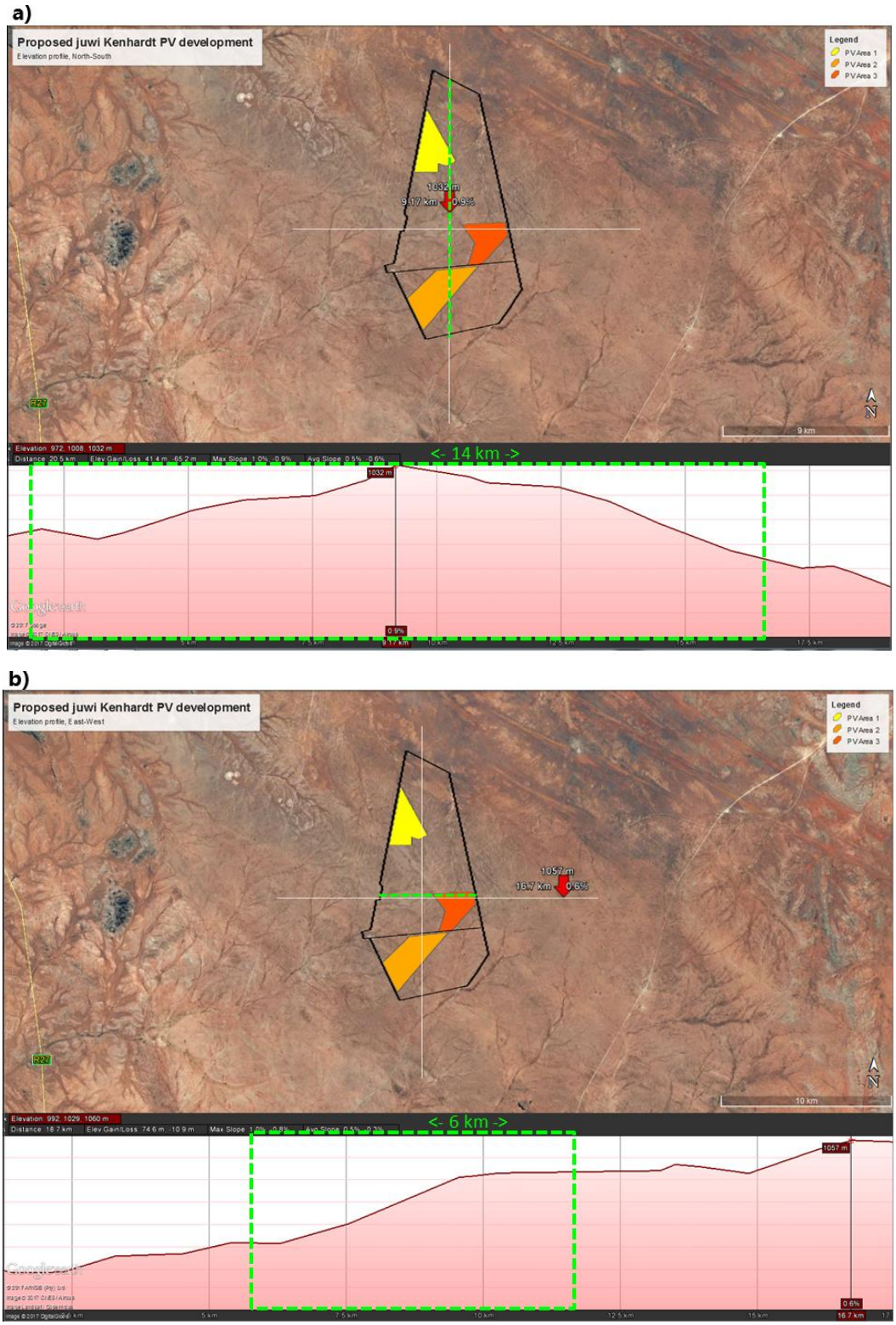


Figure 3.6: The project area is in a semidesert steppe characterised by slight slope. The green dotted lines indicate the position of the project area in the landscape. There is an elevation gain of approximately 27 m on the north-east profile (a) and approximately 31 m on the east-west profile (b) (Google Inc., 2015).

3.3.3. Regional Geology

The Geological Survey of South Africa (now the Council for Geoscience) has mapped the area at 1:250 000 scale (2920 - Kenhardt). The geological features associated with the proposed PV site, as well as that of the additional affected farm portions are shown in

Figure 3.7 **Error! Reference source not found.**below.

The Skeerhok PV 3 Facility is situated on the Skeerhok Granite and Gemsbokbult Granite outcrops. These formations are part of the Keimoes Group.

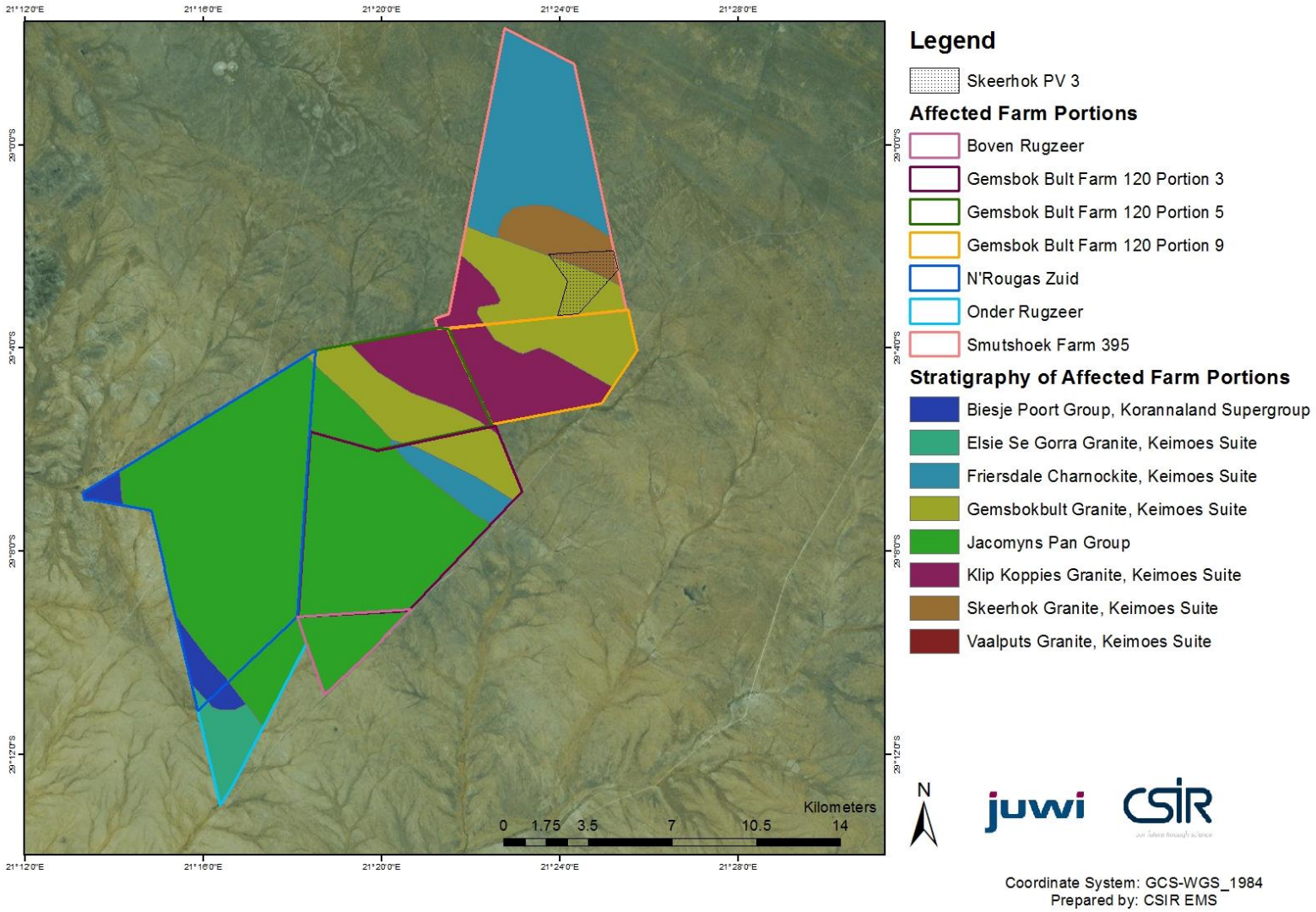


Figure 3.7: Geological setting of the PV areas, and that of the additional affected farms.

3.3.4. Soil Types and Soil Potential

The land type classification is a nationwide survey that groups areas of similar soil, terrain and climatic conditions into different land types. The proposed project is located across two very similar land types, Ag6 and Ag5.These land types comprise predominantly shallow, red, sands to loamy sands on underlying rock, hard-pan carbonate, or hard-pan dorbank. The soils fall into the arid Silicic, Calcic, and Lithic soil groups according to the classification of Fey (2010). A summary detailing soil data for the land type is provided in Table 3.2. The land has a low to moderate water erosion hazard, mainly due to the low slope, but it is susceptible to wind erosion because of the sandy texture of the soil (Lanz, 2015).

Table 3.2: Land Type Soil Data for the Site

Land type	Land capability class	Soil series (forms)	Depth (cm)	Clay % A horizon	Clay % B horizon	Depth limiting layer	% of land type
Ag6	7	Hutton Mispah Hutton Hutton Rock outcrop	10-35 5-15 45->120 10-35 0	6-12 5-12 6-12 10-20	7-15 7-15 15-25	ca, so, db R ca ca, so, R ca, so, db R	43 14 10 9 8
Ag5	7	Hutton Mispah Mispah Hutton Hutton Rock outcrop	10-35 5-15 5-15 45->120 10-35 0	5-12 4-12 4-12 6-12 10-20	6-15 7-15 15-25	ca, so, db R ca ca, so, R ca, so, db R	43 14 12 10 9 8

Land capability classes: 7 = non-arable, low potential grazing land.
Depth limiting layers: R = hard rock; so = partially weathered bedrock; ca = hardpan carbonate; db = dorbank hardpan.

3.3.5. Agricultural Capability and Sensitivity

Land capability is the combination of soil suitability and climate factors. The area has a land capability classification, on the 8 category scale, of Class 7 - non-arable, low potential grazing land. The limitations to agriculture are aridity and lack of access to water plus the shallow soil depth and rockiness. Because of these constraints, agricultural land use is restricted to low intensity grazing only. The natural grazing capacity is low, at mostly 31-40 hectares per animal unit with a few small sections given higher at 36-40 hectares per animal unit (Lanz, 2015).

3.3.6. Regional Hydrogeology

According to the 1:500 000 scale groundwater map of Prieska (2920) the entire study area hosts an intergranular and fractured aquifer (i.e. the wind-blown sands and river alluvium as well as fractures within the bedrock constitutes an aquifer) with an average borehole yield of 0.1 ℓ/s to 0.5 ℓ/s (GEOSS, 2014).

With such low rainfall in the area, and thus associated low groundwater recharge conditions, it is anticipated that the groundwater quality will be poor. The area is characterised as having low borehole

yields, determined from the boreholes that are in close proximity to the proposed site. The option to make use of borehole water for the proposed Skeerhok PV 3 project will need to be verified before being ruled out as an option.

3.3.7. Ecology: Aquatic and Terrestrial Environment

The ecological evaluation is based on a preliminary desktop and scoping exercise of the site and general area, to serve as guidance in respect of more detailed evaluations to be undertaken during the EIA phase. The SANBI BGIS was used to define the regional vegetation and water resources present in the area and the anticipated ecological sensitivity of the receiving environment. In addition, a literature review of existing reports, scientific studies, databases, reference works, guidelines and legislation relevant to the study area was conducted to establish the baseline ecological and vegetative condition of the site and associated environment. It should be noted that exact details pertaining to the aquatic and terrestrial environment will be provided in the EIA Report, subsequent to the completion of the field work to be undertaken as part of the EIA Phase.

3.3.8. Hydrology and Aquatic Environment (Surface Water, Drainage, and Wetland Ecosystems)

The Northern Cape is divided into the following four Water Management Areas:

- Lower Orange;
- Upper Orange;
- Olifants/Doorn; and
- Lower Vaal.

The proposed project lies within a xeric to semi xeric environment with rainfall confined to a short period during the summer/autumn months. The prevailing climate regime indicates that rainfall is generally sparse, and together with the sandy percolative soils that prevail across the region there is limited potential for extensive wetland and riparian features.

The NFEPA project earmarked several important catchments (sub-quaternaries) based either on the presence of important biota (e.g. rare or endemic fish species) or the degree or lack thereof with regard to riverine degradation, i.e. the greater the catchment degradation the lower the priority to conserve the catchment. The important catchments areas are then classified as Freshwater Ecosystem Protection Areas (FEPAs). No FEPAs are located within the study area or immediately downstream of the study area (SDP, 2015).

Figure 3.8 indicates the site in relation to drainage quaternaries within the region. The project area is seen to traverse three specific catchments, these being the D53B and D53C and to the north, the D73F. Primarily the subject site is drained to the north through a series of dendritic features that eventually feed directly in the Orange River at the Kakamas to Upington stretch of this system. A component of the site may also serve the Hartebees River (D53C) which also eventually drains into the Orange River (Figure 3.8) (SDP, 2017).

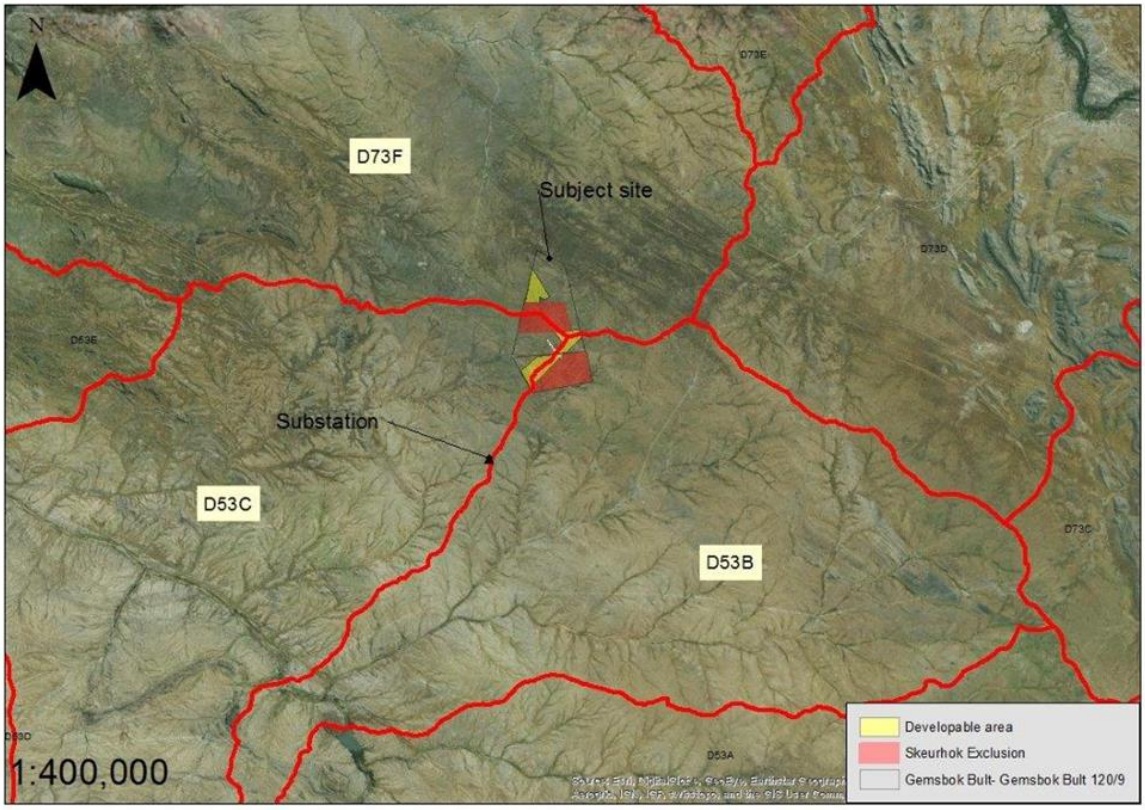


Figure 3.8: Proposed project area and relation to drainage quaternaries within the region (SDP, 2017)

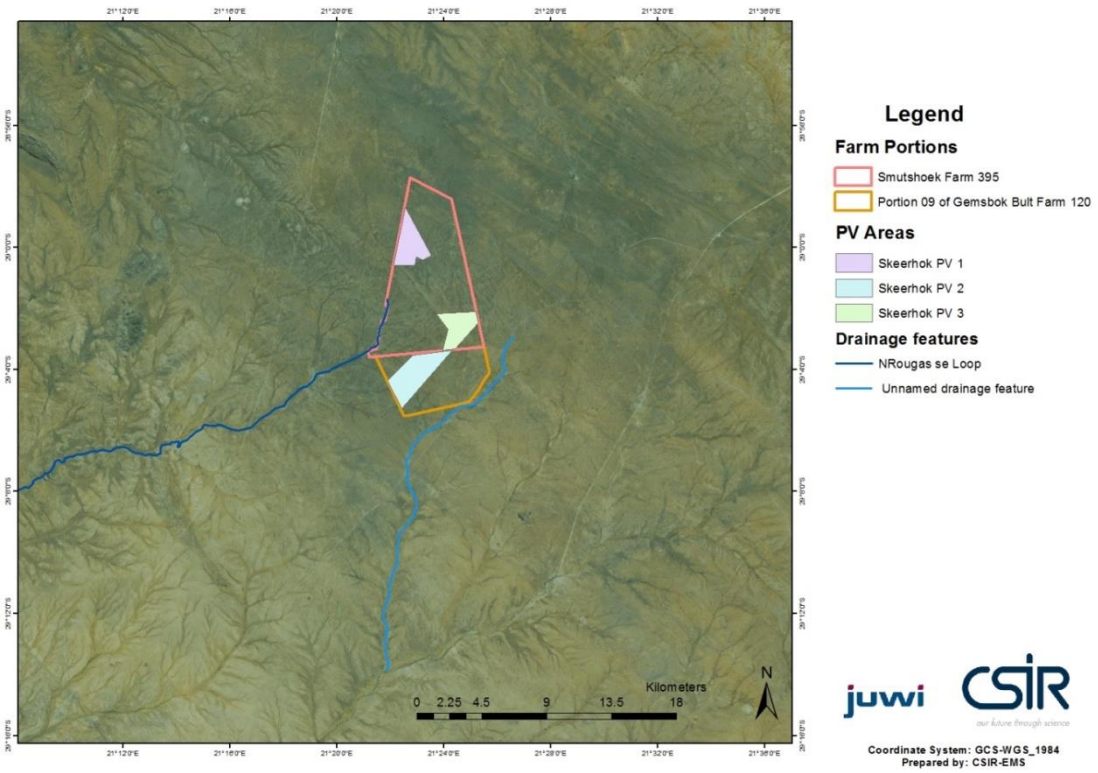


Figure 3.9: Proposed project area in relation to the major drainage feature in the region.

The primary drainage features serving the proposed Skeerhok PV 3 site are the NRougas se Loop and an unnamed drainage feature (Figure 3.9), a typically common hydro geomorphological feature that is served by a number of small dendritic features. These drainage features are subject to intermittent flow and are indicated primarily by evidence of flow or deposition of materials (Brinson *et al* 1993; USDA 2008). As such, it will be important to identify these features within the subject sites through the identification of a combination of factors, namely verdant vegetative growth and the presence of hydrogeomorphic features. Notably, there is an absence of distinct riparian and geohydromorphic soil indicators that are indicative of wetland and river habitats and it is common for extraneous factors, such as the regular passage of livestock, to drive the formation of these dendritic drainage features on sites (SDP, 2017).

Although ephemeral in terms of the presence of water within these features, these drainage lines do bestow intermittent hydrological benefit to the landscape and can in some instances, be considered groundwater "recharge zones" in respect of the local sub surface hydrology. From a biotic perspective, the drainage lines do serve as seasonally important refugia and congregation points for inter alia invertebrates (e.g. Order Odonata) and vertebrates (e.g. Order Anura) (SDP, 2017).

3.4. Terrestrial Environment

3.4.1. General Vegetation Description

The proposed site is located within the Nama-Karoo biome of South Africa and as noted previously, the site falls within the Bushmanland Arid Grassland (Nkb3) (Figure 3.10) vegetation type (Mucina and Rutherford 2006). This vegetation unit is the second most extensive vegetation type in South Africa extending from around Aggeneys in the east to Prieska in the west. It is associated with freely draining alkaline soils common to this area. This veld type is an arid grassland form comprising of extensive plains dominated by sparse, intermittent pockets of Aristida spp and Stipagrotis spp (SDP, 2017).

Although a graminoid dominated region, the vegetation type is considered to contain a number of endemic species including Larryleachia dinteri, a small succulent, associated with rocky outcrops and the larger Aloe dichotoma, which is a listed protected species in terms of the Northern Cape Conservation Act.

Notably, much of the Kenhardt region has been subject to significant and extensive grazing by livestock, particularly sheep, which has and continues to alter the vegetation structure and form within the region.

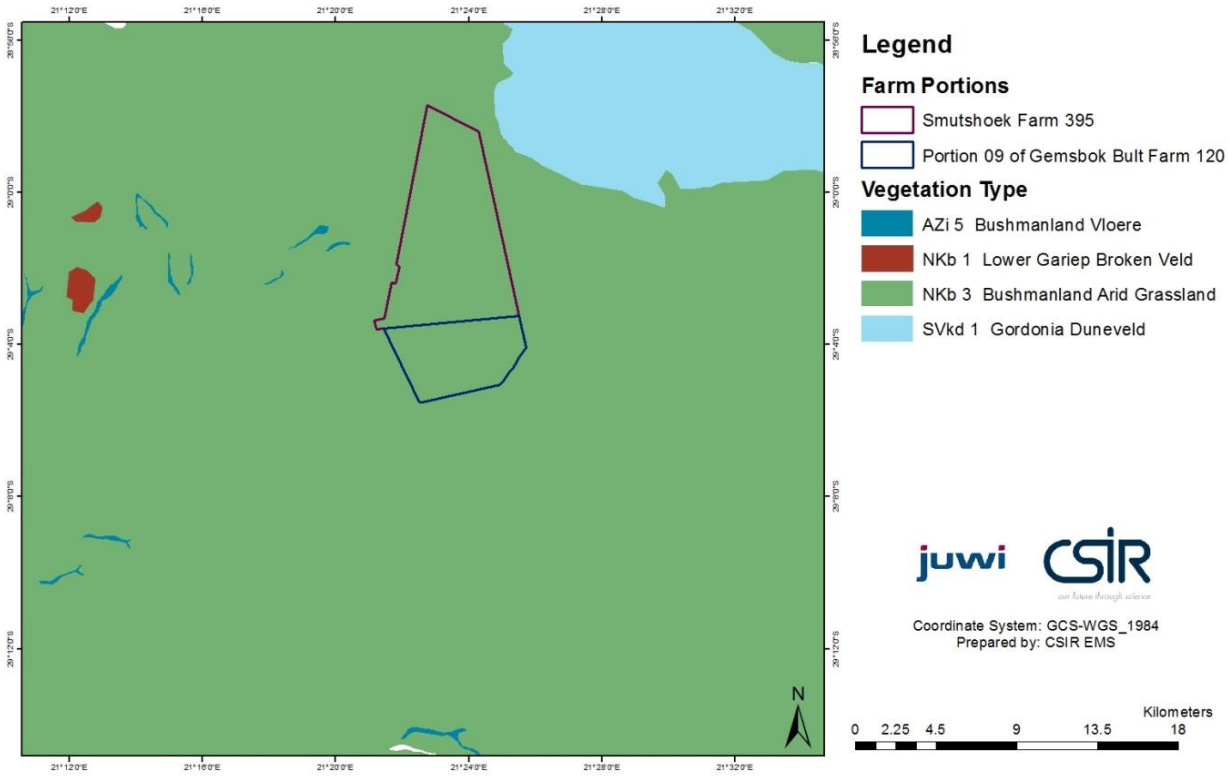


Figure 3.10: Vegetation Map in relation to the proposed project site

Fauna

Fauna that prevail within the subject region are typical of an arid environment. Due to the limited topographic variation in the terrain and the generally unvarying landscape, faunal species are widespread across the region, although the presence of key bio physical factors, including water and the presence of particular plant species may serve to concentrate species at certain localities. It follows from this that the occurrence of faunal species within the subject area is likely to be in respect of these animals either utilizing the subject area as refugia, or as part of a wider foraging range or territory. Typically, many of the mammalian and reptilian species encountered in the region are fossorial and burrowing species. Such species included meerkat (*Suricata suricata*), ground squirrel (*Xerus inauris*) and Aardvark (*Orycteropus afer*). Some larger mammals common within the region include Springbok (*Antidorcas marsupalis*) and Steenbok (*Raphicerus campestris*), which are common in the open habitat (Estes, 1992).
A number of the above species may be excluded from the PV site, once operational (in particular larger mammals and some reptiles), while smaller fossorial mammals are likely to integrate with such facilities and may indeed benefit from the presence of areas where grazing is limited and predators are excluded.

Avifauna

This arid area is home to several large terrestrial bird and raptor species, the most important of which are Ludwig's Bustard *Neotis ludwigii*, Kori Bustard *Ardeotis kori*, Secretarybird *Sagittarius serpentarius*, Karoo Korhaan *Eupodotis vigorsii*, Verreaux's Eagle *Aquila verreauxii* and Martial Eagle *Polemaetus bellicosus*. In addition to being classified as threatened regionally and in some cases globally, most of these species are

facing significant threats to their survival from existing impacts in the arid parts of South Africa. This area is home to an assemblage of arid zone adapted smaller bird species including larks, sparrow-larks, chats and others. Most important of these, from a conservation perspective, are Red Lark *Calendulauda burra* and Sclater's Lark S*pizocorys sclateri,* both of which are listed as regionally threatened species (Vulnerable and Near-threatened respectively), have very restricted ranges and have been recorded in the broader area within which the study area is situated. Burchell's Courser (Vulnerable) *Cursorius rufus* also occurs in the broader area (Wildskies, 2017).

It is important to note that the proposed PV site lies distally from the nearest Important Birding Area (IBA) which is located at the Augrabies Falls (SDP, 2017).

Protected Areas
As noted in the Background Section above, the site does not fall within any protected areas defined in the NPAES or South African National Parks (NBA). There are no formal protected areas within 20 km of the proposed site (SDP, 2015). The closest NPAESs are the Gariep NPAES, located 30 km to the south-east of the site and the Kamiesberg Bushmanland Augrabies NPAES located 43 km north-west of the site. The Augrabies Falls National Park is approximately 115 km north-west of the site.

3.4.2. Heritage Profile

In common with much of Bushmanland, the project area is a flat expanse of relatively flat terrain but with many ephemeral drainage lines visible on aerial photography. These drainages affect the various sites and their alternatives to differing degrees. Previous work in the area (Orton 2014a, 2014b, 2014c) suggests that vegetation cover is likely to be very sparse with the ground surface openly visible at all times

In terms of expected heritage resources, Bushmanland is well known for the vast expanses of gravel that occur in places and which frequently contain stone artefacts in varying densities (Beaumont, 1995). Such material is referred to as 'background scatter' and is invariably of very limited significance. At times, however, the scatter can become very dense and mitigation work is occasionally called for. The artefacts located in these contexts are largely Early Stone Age (ESA) and Middle Stone Age (MSA) and are not associated with any other archaeological materials – these would have long since decomposed and disappeared. Previous experience immediately east of the present site suggests that such dense accumulations of artefacts are unlikely to occur in this area (ASHA Consulting, 2015).

Of potentially more significance, however, are Later Stone Age (LSA) sites which are located along the margins of water features in Bushmanland. These features include both pans and ephemeral drainage lines. Such sites have been identified in the vicinity of the present study area but generally associated with pans rather than drainages. These sites typically contain mostly stone artefacts, but fragments of ostrich eggshell (used as water containers and also as a food source) are also found at times. Similar LSA sites can also be found in association with rocky outcrops (e.g. Orton 2016c, 2016f). Because of their positions along water courses and adjacent to rocky areas, such sites are often avoided by development proposals because of the need to avoid the relevant natural features. Despite the increased likelihood of locating archaeology along streams, Morris (2009) noted that a search along the banks of the substantial but non-perennial Hartebeest River close to Kenhardt, where he expected elevated frequencies of archaeological material, revealed virtually nothing. However, the present author has seen low density artefact scatters as well as both geometric painted and representational engraved rock art along the Hartebeest River just to the south of Kenhardt. Earlier work closer to the study area by the present author (Orton 2016c) has also revealed many important archaeological sites along one river some 13 km south of the present study area. These were a suite of LSA and historical artefact scatters with artefacts

indicating occupation during the Anglo-Boer War. One painted geometric rock art site has also been found in the area, this time some 6 km south of the present study area (Orton 2016f).

Another kind of Stone Age archaeological site fairly commonly encountered in Bushmanland is small rock outcrops that have been quarried as a source of stone material for making stone tools. Several such occurrences of flaked quartz outcrops in particular have been noted in the general surrounding area.

The built environment is sparsely represented in Bushmanland because the farms tend to be so large. The vast majority of structures appears to be quite recent in age (20th century) and is of very limited heritage significance.

Graves are generally rare, but isolated graves have been reported (e.g. Orton 2016f, 2016h). Some farms may have small graveyards located close to their farm buildings. Just one has been seen by the present author while working in the general area and this is on the farm immediately to the south of the present study area. Unmarked pre-colonial graves can, in theory, be located anywhere, although they are generally more common in sandy areas where excavation of graves was easier and especially in more productive areas where population densities would have been higher (e.g. along the coast).

The Anglo-Boer War was fought across the Northern Cape, but information on the role of Kenhardt appears difficult to locate. The town was occupied by the Boers on 25th February 1900 after they convinced the magistrate that they had a large gun and would fire on the town if it did not surrender. They later surrendered to the British who occupied the town on 31st March 1900. By mid-1900 there were perhaps 100 Cape Rebels detained in a camp outside of Kenhardt (Grobler 2004). The British raised a local force known as the Border Scouts in Upington in May 1900. Many were mixed-race individuals, some local farmers, others Kalahari hunters, but all disliked the Boers. The scouts were responsible for a large area of the north-western Cape Colony centred on Upington and Kenhardt. They eventually numbered 786 by January 1901 and were under the command of Major John Birbeck (AngloBoerWar.com 2015; Rodgers 2011). At the beginning of 1902 there were 150 Border Scouts stationed at Kenhardt. Two boers, H.L. Jacobs and A.C. Jooste, were accused of treason and executed in the town on 24 July 1901 (Grobler 2004). A memorial stands there to their honour (Green Kalahari n.d.).

No major action appears to have taken place around Kenhardt, although the Boers are known to have attacked a patrol on 17th May 1901, while the British attacked a Boer position on 25th June 1901 (AngloBoerWar.com 2015).

3.4.3. Cultural and Natural Landscape

The cultural landscape is very poorly developed in this area with fences, water troughs, wind pumps and occasional farm complexes being the primary features. The natural landscape largely lacks visually interesting and sensitive features, although the small quiver tree ‘forest’ located by Orton (2014b) to the southwest of the study area is regarded as a natural heritage resource (ASHA Consulting, 2017).

The vast majority of archaeological material were found and recorded during the survey was of very low significance and does not merit further attention in terms of the siting of the proposed solar energy facilities. These occurrences are generally not worthy of being termed sites, and may be destroyed without any further archaeological work being required.

An isolated grave was found in the eastern part of Skeerhok PV 3. This grave should be avoided as shown in Figure 3.11 (ASHA Consulting, 2017). Late Stone Age sites, including pans and koppies were located some distance to the left of Skeerhok PV 3.

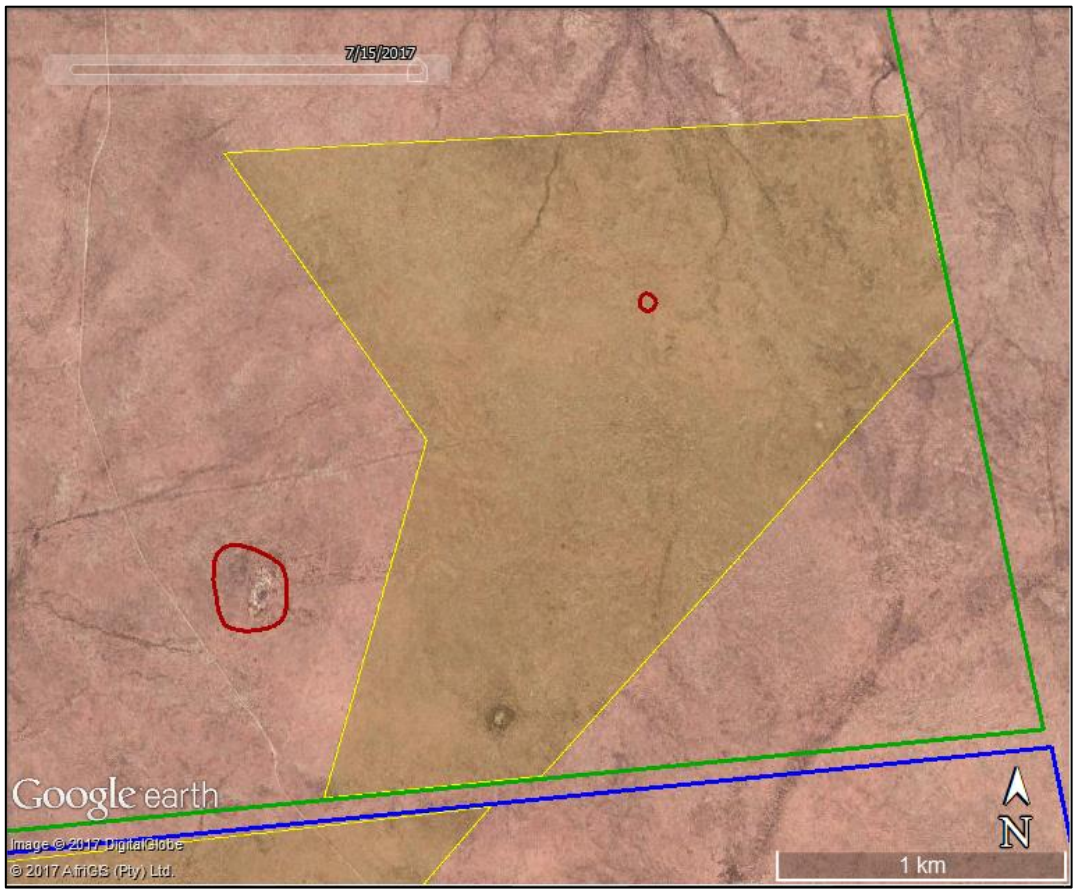


Figure 3.11: Location of findings in and around the Skeerhok PV 3 (ASHA Consulting, 2017).

Environmental Sensitivity Map

Based on the literature review of the various studies undertaken in the area, as outlined above, and the sensitivities present on site, an environmental sensitivity map has been compiled for the Skeerhok PV 3 development footprint (Figure 3.12). The sensitivities will be considered during the EIA phase through various specialist studies.

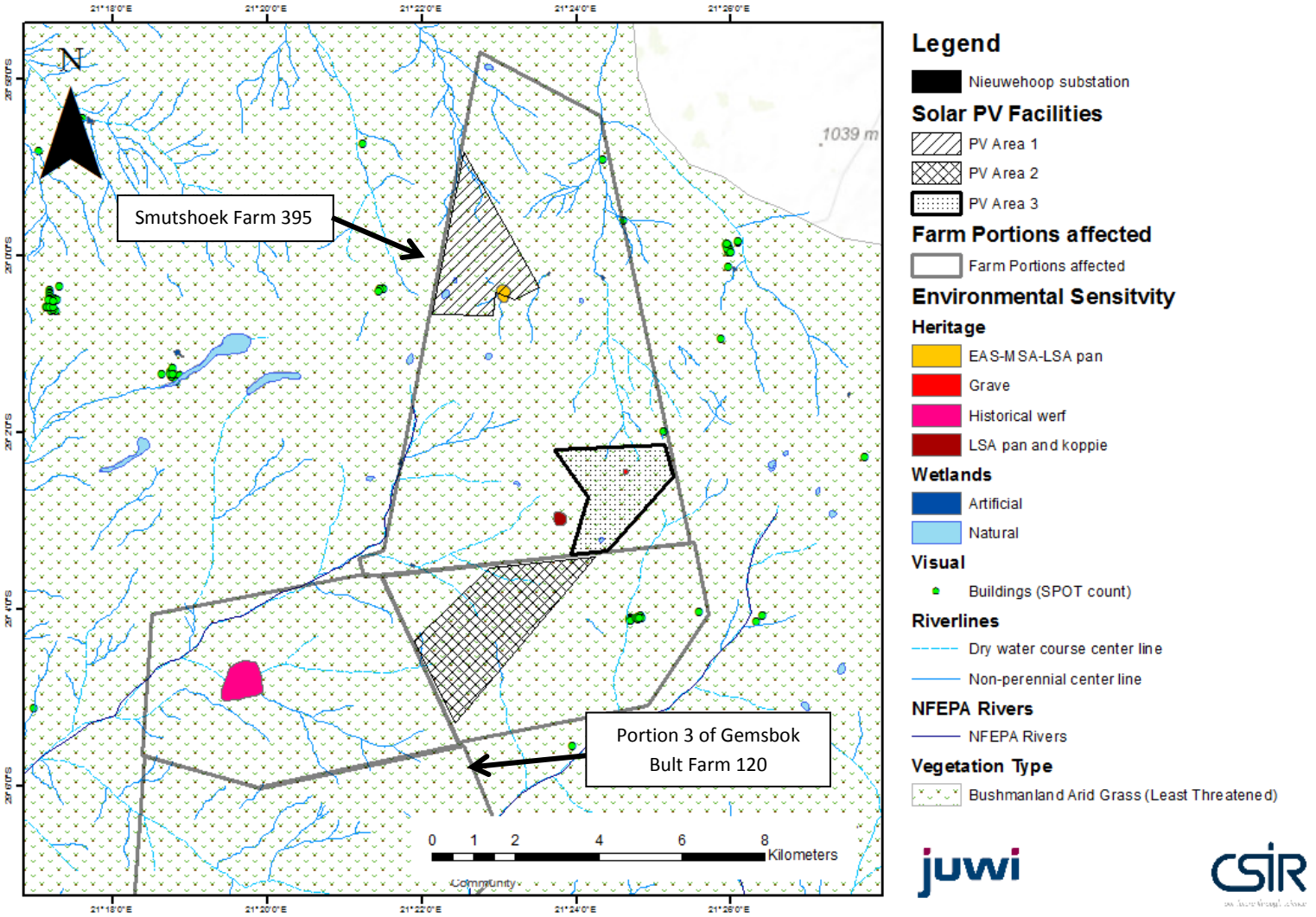


Figure 3.12: Environmental Sensitivity Map for the proposed Skeerhok PV 3 project Site (site's boundary shown in a bold black border on the map)

3.5. Socio-Economic Environment

It must be noted that documented data on the study area, particularly in terms of area specific (i.e. Kenhardt and surrounds) socio-economic data, is very limited. Accordingly, the available data is interpreted in terms of professional opinion and generally accepted trends within the study area and South Africa.

3.5.1. Demographic Profile

The ZF Mgcawu District Municipality (DM) comprises six Local Municipalities namely: Mier; Kai! Garib; Khara Hais; Tsantsabane, !Kheis and Kgatelopele and is classified as a Category C municipality (Figure 3.13). The ZF Mgcawu DM covers an area of approximately 100 000 km^2 (almost 30 % of the Province) (ZF Mgcawu DM IDP, 2014) and according to the 2011 Census has approximately 236 783 inhabitants.

The actual development footprint is located within the !Kheis Local Municipality. However, the closest urban center, Kenhardt, is located in the Kai !Garib Local Municipality.

A total of 16 703 households resides in the Kai !Garib Local Municipality, with 35 % of households being female headed. The total female population dominates the total male population by 8.5 % (Kai !Garib Draft IDP, 2014). Population of the working age demographic (i.e. 15 to 65 years) makes-up 70.5 % of the population, whereas those below 15 years of age comprise 24.4 % of the population, and the above 65 years age group makes-up 5.1 % of the population of the Kai !Garib Local Municipality. Accordingly, the dependency ratio (i.e. the economically active population vs. the non-economically active population: 24.4 % + 5.1 %) is 29.5 % (du Toit, 2015).

The !Kheis Local Municipality consists of a total of 4146 households, with 34.6 % of households being female headed. Population of the working age demographic (i.e. 15 to 65 years) makes-up 70.5 % of the population, whereas those below 15 years of age comprises 35 % of the population, and the above 65 years age group makes-up 5.1 % of the population (Statistics SA, 2015).

This data is suggestive of an area with a relatively high level of vulnerable people groups (i.e. woman and children) and, potentially, a corresponding high level of vulnerable households.

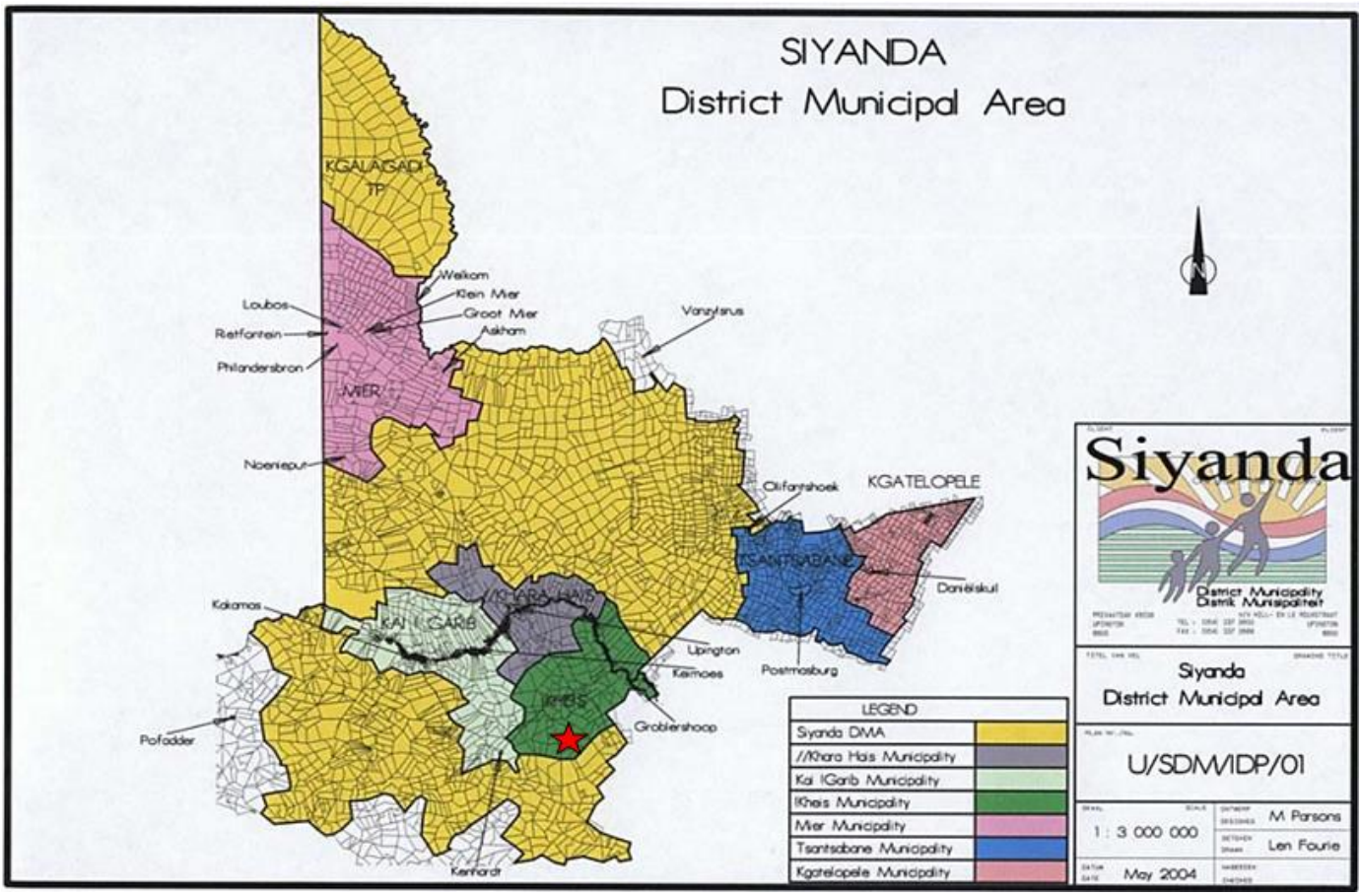


Figure 3.13: Siyanda DM (now known as ZF Mgcawu DM) boundary and boundaries of local municipalities (Siyanda DM IDP, 2013)

The !Kheis Local Municipality, in which the proposed project is located, has a population of 16 637, according to the 2011 Census (Statistics SA, 2015). As shown in Table 3.3, the !Kheis Local Municipality constitutes 8 % of the total population of the ZF Mgcawu DM.

Table 3.3: Population of the Local Municipalities within the ZF Mgcawu DM (Statistics SA, 2011)

Municipality	Census 2001	Census 2011	% of the total population	Difference	Area (Km^2)	Person/Km^2
Mier	7207	7003	3%	493	22468	0.3
Kai Garib	58 617	65 869	24%	799	26357	2.1
//Khara Hais	77 919	93 494	42%	25249	21780	4.6
!Kheis	16 538	16 637	8%	2797	11107	1.7
Tsatsabane	27 082	35 093	12%	4018	18330	1.5
Kgatelopele	14 743	18 687	9%	6755	2478	8.7
Total	**202 106**	**236 783**	**100%**	**35903**	**102520**	**2.3**

Afrikaans is the dominant language (76.4 %) and Setswana the second largest language (15.8 %) spoken in the ZF Mgcawu DM. Within the !Kheis Local Municipality 94 % of the population speaks Afrikaans and 1.9 % Setswana. The population of the ZF Mgcawu DM is predominantly Coloured (61.2 %), followed by Black

Africans (29.8 %) and Whites (8.3 %), with the !Kheis Local Municipality containing a similar racial population group composition (as shown in Figure 3.14).

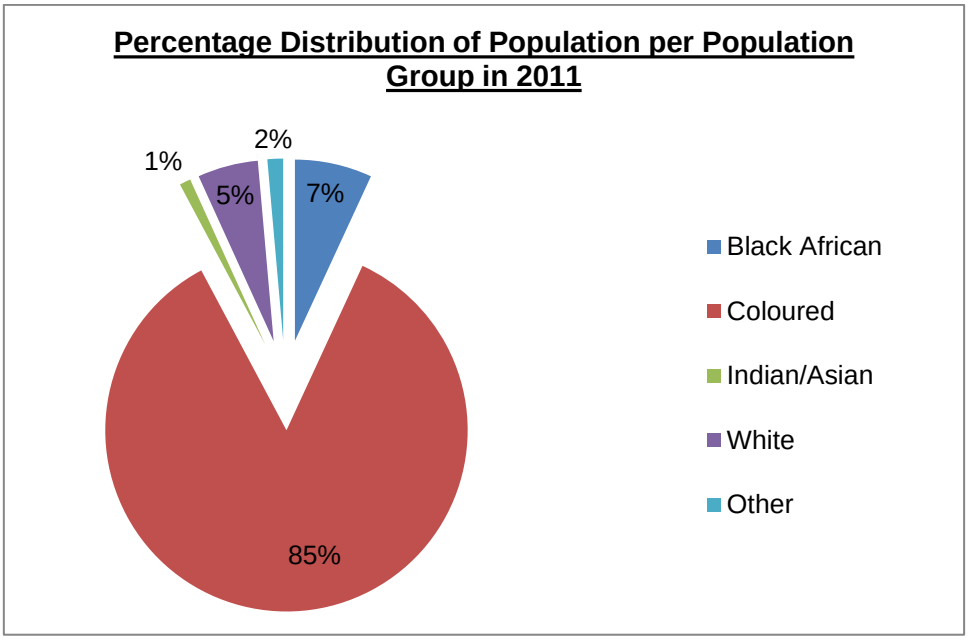


Figure 3.14: Percentage Distribution of Population per Population Group for the !Kheis Local Municipality in 2011 (Statistics South Africa, 2015).

The age distribution of the ZF Mgcawu DM (shown in Figure 3.15 below) is represented by a majority of young people, i.e. persons younger than 40 years old (Statistics SA, 2011).

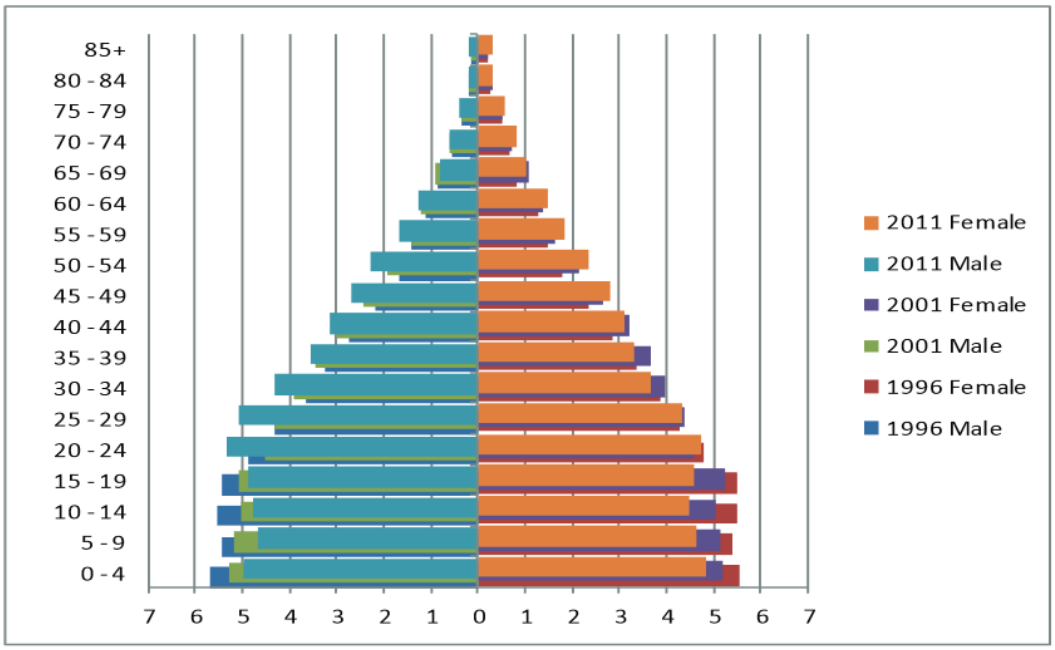


Figure 3.15: Age Distribution of the ZF Mgcawu DM (Statistics South Africa, 2011).

3.5.2. Economic Profile

The Northern Cape Province has the third highest per capita income of all nine provinces; however, income distribution is extremely skewed, with a high percentage of the population living in extreme poverty. Approximately 60 % of ZF Mgcawu DM's population has an income of between R 0 to R 800 per month. The majority of the population (i.e. 28.30%) within the !Kheis Local Municipality earns between the R 19 601 – R 38 200 income bracket, as shown in Figure 3.16 below, and approximately 7.7% of the population has no income.

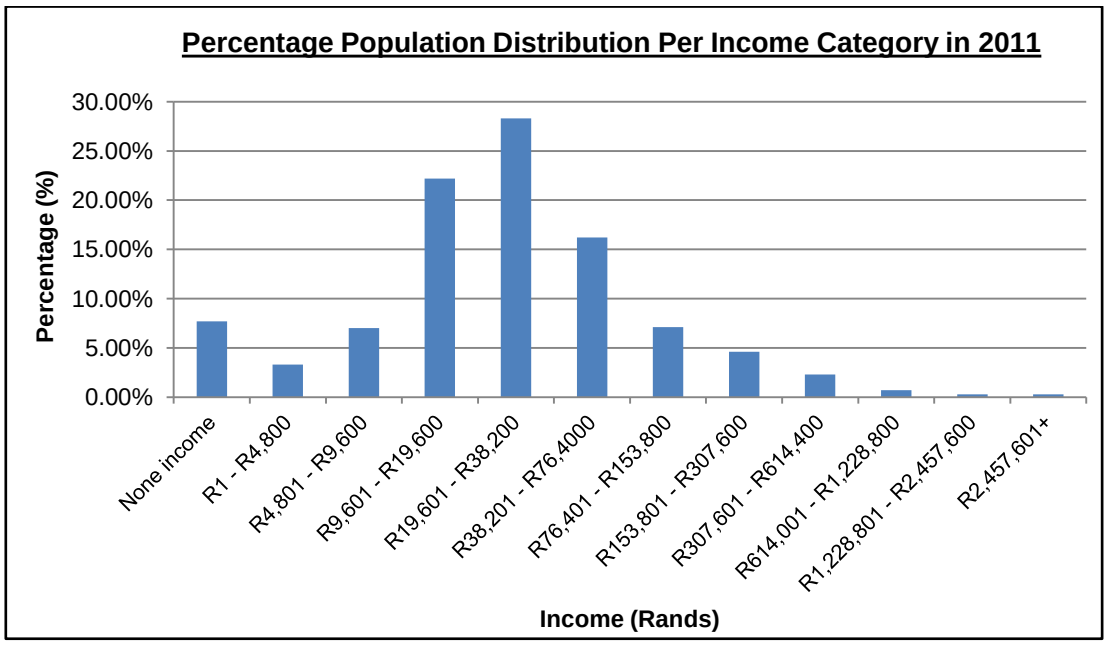


Figure 3.16: Income Distribution of the !Kheis Local Municipality in 2011 (Statistics South Africa, 2015).

The 2011 census indicates that 22 % and 34 % of the economically active population (between the ages of 15-34) in the ZF Mgcawu DM and the !Kheis Local Municipality, respectively, are unemployed. The !Kheis Local Municipality has the highest unemployment percentage of all the local municipalities falling within the ZF Mgcawu DM. Also, nearly a third of the population is economically inactive which suggests that individual and household incomes generated in the study area are being used to support a substantial amount of dependents. This in turn exacerbates the level of household vulnerability in the area.

The unemployment rate for the Kheis Local Municipality in 2001 was 20 % and in 2011 was 28 % (Statistics SA, 2015). The official unemployment rate of 10 % (based on the 2011 Census) has decreased by 6.1 % since the 2001 Census measurement of 16.1 % for the Kai !Garib Local Municipality. The economic sector is dominated by agriculture which provides 51.8 % of jobs, followed by the Community and Government Services sector with 15.9 %. The number of jobs generated by the agricultural sector needs to be interpreted within the context of the Kai !Garib Municipality. The vast majority of the land area occupied by the Kai !Garib Municipality consists of agricultural land, accordingly, it is unsurprising that agriculture would register as the major employer at municipal (i.e. regional) level.

However, the distribution of jobs within urban centers, like Kenhardt, does not necessarily follow this agriculturally dominated pattern. If the prevailing practice of predominantly male-oriented employment within the agricultural sector (specifically in terms of sheep farming) is assumed, the 51.8 % of jobs generated by the agricultural sector could in fact be heavily skewed towards men. This in turn is

suggestive of a female dominated population which is heavily dependent on other economic sectors (i.e. non-agricultural sectors) for their income, and could very well imply that socio-economic impacts on urban centers, like Kenhardt, could be of more significance than farm-based impacts.

In terms of education, only 9.5 % of the total population of ZF Mgcawu DM has no formal schooling, while 13.5 % of the !Kheis Local Municipality's population is unschooled. Based on the 2011 Census, 3.1 % of the population of the !Kheis Local Municipality has no form of education, 55 % has some primary schooling, 7.5 % completed primary school, 5.7 % completed secondary school and 0.5 % has higher education, as shown in Figure 3.17 below.

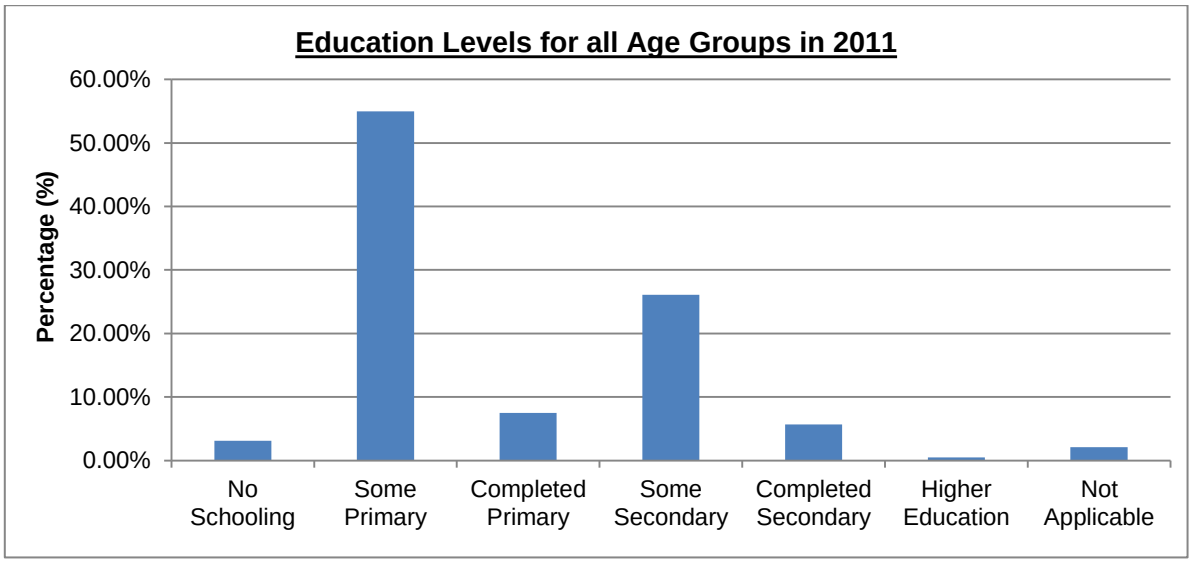


Figure 3.17: Education Levels of the !Kheis Local Municipality in 2011 (Statistics South Africa, 2015).

The economy of the ZF Mgcawu DM is dominated by mining and agriculture and accounts for up to 30 % of the Northern Cape's economy. Agriculture is the major industry in the district, contributing to job creation and economic growth. The region is characterised by livestock farming which occurs mainly on large farms that are managed for extensive production. The majority of these farms are privately owned. According to the !Kheis Local Municipality's IDP, the area is ideal for stock-farming, with the main focus being on sheep farming. The stock-farming industry also provides work to local people.

The ZF Mgcawu DM has a unique landscape that has the potential to contribute to and provide for a range of local and international tourist activities and destinations. The main attractions and destinations in the area are the Augrabies Falls National Park and the Kgalagadi Transfrontier Park. The presence of the Orange River is also a tourism asset providing several tourism opportunities. The natural appearance of the area also supports agricultural tourism. The ZF Mgcawu DM IDP indicates that tourism is one of the most important economic sectors in the Northern Cape as well as within the ZF Mgcawu DM boundaries. Tourism is a growing component of the economy of the Northern Cape and the IDP indicates that, after the agricultural sector, the local tourism industry should become the most important economic activity in the area within the next ten years. This is based on the current growth rate in both development and employment.

Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

FINAL SCOPING REPORT

CHAPTER 4:

Approach to EIA Process and Public Participation

CONTENTS

TABLES

4. APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

This chapter presents the EIA Process to be conducted for the proposed development and gives particular attention to the legal context and guidelines that apply to this EIA, the steps in the Scoping and Public Participation component of the EIA (in accordance with Regulations 41, 42, 43 and 44 of GN R326), and the schedule for the EIA Process.

4.1. Legal Context for this EIA

Section 24(1) of the NEMA states:

- *"In order to give effect to the general objectives of integrated environmental management laid down in this Chapter, the potential impact on the environment of listed activities must be considered, investigated, assessed and reported to the competent authority charged by this Act with granting the relevant environmental authorization."*

The reference to "listed activities" in Section 24 of the NEMA relates to the regulations promulgated in GN R327, R326, R325 and R324 in Government Gazette 40772, dated 7 April 2017. The relevant Government Notices published in terms of the NEMA collectively comprise the NEMA EIA Regulations listed activities that require either a Basic Assessment, or Scoping and EIA (that is a "full EIA") be conducted. As noted in Chapter 1 of this Scoping Report, the proposed project requires a full EIA, as it particularly includes, *inter alia*, the inclusion of Listed Activity Number 1 in GN R325:

- *"The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs within an urban area, or, on existing infrastructure".*

All the listed activities potentially forming part of this proposed development and therefore requiring EA were included in the Application Form for EA that was prepared and submitted to the DEA with this Scoping Report. At the time of release of this Scoping Report to I&APs for review, the letter of acknowledgement from the DEA stipulating the DEA EIA Reference Number for the proposed project was pending. A copy of the Application Form and the letter of acknowledgement from the DEA will be included as an appendix to the Final Scoping Report that will be submitted to the DEA for decision-making (in accordance with Regulation 21 (1) of the 2014 EIA Regulations) (if this has been provided by the DEA). The listed activities potentially triggered by the proposed project are indicated in Table 4.1.

Table 4.1: Listed Activities in GN R327 and GN R325 that potentially form part of the proposed Skeerhok PV 3 project

Listed Activity Number	Listed Activity Description	Description of the project activity that potentially triggers the relevant listed activity
GN R327		
Activity 11	The development of facilities or infrastructure for the transmission and distribution of electricity- (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts;	Onsite infrastructure including underground cabling for collection of electricity, with a capacity of up to 275kV would be required to connect the proposed PV facility to the proposed onsite central 132 kV substation. The proposed facility is situated outside of the urban edge. This activity would therefore be triggered.
Activity 12 (x) and (xii)	The development of: (ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs- a) within a watercourse; b) in front of a development setback; or c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding- (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; or (ee) where such development occurs within existing roads or road reserves.	The proposed 100 MW Solar PV facility will entail the construction of building infrastructure and structures (such as the solar field, offices, workshop, ablution facilities, on-site substation, laydown area and security enclosures etc.). Based on the preliminary sensitivity screening undertaken for the site, drainage features occur onsite and the buildings and infrastructure are expected to exceed a footprint of 100 m^2 and some may occur within 32 m of the watercourses. The proposed project will take place outside of an urban area. *Additional information regarding the presence of watercourses on site will be provided in the Ecological Impact Assessment, which will be undertaken during the EIA Phase.*
Activity 19 (i)	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving- a) will occur behind a development setback;	The proposed project will entail the excavation, removal and moving of more than 10 m^3 of soil, sand, pebbles or rock from the nearby watercourses. The proposed project would also entail the infilling of more than 10 m^3 of material into the nearby watercourses. Based on the preliminary sensitivity screening undertaken for the site, watercourses occur on the farm. Construction of the internal gravel access road

Listed Activity Number	Listed Activity Description	Description of the project activity that potentially triggers the relevant listed activity
	b) is for maintenance purposes undertaken in accordance with a maintenance management plan; c) falls within the ambit of activity 21 in this Notice, in which case that activity applies. d) Occurs within an existing ports or harbors that will not increase the development footprint of the port or harbor; or e) Where such development is related to the development of a port or harbor in which case activity 26 in Listing Notice 2 of 2014 applies.	and/or the construction of infrastructure within drainage lines will require the removal of material. *Additional information regarding the presence of watercourses on site will be provided in the Ecological Impact Assessment, which will be undertaken during the EIA Phase.*
Activity 24 (ii)	The development of a road– (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding a road– a) which is identified and included in activity 27 in Listing Notice 2 of 2014; or b) where the entire road falls within an urban area.	Existing roads will be used to gain access to the preferred site. The existing roads can be accessed from the R27. An internal gravel road may be constructed from the existing roads to the proposed project site. The internal gravel road of 8 m in width. The length of the internal gravel road will be confirmed as the location, design and layout of the facility progresses. The proposed project will take place outside of an urban area.
Activity 28 (ii)	Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such development: (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.	It is understood that the land is currently used for agricultural purposes (mainly grazing). The proposed 100 MW solar PV facility (i.e. Skeerhok PV 3), which is considered to be a commercial/industrial development, will have an estimated footprint of approximately 300 ha.
GN R325		
Activity 1	The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs within an urban area or on existing infrastructure.	The proposed project will entail the construction of a 100 MW Solar PV facility (i.e. facility for the generation of electricity from a renewable resource). The proposed project take place outside of an urban area.
Activity 14	The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic	A utility scale battery storage facility , which consist of dangerous goods, up to 1120 cubic metres of batteries will be installed for certain alternatives. This activity will thus be triggered. The battery storage facility will cover an area of

Listed Activity Number	Listed Activity Description	Description of the project activity that potentially triggers the relevant listed activity
	metres or more but not exceeding 500 cubic metres.	up to 1ha and will be assessed through an risk assessment during the EIA phase.
Activity 15	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for: (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	The proposed 100 MW solar PV facility (i.e. Skeerhok PV 3) will have an estimated footprint of approximately 300 ha. As a result, more than 20 ha of indigenous vegetation would be removed for the construction of the proposed Solar PV facility. *Additional information regarding the presence of indigenous vegetation on site will be provided in the Ecological Impact Assessment, which will be undertaken during the EIA Phase.*
GN R324		
Activity 18	The widening of a road by more than 4 meters, or the lengthening of a road by more than 1 kilometer: g) Northern Cape ii) Outside Urban Areas: (ii)Areas within 100 meters from the edge of a watercourse or wetland.	This onsite farm road, will need to be widened by more than 4 m, and in some instances within 100m of onsite drainage features (where required). The proposed project will take place outside of an urban area.

Notes regarding the identification of potential listed activities:

- *It should be noted that a precautionary approach was followed when identifying listed activities (for inclusion in the Application for EA and to be assessed as part of the Scoping and EIA Process), i.e. if the activity potentially forms part of the project, it is listed. However, the final project description will be shaped by the findings of the EIA Process and certain activities may be added or removed from the project proposal. The DEA and I&APs will be informed in writing of such amendments accordingly.*

- *The relevant listed activities applicable to the construction of the proposed transmission lines and associated electrical infrastructure at the Eskom Nieuwehoop Substation will be included in the **separate BA Report** and the Applications for EA for the BA Process. As mentioned previously, the Applications for EA for the BA Processes will be lodged with the DEA during the EIA Phase, in order to comply with the timeframes stipulated in Regulation 19 (1) of GN R326.*

4.2. Legislation and Guidelines Pertinent to this EIA

The scope and content of this Scoping Report has been informed by the following legislation, guidelines and information series documents:

4.2.1. National Legislation

4.2.1.1. The Constitution of the Republic of South Africa (Act 108 of 1996)

The Constitution, which is the supreme law of the Republic of South Africa, provides the legal framework for legislation regulating environmental management in general, against the backdrop of the fundamental human rights. Section 24 of the Constitution states that:

- "Everyone has the right:
  - to an environment that is not harmful to their health or well-being; and
  - to have the environment protected, for the benefit of present and future generations through reasonable legislative and other measures that –
    - prevent pollution and ecological degradation;
    - promote conservation; and
    - secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

Section 24 of the Bill of Rights therefore guarantees the people of South Africa the right to an environment that is not detrimental to human health or well-being, and specifically imposes a duty on the State to promulgate legislation and take other steps that ensure that the right is upheld and that, among other things, ecological degradation and pollution are prevented.

In support of the above rights, the environmental management objectives of proposed project is to protect ecologically sensitive areas and support sustainable development and the use of natural resources, whilst promoting justifiable socio-economic development in the towns nearest to the project site.

4.2.1.2. NEMA and EIA Regulations published on 7 April 2017 (GN R327, GN R326, GN R325 and GN R324)

The NEMA sets out a number of principles (Chapter 1, Section 2) to give guidance to developers, private land owners, members of public and authorities. The proclamation of the NEMA gives expression to an overarching environmental law. Various mechanisms, such as cooperative environmental governance, compliance and non-compliance, enforcement, and regulating government and business impacts on the environment, underpin NEMA. NEMA, as the primary environmental legislation, is complemented by a number of sectoral laws governing marine living resources, mining, forestry, biodiversity, protected areas, pollution, air quality, waste and integrated coastal management. Principle number 3 determines that a development must be socially, environmentally and economically sustainable. Principle Number 4(a) states that all relevant factors must be considered, inter alia i) that the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied; ii) that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied; vi) that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised; and viii) that negative impacts on the environment and on peoples'

environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

4.2.1.3. National Environmental Management: Biodiversity Act (Act 10 of 2004)

The National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA) provides for "the management and conservation of South Africa's biodiversity within the framework of the NEMA, the protection of species and ecosystems that warrant national protection, and the use of indigenous biological resources in a sustainable manner, amongst other provisions". The Act states that the state is the custodian of South Africa's biological diversity and is committed to respect, protect, promote and fulfil the constitutional rights of its citizens.

Furthermore, NEMBA states that the loss of biodiversity through habitat loss, degradation or fragmentation must be avoided, minimised or remedied. The loss of biodiversity includes inter alia the loss of threatened or protected species. Biodiversity offsets are a means of compensating for the loss of biodiversity after all measures to avoid, reduce or remedy biodiversity loss have been taken, but residual impacts still remain and these are predicted to be medium to high. Chapter 5 of NEMBA (Sections 73 to 75) regulates activities involving invasive species, and lists duty of care as follows:

- the land owner/land user must take steps to control and eradicate the invasive species and prevent their spread, which includes targeting offspring, propagating material and regrowth, in order to prevent the production of offspring, formation of seed, regeneration or re-establishment;
- take all required steps to prevent or minimise harm to biodiversity; and
- ensure that actions taken to control/eradicate invasive species must be executed with caution and in a manner that may cause the least possible harm to biodiversity and damage to the environment.

An amendment to the NEMBA has been promulgated, which lists 225 threatened ecosystems based on vegetation types present within these ecosystems. Should a project fall within a vegetation type or ecosystem that is listed, actions in terms of NEMBA are triggered. Based on the preliminary sensitivity screening undertaken for the proposed site, none of the threatened ecosystems occur within the study area. This will be confirmed as part of the Ecological Impact Assessment study undertaken during the EIA Phase.

4.2.1.4. The National Heritage Resources Act (Act 25 of 1999)

The National Heritage Resources Act (Act 25 of 1999) (NHRA) introduces an integrated and interactive system for the managements of national heritage resources (which include landscapes and natural features of cultural significance).

Parts of sections 35(4), 36(3) (a) and 38(1) (8) of the NHRA apply to the proposed project:

Archaeology, palaeontology and meteorites:
Section 35 (4) No person may, without a permit issued by the responsible heritage resources authority:

a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
c) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

Burial grounds and graves:
Section 36 (3) (a) No person may, without a permit issued by South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority:

a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

Heritage resources management:
38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as:

a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
b) the construction of a bridge or similar structure exceeding 50 m in length;
c) any development or other activity which will change the character of the site –
    (i) exceeding 5000 m^2 in extent, or
    (ii) involving three or more erven or subdivisions thereof; or
    (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
    (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA, or a provincial resources authority;
d) the re-zoning of a site exceeding 10 000 m^2 in extent; or
e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

While landscapes with cultural significance do not have a dedicated Section in the NHRA, they are protected under the definition of the National Estate (Section 3). Section 3(2)(c) and (d) list "historical settlements and townscapes" and "landscapes and natural features of cultural significance" as part of the National Estate. Furthermore, Section 3(3) describes the reasons a place or object may have cultural heritage value. Section 38 (2a) of the NHRA states that if there is reason to believe that heritage resources will be affected then an impact assessment report must be submitted.

A Heritage Impact Assessment (including Archaeology and Cultural Landscape) and a desktop Palaeontological Impact Assessment will be undertaken during the EIA Phase of the proposed project. These relevant specialist studies will be included in the EIA Reports that will be released to I&APs for review during the EIA Phase.

Ngwao-Boswa Ya Kapa Bokoni (Heritage Northern Cape) and the SAHRA are required to provide comment on the proposed project in order to facilitate final decision-making by the DEA. To this end and to facilitate comment from the relevant heritage authorities, the proposed project will be loaded onto the South African Heritage Resources Information System (SAHRIS) for comment. An application will be created for each project and all necessary project information was uploaded to the SAHRIS.

Once a final comment has been issued by the heritage authority, the recommendations should be included in the conditions of the EA (should it be granted). This will essentially give 'permission' from the

heritage authorities to proceed. If any archaeological mitigation is required then this would need to be conducted by an appropriate specialist under a permit issued to that specialist by SAHRA. This permit has no bearing on the developer or development but is purely a way in which the heritage authority can be sure that the mitigation work will be carried out satisfactorily.

4.2.1.5. National Forests Act (Act 84 of 1998)

The National Forest Act (Act 84 of 1998) allows for the protection of certain tree species. The Minister has the power to declare a particular tree to be a protected tree. According to Section 12 (1) d (read with Sections (5) 1 and 62 (2) (c)) of the National Forest Act (Act 84 of 1998), a licence is required to remove, cut, disturb, damage or destroy any of the listed protected trees. The most recent list of protected tree species was published in November 2014. The Department of Agriculture, Forestry and Fisheries (DAFF) is authorised to issue licences for any removal, cutting, disturbance, damage to or destruction of any protected trees. The protected trees that commonly occur in this region are *Acacia erioloba* and *Boscia albitrunca*. The presence of these trees on site will be confirmed as part of the Ecological Impact Assessment to be conducted during the EIA Phase.

4.2.1.6. Conservation of Agricultural Resources Act (Act 43 of 1983)

The objectives of the Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA) are to provide for the conservation of the natural agricultural resources of South Africa by the:

- maintenance of the production potential of land;
- combating and prevention of erosion and weakening or destruction of the water sources; and
- protection of the vegetation and the combating of weeds and invader plants.

The CARA states that no land user shall utilise the vegetation of wetlands (a watercourse or pans) in a manner that will cause its deterioration or damage. This includes cultivation, overgrazing, diverting water run-off and other developments that damage the water resource. The CARA includes regulations on alien invasive plants. According to the amended regulations (GN R280 of March 2001), declared weeds and invader plants are divided into three categories:

- Category 1 may not be grown and must be eradicated and controlled,
- Category 2 may only be grown in an area demarcated for commercial cultivation purposes and for which a permit has been issued, and must be controlled, and
- Category 3 plants may no longer be planted and existing plants may remain as long as their spread is prevented, except within the flood line of watercourses and wetlands. It is the legal duty of the land user or land owner to control invasive alien plants occurring on the land under their control.

Should alien plant species occur within the study area; this will be managed in line with the EMPr. Rehabilitation after disturbance to agricultural land is also managed by CARA. The DAFF reviews and approves applications in terms of these Acts according to their Guidelines for the evaluation and review of applications pertaining to renewable energy on agricultural land, dated
September 2011.

4.2.1.7. National Water Act (Act 36 of 1998)

One of the important objectives of the National Water Act (Act 36 of 1998) (NWA) is to ensure the protection of the aquatic ecosystems of South Africa's water resources. Section 21 of this Act identifies certain land uses, infrastructural developments, water supply/demand and waste disposal as 'water uses' that require authorisation (licensing) by the Department of Water and Sanitation (DWS). Chapter 4 (Part 1) of the NWA sets out general principles for the regulation of water use. Water use is defined broadly in

the NWA, and includes taking and storing water, activities which reduce stream flow, waste discharges and disposals, controlled activities (activities which impact detrimentally on a water resource), altering the bed, banks, course or characteristics of a watercourse, removing water found underground for certain purposes, and recreation. In general a water use must be licensed unless it is listed in Schedule I, is an existing lawful use, is permissible under a general authorisation, or if a responsible authority waives the need for a licence. The Minister may limit the amount of water which a responsible authority may allocate. In making regulations the Minister may differentiate between different water resources, classes of water resources and geographical areas.

All water users who are using water for agriculture: aquaculture, agriculture: irrigation, agriculture: watering livestock, industrial, mining, power generation, recreation, urban and water supply service must register their water use. This covers the use of surface and ground water.

Section 21 of the Act lists the following water uses that need to be licensed:

a) taking water from a water resource;
b) storing water;
c) impeding or diverting the flow of water in a watercourse;
d) engaging in a stream flow reduction activity contemplated in section 36;
e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1);
f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
g) disposing of waste in a manner which may detrimentally impact on a water resource;
h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;
i) altering the bed, banks, course or characteristics of a watercourse;
j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
k) using water for recreational purposes.

Any activities that take place within a water course or within 500 m of a wetland boundary require a Water Use Licence (WUL) under the Section 21 (c) and Section 21 (i) of the NWA. The need for a Water Use Licence will be determined as part of the Ecological Impact Assessment, which will be conducted during the EIA Phase. However, it is important to note that considerable efforts will be made to place the proposed solar field and project infrastructure outside of wetland areas. The DWS will be consulted with during the EIA Process to confirm the need for a WUL, as well as to seek comment on the proposed project.

4.2.1.8. Astronomy Geographic Advantage (Act 21 of 2007)

The Astronomy Geographic Advantage (Act 21 of 2007) aims to provide for:

- the preservation and protection of areas within the Republic that are uniquely suited for optical and radio astronomy;
- intergovernmental co-operation and public consultation on matters concerning nationally significant astronomy advantage areas; and
- matters connected therewith.

The overall purpose of the Act is to preserve the geographic advantage areas that attract investment in astronomy. The entire Northern Cape Province, excluding the Sol Plaatjie Municipality, has been declared an astronomy advantage area. The South African MeerKAT radio telescope is currently being constructed about 90 km north-west of Carnarvon in the Northern Cape Province. The MeerKAT radio telescope is a

precursor to the Square Kilometre Array (SKA) telescope and will be integrated into the SKA Phase 1 (SKA South Africa, 2014).

The proposed Skeerhok PV 3 project is located approximately 43km north-east of Kenhardt. Kenhardt is located approximately 220 km from Carnarvon. According to the SKA Project Office, the nearest SKA station has been identified as SKA Station ID 2362, at approximately 20 km from the proposed project. Please see **Chapter 6, Section 6.10** for more information.

4.2.1.9. Subdivision of Agricultural Land Act (Act 70 of 1970)

A change of land use (re-zoning) for the development on agricultural land needs to be approved in terms of the Subdivision of Agricultural Land Act (Act 70 of 1970) (SALA). This is required for long term lease, even if no subdivision is required.

4.2.1.10. Development Facilitation Act (Act 67 of 1995)

The Development Facilitation Act (Act 67 of 1995) (DFA) sets out a number of key planning principles which have a bearing on assessing proposed developments in light of the national planning requirements. The planning principles most applicable to the study area include:

- Promoting the integration of the social, economic, institutional and physical aspects of land development;
- Promoting integrated land development in rural and urban areas in support of each other;
- Promoting the availability of residential and employment opportunities in close proximity to or integrated with each other;
- Optimising the use of existing resources including such resources relating to agriculture, land, minerals, bulk infrastructure, roads, transportation and social facilities;
- Contributing to the correction of the historically distorted spatial patterns of settlement in the Republic and to the optimum use of existing infrastructure in excess of current needs;
- Promoting the establishment of viable communities; and
- Promoting sustained protection of the environment.

4.2.1.11. Other Applicable Legislation

Other applicable national legislation that may apply to the proposed project include:

- Electricity Act (Act 41 of 1987);
- Electricity Regulations Amendments (August 2009);
- Energy Efficiency Strategy of the Republic of South Africa (Department of Minerals and Energy (DME) now operating as Department of Mineral Resources (DMR), March, 2005);
- Promotion of Administrative Justice Act (Act 2 of 2000);
- Civil Aviation Act (Act 13 of 2009) and Civil Aviation Regulations (CAR) of 1997;
- Civil Aviation Authority Act (Act 40 of 1998);
- White Paper on Renewable Energy (2003);
- Integrated Resource Plan for South Africa (2010);
- Occupational Health and Safety Act (Act 85 of 1993), as amended by Occupational Health and Safety Amendment (Act 181 of 1993);
- Fencing Act (Act 31 of 1963);
- National Environmental Management: Air Quality Act (Act 39 of 2004);
- National Environmental Management: Protected Areas Act (NEM:PA) (Act 31 of 2004);
- National Environmental Management: Waste Management Act (Act 59 of 2008); and
- National Road Traffic Act (Act 93 of 1996).

4.2.2. Provincial Legislation

4.2.2.1. Northern Cape Nature Conservation (Act 09 of 2009)

The Northern Cape Nature Conservation Act (Act 09 of, 2009) and in particular the Northern Cape Conservation: Schedule 2 – Specially Protected Species has reference to the proposed project. This Act aims at improving the sustainability in terms of balancing natural resource usage and protection or conservation thereof. It includes six schedules, as follows:

- Schedule 1 - Specially Protected species;
- Schedule 2 - Protected species;
- Schedule 3 - Common indigenous species;
- Schedule 4 - Damage causing animal species;
- Schedule 5 - Pet species; and
- Schedule 6 - Invasive Species.

With regards to protected flora, the Northern Cape Nature Conservation Act includes a list of protected flora. The plant species potentially present within the proposed project area will be identified as part of the Ecological Impact Assessment specialist study. However, it will be recommended as part of the EMPr, that a detailed plant search and rescue operation be conducted before the final design process and prior to the commencement of the construction phase. If any of the listed species are found, the relevant permits should be obtained by the Project Applicant prior to their relocation or destruction. In addition, the Provincial Department of Environment and Nature Conservation should be consulted on whether a permit is required for the clearance of indigenous vegetation on site. The Provincial Department of Environment and Nature Conservation have been pre-identified as a key stakeholder and therefore included on the project database (as shown in Appendix C of this Scoping Report).

4.2.2.2. The Provincial Spatial Development Framework for the Northern Cape (Office of the Premier of the Northern Cape, 2012)

The Provincial Spatial Development Framework (PSDF) identified a Solar Corridor where solar projects will be given priority. According to the PSDF, this Solar Corridor "centres around Upington and extends from roughly Kakamas in the north to De Aar in the east" (Department of Co-operative Governance, Human Settlements and Traditional Affairs, 2012, Page 68). The spatial vision for the Northern Cape constitutes a coherently structured matrix of sustainable land-use zones that collectively support a dynamic provincial economy vested in the primary economic sectors, in particular, mining, agriculture, tourism, and the energy industry. Thus, the proposed project falls in line with the spatial development vision for the province.

4.2.3. Local Planning Legislation

4.2.3.1. ZF Mgcawu Spatial Development Framework (Siyanda DM 2012)

The Solar Corridor is seen as an initiative that 'should be pursued vigorously.' The corridor follows the main routes from Prieska to Upington and further along the N10. However, the Spatial Development Framework (SDF) map (Page 221) shows that the corridor also extended along the N14 west. There are also a number of solar energy projects outside these corridors. Proposal SB7 for Southern Bushmanland relates to solar projects: "Sensitively place solar projects within the Solar Corridor with due regard to the visual impact of these facilities and the siting principles in Section 6.3.7".

4.2.3.2. !Kheis Rural SDF (!Kheis Municipality 2014)

Natural scenic beauty of the municipality and production of solar energy are both seen as opportunities based on its existing bio-physical conditions. Tourism opportunities for this municipality potentially relevant to the proposed development include agricultural tourism, landscape tourism and game farms. Solar energy projects are suggested for the remote areas of the municipality although no indication is given where this should be (other than the Solar Corridor).

4.2.3.3. Kai !Garib IDP (Kai !Garib Municipality 2014)

Kenhardt and its surrounding rural area are seen as an agricultural region with a scenic environment and important cultural heritage. Dust pollution is seen as factor that "must be taken into consideration with future developments". It was noted that the municipality is "very optimistic about the future due to the rise of Solar Energy Developments in the municipal area". The IDP concurred that climate of the municipal area is favourable to this environmental friendly source of energy.

4.2.3.4. Guidelines, Frameworks and Protocols

- Public Participation Guideline, October 2012 (Government Gazette 35769);
- DEADP and DEA Guidelines published in terms of the NEMA EIA Regulations, in particular:
  - Guideline on Alternatives (DEA, 2014)
  - Guideline on Transitional Arrangements (DEADP, March 2013);
  - Guideline on Alternatives (DEADP, March 2013);
  - Guideline on Public Participation (DEADP, March 2013); and
  - Guideline on Need and Desirability (DEADP, March 2013);
- Information Document on Generic Terms of Reference for EAPs and Project Schedules (March 2013);
- Integrated Environmental Management Information Series (Booklets 0 to 23) (Department of Environmental Affairs and Tourism (DEAT), 2002 – 2005);
- Guidelines for Involving Specialists in the EIA Processes Series (DEADP; CSIR and Tony Barbour, 2005 – 2007);
- United Nations Framework Convention on Climate Change (1997); and
- Kyoto Protocol (which South Africa acceded to in 2002).

4.2.4. International Finance Corporation Performance Standards

In order to promote responsible environmental stewardship and socially responsible development, the proposed Skeerhok PV 3 project will, as far as practicable, incorporate the environmental and social policies of the International Finance Corporation (IFC). These policies provide a frame of reference for lending institutions to review of environmental and social risks of projects, particularly those undertaken in developing countries.

Through the Equator Principles, the IFC's standards are now recognised as international best practice in project finance. The IFC screening process categorises projects into A, B or C in order to indicate relative degrees of environmental and social risk. The categories are:

- Category A - Projects expected to have significant adverse social and/or environmental impacts that are diverse, irreversible, or unprecedented.
- Category B - Projects expected to have limited adverse social and/or environmental impacts that can be readily addressed through mitigation measures.
- Category C - Projects expected to have minimal or no adverse impacts, including certain financial intermediary projects.

Accordingly, projects such as the proposed Skeerhok PV 3 project are categorised as Category B projects. The EA Process for Category B projects examines the project's potential negative and positive environmental impacts and compares them with those of feasible alternatives (including the 'without project' scenario). As required for Category B projects a Scoping and EIA Process is being undertaken for the Skeerhok PV 3 project

Other Acts, standards and/or guidelines which may also be applicable will be reviewed in more detail as part of the specialist studies to be conducted for the EIA.

4.3. Principles for Scoping and Public Participation

The PPP for this Scoping and EIA Process is being driven by a stakeholder engagement process that will include inputs from authorities, I&APs, technical specialists and the project proponent. Guideline 4 on "Public Participation in support of the EIA Regulations" published by DEAT in May 2006, states that public participation is one of the most important aspects of the EA Process. This stems from the requirement that people have a right to be informed about potential decisions that may affect them and that they must be afforded an opportunity to influence those decisions. Effective public participation also improves the ability of the Competent Authority (CA) to make informed decisions and results in improved decision-making as the view of all parties are considered.

An effective PPP could therefore result in stakeholders working together to produce better decisions than if they had worked independently.

- "Provides an opportunity for I&APs, EAPs and the CA to obtain clear, accurate and understandable information about the environmental impacts of the proposed activity or implications of a decision;
    - Provides I&APs with an opportunity to voice their support, concern and question regarding the project, application or decision;
    - Enables an applicant to incorporate the needs, preferences and values of affected parties into its application;
    - Provides opportunities for clearing up misunderstanding about technical issues, resolving disputes and reconciling conflicting interests;
    - Is an important aspect of securing transparency and accountability in decision-making; and
    - Contributes toward maintaining a health, vibrant democracy."

To the above, one can add the following universally recognised principles for public participation:

- Inclusive consultation that enables all sectors of society to participate in the consultation and assessment processes;
- Provision of accurate and easily accessible information in a language that is clear and sufficiently non-technical for I&APs to understand, and that is sufficient to enable meaningful participation;
- Active empowerment of grassroots people to understand concepts and information with a view to active and meaningful participation;
- Use of a variety of methods for information dissemination in order to improve accessibility, for example, by way of discussion documents, meetings, workshops, focus group discussions, and the printed and broadcast media;
- Affording I&APs sufficient time to study material, to exchange information, and to make contributions at various stages during the assessment process;

- Provision of opportunities for I&APs to provide their inputs via a range of methods, for example, via briefing sessions, public meetings, written submissions or direct contact with members of the EIA team.
- Public participation is a process and vehicle to provide sufficient and accessible information to I&APs in an objective manner to assist I&APs to identify issues of concern, to identify alternatives, to suggest opportunities to reduce potentially negative or enhance potentially positive impacts, and to verify that issues and/or inputs have been captured and addressed during the assessment process.

At the outset it is important to highlight two key aspects of public participation:

- There are practical and financial limitations to the involvement of all individuals within a PPP. Hence, public participation aims to generate issues that are representative of societal sectors, not each individual. Hence, the PPP will be designed to be inclusive of a broad range of sectors relevant to the proposed project.
- The PPP will aim to raise a diversity of perspectives and will not be designed to force consensus amongst I&APs. Indeed, diversity of opinion rather than consensus building is likely to enrich ultimate decision-making. Therefore, where possible, the PPP will aim to obtain an indication of trade-offs that all stakeholders (i.e. I&APs, technical specialists, the authorities and the development proponent) are willing to accept with regard to the ecological sustainability, social equity and economic growth associated with the project.

4.4. Objectives of the Scoping Process

This Scoping Process is being planned and conducted in a manner that is intended to identify and provide sufficient information to enable the authorities to reach a decision regarding the scope of issues to be addressed in this EIA Process, and in particular to convey the range of specialist studies that will be included as part of the Environmental Impact Reporting Phase of the EIA, as well as the approach to these specialist studies.

As highlighted in Chapter 1 of this Scoping Report, within this context, the objectives of this Scoping Process (as per the 2014 EIA Regulations) are to:

- Identify and inform a broad range of stakeholders about the proposed development;
- Confirm the process to be followed and opportunities for stakeholder engagement;
- Clarify the project scope to be covered;
- Identify and confirm the preferred activity and technology alternative;
- Identify and confirm the preferred site for the preferred activity;
- Clarify the alternatives being considered and ensure due consideration of alternative options regarding the proposed development, including the “No-go” option;
- Conduct an open, participatory and transparent approach and facilitate the inclusion of stakeholder issues in the decision-making process;
- Identify and document the key issues to be addressed in the impact assessment phase (through a process of broad-based consultation with stakeholders) and the approach to be followed in addressing these issues; and
- Confirm the level of assessment to be undertaken during the impact assessment

4.5. Tasks in the Scoping Phase

This section provides an overview of the tasks being undertaken in the Scoping Phase, with a particular emphasis on providing a clear record of the PPP followed. As discussed in Chapter 1 of this Scoping Report, three Solar PV projects are being proposed by the Applicant which requires a Scoping and EIA Process. These projects are referred to as Skeerhok PV 1, Skeerhok PV 2, and Skeerhok PV 3. A separate BA Process will be undertaken for the construction of the proposed transmission lines to and associated electrical infrastructure at the Eskom Nieuwehoop Substation. This separate BA project is referred to as Skeerhok- Transmission Line.

Even though three separate Applications for EA were submitted to the DEA for the Scoping and EIA Projects (i.e. Skeerhok PV 1, Skeerhok PV 2, and Skeerhok PV 3), and three separate Scoping, BA and EIA Reports will be compiled for each project, the PPP will be integrated. Integrated PPP for the proposed projects will entail that all public participation documents (such as newspaper advertisements, site notices, notification letters etc.) will serve to notify the public and organs of state of the joint availability of all reports for the abovementioned projects and will provide I&APs with an opportunity to comment on the reports. This approach is proposed due to the close proximity of the sites (i.e. the proposed projects will take place within the same geographical area) and that proposed project will entail the same activity (i.e. generation of electricity with the use of solar PV panels).

TASK 1: I&AP IDENTIFICATION, REGISTRATION AND THE CREATION OF AN ELECTRONIC DATABASE

Prior to advertising the EA Process in the local print media an initial database of I&APs (including key stakeholders and organs of state) was developed for the Scoping Process. This was supplemented with input from the EIA Project Managers, CSIR, and the Project Applicant, juwi Renewable Energies. Appendix C of this Scoping Report contains the current I&AP database, which has been updated to include requests to register interest in the project, and comments received. At the time of compiling this Scoping Report, the database stands at 73 I&APs, who were informed about the availability of the Draft Scoping Reports for comment on the 18 September 2017.

While I&APs have been encouraged to register their interest in the project from the start of the process, following the public announcements (refer to Task 2), the identification and registration of I&APs will be ongoing for the duration of the study. Stakeholders from a variety of sectors, geographical locations and/or interest groups can be expected to show an interest in the proposed project, for example:

- Provincial and Local Government Departments;
- Local interest groups, for example, Councillors and Rate Payers associations;
- Surrounding landowners;
- Farmer Organisations;
- Environmental Groups and NGOs; and
- Grassroot communities and structures.

In terms of the electronic database, I&AP details are being captured and automatically updated as and when information is distributed to or received from I&APs. This ongoing record of communication is an important component of the PPP. It must be noted that while not required by the regulations, those I&APs proactively identified at the outset of the Scoping Process will remain on the project database throughout the EIA Process and will be kept informed of all opportunities to comment and will only be removed from the database by request.

TASK 2: ANNOUNCEMENT OF THE SCOPING PROCESS

In order to notify and inform the public of the proposed project and invite I&APs to register on the project database, the project and EIA Process was advertised in one local newspaper (i.e. The Gemsbok), proof of which can be seen in **Appendix D of this Final Scoping Report.** The newspaper advertisement also provided the details of the project website (i.e. https://www.csir.co.za/environmental-impact-assessment) where information available on the project, could be downloaded from.

In addition to the newspaper advertisement, letters regarding the Scoping and EIA Processes were mailed to all pre-identified key stakeholders on the database. This letter provided I&APs with a 30-day period to register their interest on the project database and comment on the Draft Scoping Reports.

Regulation 41 (2) (a) of the 2014 EIA Regulations require that a notice board providing information on the project and EIA Process is fixed at a place that is conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of the site where the application will be undertaken or any alternative site. To this end, a 841 mm x 594 mm notice board placed at various locations will reflect in **Appendix F** of this **Final Scoping Report.**

TASK 3: ONGOING COMMUNICATION AND CAPACITY BUILDING

The process for this Scoping and EIA aims to ensure that people are involved from the outset, that we proactively solicit the involvement of stakeholders representing all three dimensions of sustainability (i.e. biophysical, social and economic dimensions), and that we provide them with sufficient and accessible information to contribute meaningfully to the process. In this manner, the PPP aims to build the capacity of stakeholders to participate.

In order to accommodate the varying needs of I&APs and develop their capacity to participate in the process, information sharing forms an integral and ongoing component of the EIA Process to ensure effective public participation. The following provides an overview of how information sharing is being effected throughout the EIA Process in order to develop the capacity of I&APs to effectively engage in the PPP:

- **Website** – placing EIA related project information on the project website (i.e. https://www.csir.co.za/environmental-impact-assessment);
- **Language** – encouraging I&APs to use the language of their choice at meetings or during telephonic discussions and providing translations at meetings in Afrikaans, when required;
- **Newspaper Advertisements** - requesting I&APs to register their interest in the project, raise issues of concern or notifying I&APs of potential public meetings (if required to be held);
- **Letters to I&APs** - notifying them of the various stages of the EIA Process, availability of reports for comment and inviting them to attend potential public meetings (if required to be held). These letters will be sent via registered mail and email (where postal, physical and email addresses are available for I&APs and organs of state on the project database);
- **Report Distribution** – providing hard copies of the Scoping, BA and EIA Reports at local libraries (such as the Kenhardt library) for I&APs to access for viewing. Electronic copies of the reports will also be

loaded onto the project website for access. Key organs of state will be provided with hard copies and/or electronic copies of the reports.

Documents will continuously be posted onto the project website as and when they become available and I&APs will be notified accordingly.

TASK 4: CONSULTATION WITH AUTHORITIES

All public participation documentation will reach the DEA, as well as other relevant authorities and organs of state included on the I&AP database. Additionally, consultation with relevant authorities on a one-on-one basis will be effected where necessary and notes from these meetings will be compiled summarising the main outcomes thereof.

Comments received on the Scoping Process from the authorities will be included in the Issues and Response Trail as an appendix to the Scoping Report (which will be submitted to the DEA for decision-making in line with Regulation 22 of the 2014 EIA Regulations).

TASK 5: TECHNICAL SCOPING WITH PROJECT PROPONENT AND EIA TEAM

The Scoping Process has been designed to incorporate two complementary components: a stakeholder engagement process that includes the relevant authorities and wider I&APs; and a technical process involving the EIA team and the project proponent (juwi).

The purpose of the technical Scoping Process is to draw on the past experience of the EIA team and the project proponent to identify environmental issues and concerns related to the proposed project, and confirm that the necessary specialist studies have been identified. The specialist team has worked with the CSIR on several other projects, as well as having experience from EIAs for other renewable energy projects in the Northern Cape. The specialists were therefore able to identify issues (as shown in Chapter 6 of this Scoping Report) to be addressed in the EIA based on their experience and knowledge of the area and type of activity. Their inputs have informed the scope and Terms of Reference for the specialist studies (as included in Chapter 7 of this Scoping Report). The findings of the Scoping Process with the public and the authorities will inform the specialist studies, which will only be completed after the public Scoping Process has been finalised.

TASK 6: REVIEW OF THE SCOPING REPORT

I&APs were invited to review the Draft Scoping Report for a 30 day period from 18 September 2017 to 23 October 2017.

This stage in the process entails the release of the Scoping Report for a 30-day period for public review (in line with Regulation 3 (8) and Regulation 21 (1) of the 2014 EIA Regulations). All I&APs on the project database were notified in writing of the release of the Draft Scoping Report for review.

The following mechanisms and opportunities were utilised to notify I&APs of the release of the Scoping Report for comment:

- **Correspondence to I&APs** - Letter to notifing I&APs of the release of the Scoping Reports and the comment period sent via registered mail and email (where postal, physical and email addresses are available for I&APs and organs of state on the project database). The letter will included an Executive Summary of the Scoping Reports and a Comment and Registration Form;

- **Availability of Information** - the Scoping Reports were made available for review by I&APs and key authorities through the following means:
    - The Scoping Reports were placed on the project website;
    - The Scoping Reports were placed at the Kenhardt Library;
    - Key authorities wre provided with either a hard copy and/or CD of the Draft Scoping Reports.
    - Telephonic consultations were held with key I&APs and organs of state groups, as necessary.

All issues identified through the review of the Draft Scoping Report were captured in an updated Issues and Responses Trail (as **Appendix H** to this Report), which has been submitted to the DEA for decision-making in line with Regulation 22 of the 2014 EIA Regulations.

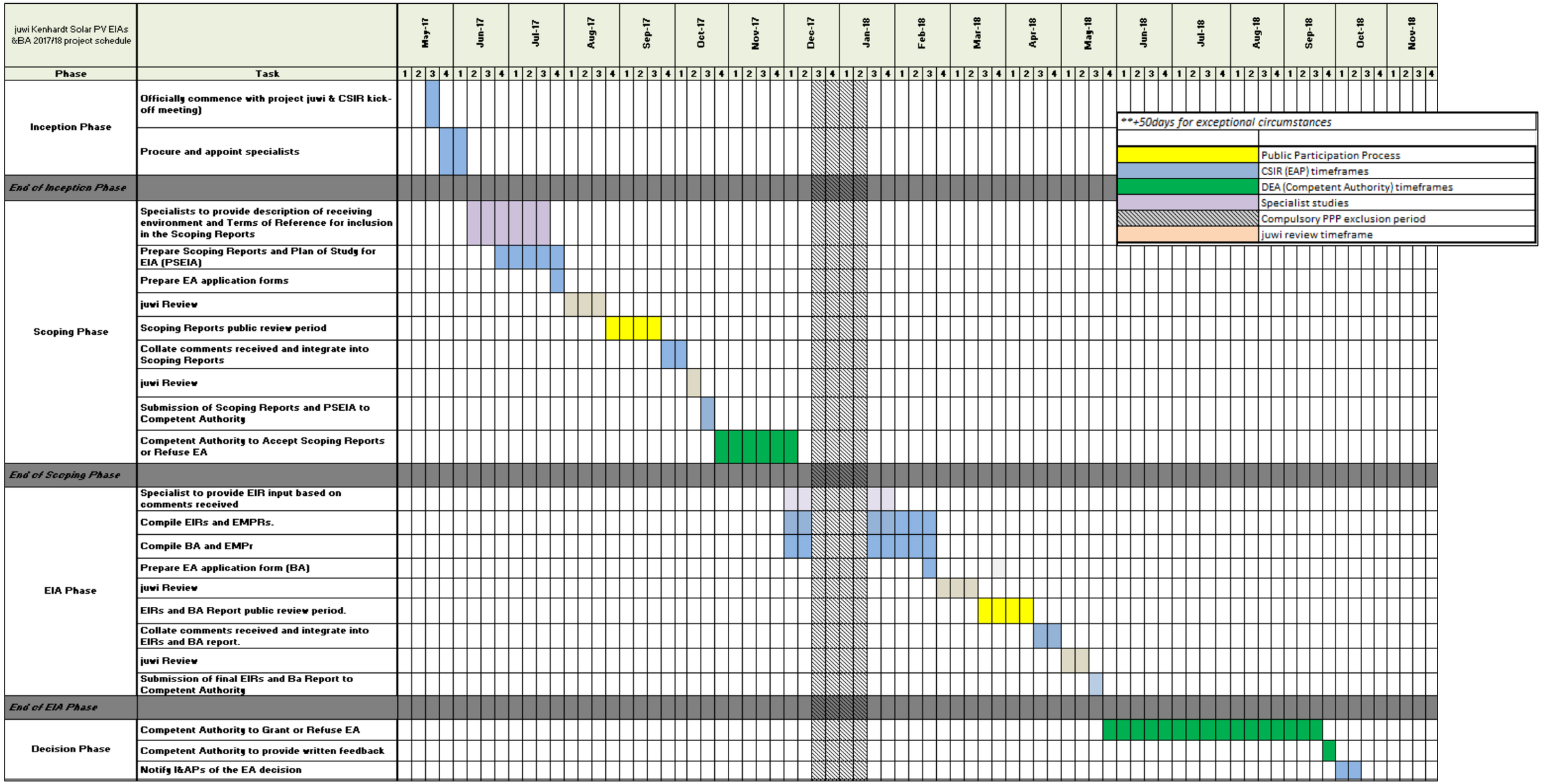
TASK 7: SUBMISSION OF SCOPING REPORTS TO THE DEA FOR DECISION-MAKING (CURRENT STAGE)

This Final Scoping Report is submitted for decision-making. This report includes proof of the PPP that was undertaken to inform organs of state and I&APs of the availability of the Scoping Reports for the 30 day review (during Task 6, as explained above). The DEA will have 44 days (from receipt of this Final Scoping Report) to either accept the Scoping Reports with or without conditions, or refuse EA. This step marks the end of the PPP for the Scoping Phase. The PPP for the subsequent EIA Phase is presented in the Plan of Study for EIA (Chapter 7).

4.6. Schedule for the EIA

The proposed schedule for the EIA, based on the legislated EIA Process, is presented in Table 4.2. It should be noted that this schedule could be revised during the EIA Process, depending on factors such as the time required for decisions from authorities.

Table 4.2: Schedule for the Proposed juwi Kenhardt PV Projects (including the Scoping and EIA Projects and the BA Project)



Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

FINAL SCOPING REPORT

CHAPTER 5: *Project Alternatives*

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5 APPROACH TO THE ASSESSMENT OF ALTERNATIVES

This chapter discusses the alternatives that will be considered as part of the EIA Phase. The 2014 amended EIA Regulations (GN R326) define "alternatives", in relation to a proposed activity, "as different means of meeting the general purpose and requirements of the activity, which may include alternatives to the:

- property on which or location where the activity is proposed to be undertaken;
- type of activity to be undertaken;
- design or layout of the activity;
- technology to be used in the activity; or
- operational aspects of the activity; and
- includes the option of not implementing the activity".

Appendix 2 of the 2014 amended EIA Regulations provides the following objectives of the Scoping Process in relation to alternatives:

- To identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process; and
- To identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment.

The Scoping Report is therefore required to provide a full description of the process followed to reach the proposed preferred activity, site and location within the site, including details of all the alternatives considered and the outcome of the site selection matrix.

Sections 24(4) (b) (i) and 24(4A) of the NEMA require an EIA to include investigation and assessment of impacts associated with alternatives to the proposed project. In addition, Section 24O (1)(b)(iv) also requires that the Competent Authority, when considering an application for EA, takes into account "where appropriate, any feasible and reasonable alternatives to the activity which is the subject of the application and any feasible and reasonable modifications or changes to the activity that may minimise harm to the environment".

Therefore, the assessment of alternatives should, as a minimum, include the following:

- The consideration of the no-go alternative as a baseline scenario;
- A comparison of the reasonable and feasible alternatives; and
- Providing a methodology for the elimination of an alternative.

5.1 Assessment of Alternatives

5.1.1 No-go Alternative

The no-go alternative assumes that the proposed project will not go ahead i.e. it is the option of not constructing the proposed Skeerhok PV 3 project. This alternative would result in no environmental impacts on the site or surrounding local area. It provides the baseline against which other alternatives are

compared and will be considered throughout the report. The following implications will occur if the "no-go" alternative is implemented:

- No benefits will be derived from the implementation of an additional land-use;
- No additional power will be generated or supplied through means of renewable energy resources by this project at this location. The proposed 100 MW facility is predicted to generate just over 200 GW/h per year which could power 20 000 + households;
- The "no go" alternative will not contribute to and assist the government in achieving its proposed renewable energy target of 17 800 MW by 2030;
- No potential impact to the SKA project;
- Additional power to the local grid will need to be provided via the Eskom grid, with approximately 90% coal-based power generation with associated high levels of CO_2 emissions and water consumption;
- Electricity generation will remain constant (i.e. no additional renewable energy generation will occur on the proposed site) and the local economy will not be diversified;
- Local communities will continue their dependence on agriculture production and government subsidies. The local municipality's vulnerability to economic downturns will increase because of limited access to capital;
- There will be no opportunity for additional employment in an area where job creation is identified as a key priority. Approximately 1600 (600 direct and 1000 indirect) employment opportunities will be created during the construction period and 200 (50 direct and 150 indirect) employment opportunities will be created during the operation period of the proposed project;
- There will be lost opportunity for skills transfer and education/training of local communities;
- The positive socio-economic impacts likely to result from the project such as increased local spending and the creation of local employment opportunities will not be realised; and
- The local economic benefits associated with the REIPPPP will not be realised, and socio-economic contribution payments into the local community trust will not be realised.

Converse to the above, the following benefits could occur if the "no-go" alternative is implemented:

- There will be no development of solar energy facilities at the proposed location;
- Only the agricultural land use will remain;
- No vegetation will be removed or disturbed during the development of these facilities;
- No change to the current landscape will occur;
- No heritage artefacts will be impacted on; and
- No additional water use during the construction phase and the cleaning of panels during the operational phase.

While the "no-go" alternative will not result in any negative environmental impacts; it will also not result in any positive community development or socio-economic benefits. It will also not assist government in addressing climate change, reaching its set targets for renewable energy, nor will it assist in supplying the increasing electricity demand within the country. Hence the "no-go" alternative is not currently the preferred alternative.

5.1.2 Land-use Alternatives

5.1.2.1 Agriculture

At present the proposed site is zoned for agricultural land-use, and is mainly used for livestock grazing. As noted in Chapter 3 of this Scoping Report, agricultural potential is uniformly low across the preferred and alternative sites and the choice of placement of the proposed facility on the farm therefore has minimal

influence on the significance of agricultural impacts. There has been an extensive amount of research conducted in the area for similar facilities andno agriculturally sensitive areas were identified within the area under consideration. Hence, agricultural land use is not a preferred alternative.

5.1.2.2 Renewable Energy Alternatives

Where the "activity" is the generation of electricity, possible reasonable and feasible land-use alternatives for the proposed properties include Biomass, Hydro Energy and Wind Energy. However, based on the preliminary investigations undertaken by the Project Applicant, no other renewable energy technologies are deemed to be appropriate for the site. The unsuitability of other renewable energy developments for the site, as well as the potential risks and impacts of each, is discussed below.

Biomass Energy

The proposed project site lacks any abundant or sustainable supply of biomass. According to the South African Renewable Energy Resource Database (SARERD), the project site is identified as having no cumulative biomass energy potential (as shown in Figure 5.1), therefore, the implementation of a Biomass Facility at the proposed site in the Northern Cape is therefore considered to be an unfeasible and unreasonable alternative to the implementation of the proposed solar PV energy facility.

Should biomass energy be selected for the site, significant negative socio-economic implications could be created as it would not be feasible in terms of operations. A biomass facility is also likely to result in unnecessary pollution due to waste generation (especially waste water generated during the operational phase of the biomass facility), traffic impacts and air emissions as a result of operations. A biomass facility is likely to create traffic impacts as the material required for the plant (i.e. biomass) would need to be transported to the site on a regular basis during the relevant seasons

Hydro Energy

The proposed project site lacks any large inland water bodies, which precludes the possibility of renewable energy from small/large scale hydro generation. In terms of micro hydro power potential, the SARERD has classified the proposed project site as "Not Suitable" (as shown in Figure 5.2), therefore, the implementation of a Hydro Energy Facility at the proposed site is therefore also considered to be an unfeasible and unreasonable alternative to the implementation of the proposed solar PV energy facility.

Hydro power is also not noted as a renewable energy source in terms of the municipal IDP. As with biomass, a hydro power facility will be unfeasible and not possible at the proposed project site. If a hydro power was to be constructed instead of a solar facility, it will create significant negative socio-economic implications as it would not be feasible in terms of operations.

Wind Energy

Wind energy is considered to be the most feasible alternative to solar energy when compared to biomass and hydro energy; however the site specific requirements of wind energy facilities make it a less feasible alternative when compared to solar PV. Measurements provided by the Wind Atlas of South Africa (WASA) indicate that the mean wind speed is the highest at the coastal regions of South Africa (as shown in Figure 5.3), and therefore, this alternative is not preferable over solar energy.

Wind energy facilities require that wind turbines are spaced a significant distance from one another. Due to the fact that there is only a certain amount of land available for development, the implementation of a wind energy facility would not make optimum use of that land which is available.

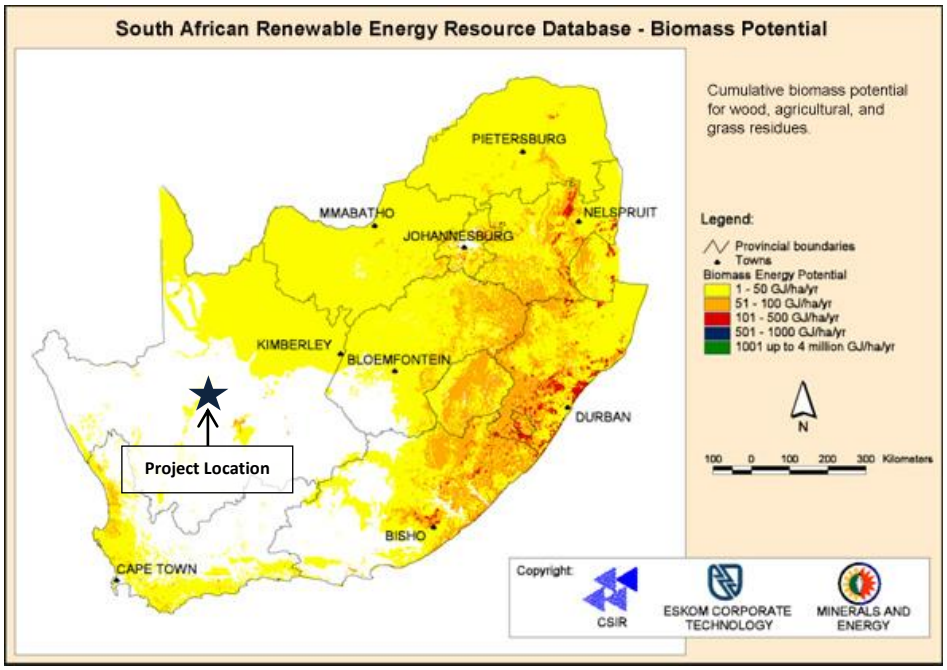

Figure 5.1: Biomass Potential (Source: SARERD, 2016)

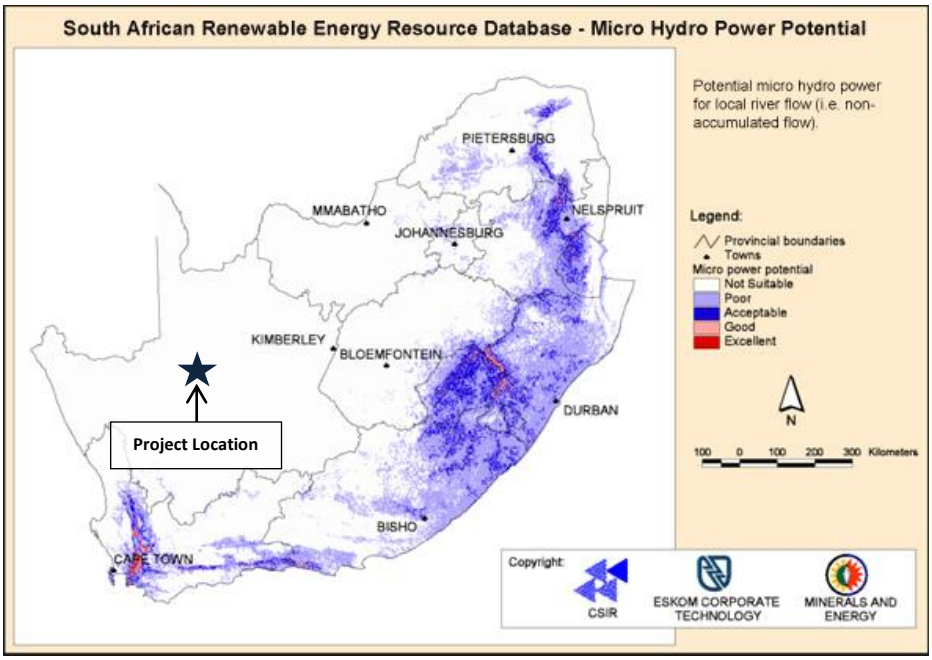

Figure 5.2: Micro Hydro Power Potential (Source: SARERD, 2016)

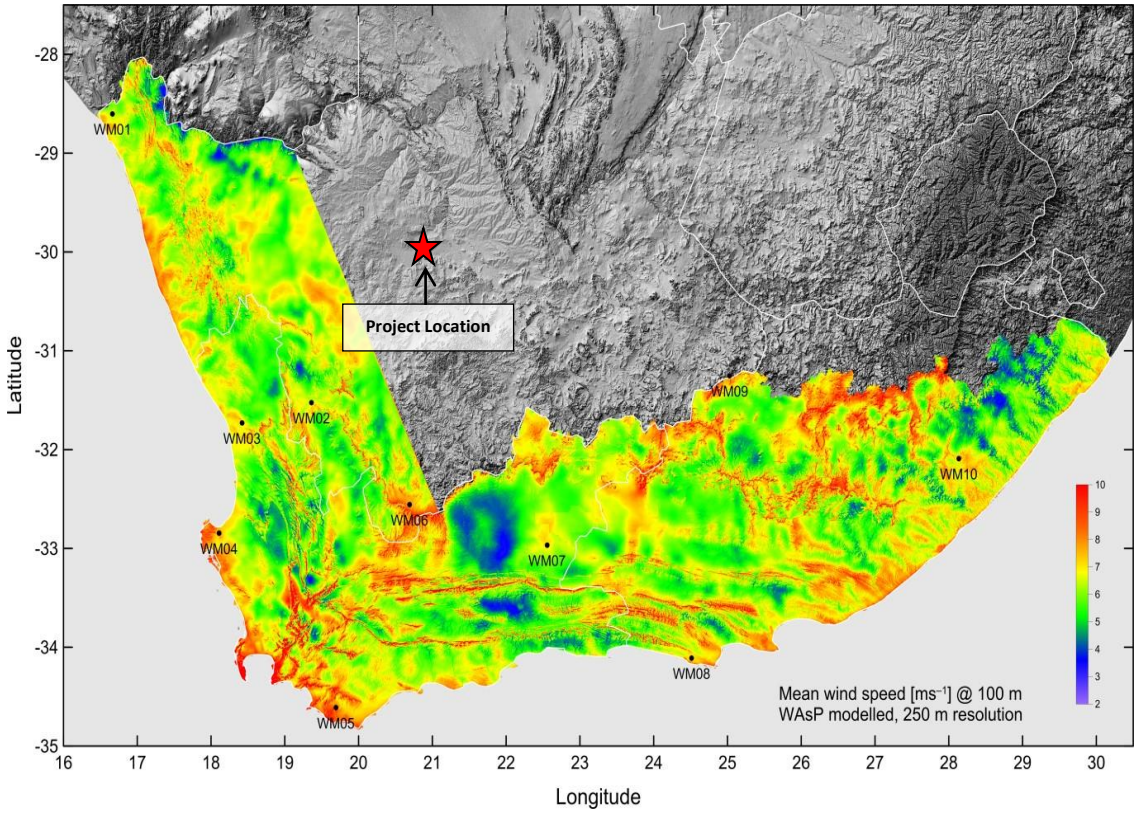

Figure 5.3: Representation of Mean Wind Speed (ms^{-1} at 100 m) (Source: WASA, 2014)

Solar Energy

- *National Level Considerations: Solar Radiation*

The north-western part of South Africa has the highest Global Horizontal Irradiation[1] (GHI), relevant to PV installations (Figure 5.4) and Direct Normal Irradiance[2] (DNI), relevant to CPV and tracking PV installations. Therefore, this section of South Africa is deemed the most suitable for the construction and operation of solar energy facilities as opposed to other areas and provinces within South Africa. For example, coastal regions within KwaZulu-Natal, Eastern Cape and Western Cape mainly have a solar radiation between 1500 kWh/m^2 and 1700 kWh/m^2 per annum, which is not completely feasible for the proposed projects. On the other hand, the Northern Cape (the area with the predominant pink shading in Figure 5.4) has a solar radiation of 2300 kWh/m^2 per annum, which is the highest level. Various developers have received several approvals for PV facilities on farms in the Northern Cape, which shows and justifies the suitability of this area for this type of development.

[1] Global Horizontal Irradiance is the total amount of shortwave radiation received from above by a surface horizontal to the ground

[2] Direct Normal Irradiance is the amount of solar radiation received per unit area by a surface that is always held perpendicular (or normal) to the rays that come in a straight line from the direction of the sun at its current position in the sky.

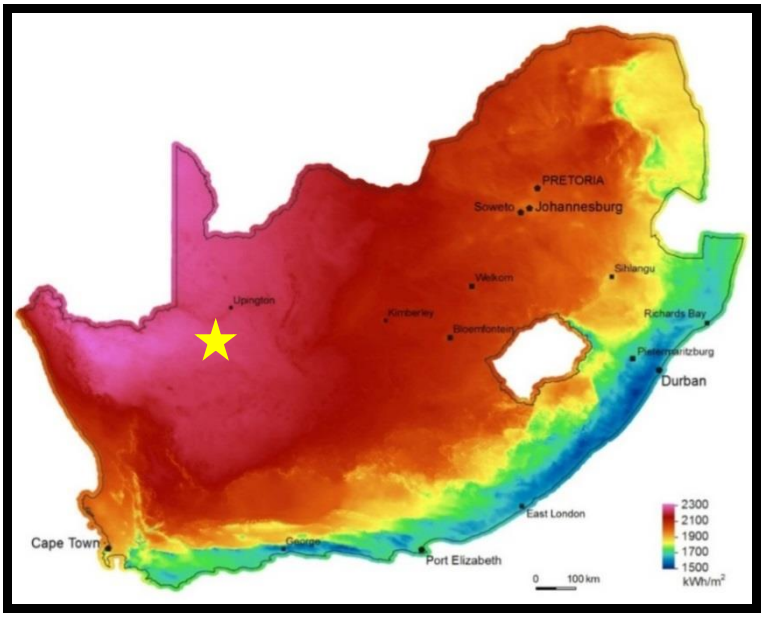

Figure 5.4: Solar Resource Availability in South Africa (Source: SolarGIS map© 2013 GeoModel Solar).

- *REIPPPP and SEA for Wind and Solar PV in South Africa*

The Integrated Resource Plan for South Africa for the period 2010 to 2030 (referred to as "IRP2010") and the IRP Updated Report (2013) proposes to secure 17 800 MW of renewable energy capacity by 2030. The DOE subsequently has entered into a bidding process for the procurement of 3725 MW of renewable energy from IPPs by 2016 and beyond to enable the Department to meet this target. On 18 August 2015, an additional procurement target of 6300 MW to be generated from renewable energy sources was added to the REIPPPP for the years 2021 - 2025, as published in Government Gazette 39111. The additional target allocated for wind energy, solar PV energy, and solar CSP energy is 3040 MW, 2200 MW, and 600 MW respectively.

In order to submit a bid, the proponent is required to have obtained an EA in terms of the EIA Regulations as well as several additional authorisations or consents. As noted in Chapter 1 of this Scoping Report, the National DEA, in discussion with the DOE, was mandated by MinMec to undertake a SEA[3] to identify the areas in South Africa that are of strategic importance for Wind and Solar PV development. The Wind and Solar PV SEA is in support of the Strategic Infrastructure Plan (SIP) 8, which focuses on the promotion of green energy in South Africa. The SEA aimed to identify strategic geographical areas best suited for the roll-out of large scale wind and solar PV energy projects, referred to as REDZs. Through the identification of the REDZs, the key objective of the SEA was to enable strategic planning for the development of large scale wind and solar PV energy facilities in a manner that avoids or minimises significant negative impact on the environment while being commercially attractive and yielding the highest possible social and economic benefit to the country – for example through strategic investment to lower the cost and reduce timeframes of grid access[4]. Following the completion of the SEA, the proposed REDZs, shown in Figure 5.5, were submitted for Cabinet approval for the rollout of solar PV energy in the Northern Cape, Eastern Cape, Western Cape and Free State provinces, including a 30 day public comment period which began in April 2017. Currently, the REDZ are being finalized by Cabinet (including the incorporation of public comment).

[3] Information on this process can be obtained at: http://www.csir.co.za/nationalwindsolarsea/background.html
[4] More information on the SEA can be read at https://redzs.csir.co.za/

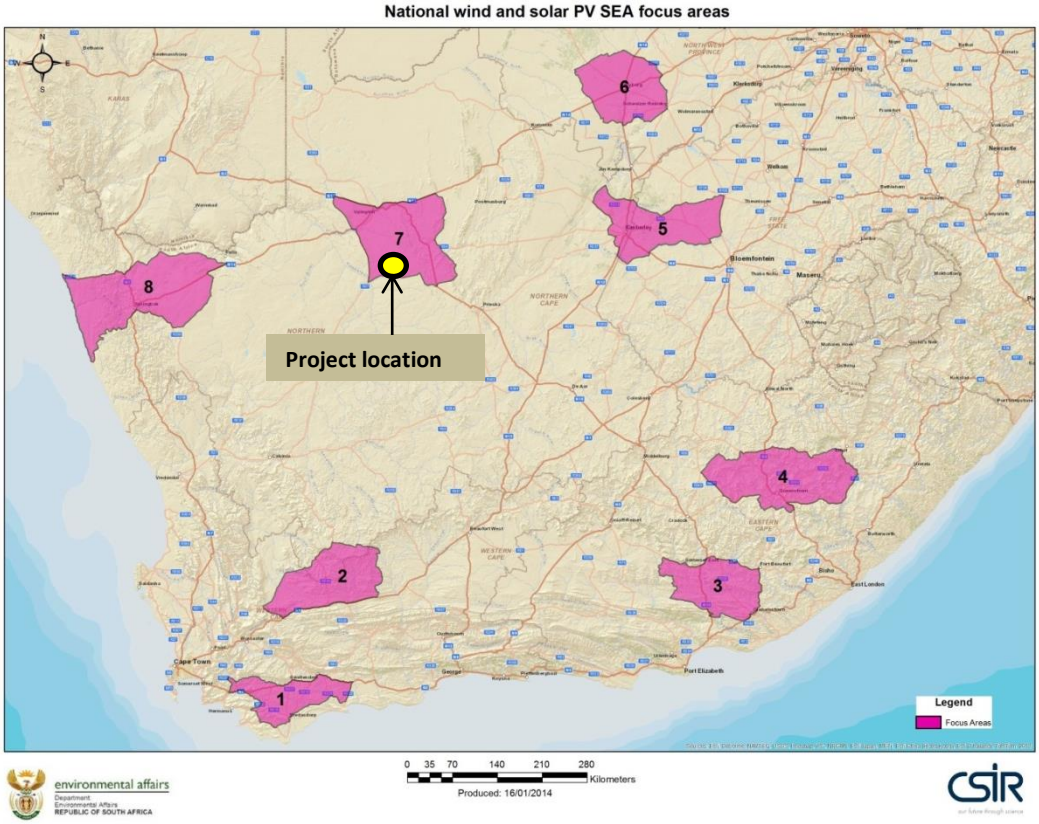

Figure 5.5: Renewable Energy Development Areas identified in the Strategic Environmental Assessment (the proposed juwi project falls within the REDZ 7)

The proposed solar facility **currently falls within the REDZ 7.** The proposed project is therefore in line with the criteria of the SEA and located in an area of strategic importance for Solar PV development. It should be noted that even if a project falls within a REDZ, the proposed development still requires site specific assessments as per the site protocol in order to determine the potential impacts of a project at a local and site specific level. **Therefore, the implementation of a solar energy facility at the proposed project site is more favourable and feasible than other alternative energy facilities.**

Therefore in terms of project and location compatibility, the proposed solar facility is considered to be the most feasible renewable energy land use alternative. Since these alternative land-uses were deemed unsuitable for the area and the preferred and alternative sites, these technologies will not be further assessed during the EIA Phase.

5.1.3 Site Alternatives

As noted above, as per the requirements listed within Appendix 2 (2) (g) (ix) of the 2014 amended EIA Regulations, a site selection matrix should be provided to show how the preferred site was determined through a site selection process. Within this context, it is assumed that the "site" referred to in the 2014 amended EIA Regulations is the farm or land portions on which proposed location alternatives will be considered for the proposed project (discussed in Section 5.1.4 below).

On a site specific level, the site was deemed suitable due to all the site selection factors (such as land availability, distance to the national grid, site accessibility, topography, fire risk, current land use and landowner willingness) being favourable. The site selection criteria considered by the Applicant are discussed in detail below.

5.1.3.1 Site Specific Considerations

The site selection process took into account the following factors shown in Table 5.2.

Table 5.1: Site selection factors and suitability of the site (Smutshoek Farm 395)

FACTOR	SUITABILITY OF THE PREFFERED SITE
Land Availability	The Smutshoek Farm 395 is of a suitable size for the proposed project. The land available to develop at the development footprint of Skeerhok PV 3 extends approximately 350 ha, while only 300 ha will be required for the facility (i.e. Skeerhok PV 3).
Irradiation Levels	2200 - 2300 kWh/m^2/annum (as shown in Figure 5.4)
Distance to the Grid	An Environmental Authorisation for the construction of the 400/132 kV Eskom Nieuwehoop Substation was granted to Eskom Holdings SOC Limited on 21 February 2011 by the DEA (Reference Number: 12/12/20/1166). The substation has been constructed. The proposed project is located approximately 17 km from the Eskom Nieuwehoop Substation.
Site Accessibility	The proposed project site can be accessed via an existing gravel road and the existing Transnet Service Road (private). The existing gravel road can be accessed from the R383 Regional Road via the R27 National Road. The R27 extends from Keimoes (in the north) to Vredendal in the south. The Transnet Service Road can be accessed from the R27. Internal gravel roads will be constructed as part of the proposed project.
Topography	Slope ≤2% (Level to very gentle slope).
Fire Risk	Main vegetation type is Bushman arid grassland, low fire risk.
Current Land Use	Agriculture - Grazing
Landowner Willingness	The landowner has signed consent for the use of the land for the proposed projects. This is considered an important aspect of the proposed project in terms of its viability (i.e. this will limit potential appeals during the decision-making process, as the landowner is willing and supportive of the proposed projects being undertaken on the farm).

Furthermore, from an impact and risk assessment perspective, the implementation of a solar PV project on Smutshoek Farm 395 will result in fewer risks in comparison to its implementation at alternate sites within the Northern Cape (i.e. regions with similar irradiation levels). The following risks and impacts will be likely in this case:

- There is no guarantee that suitable land will be available for development of a solar PV facility. Site geotechnical conditions, topography, fire potential and ready access to a site might not be suitable, thus resulting in negative environmental implications and reduced financial viability.
- There is no guarantee that the current land use of alternative sites will be flexible in terms of development potential, for example the agricultural potential for alternative sites might be higher and of greater significance.

- There is no guarantee of the willingness of other landowners to allow the implementation of a solar facility on their land and if the landowners strongly object, then the project will not be feasible.
- There is no guarantee that other sites within the Northern Cape will be located close to existing or proposed electrical infrastructure to enable connection to the national grid. The further away a project is from the grid, the higher the potential for significant environmental and economic impacts.

Given the site selection requirements associated with solar energy facilities and the suitability of the land available on Smutshoek Farm 395**, no other location or site alternatives will be considered in the EIA Phase.**

5.1.4 Alternative Locations of the Development Footprint

As shown in Figure 5.6 and discussed in Chapter 1 of this Scoping Report, the current project proposal is one of three PV projects proposed on site. The proximity of the site location (preferred) for the Skeerhok PV 3 project to the Nieuwehoop Substation (completed) was the main consideration in terms of technical and economic feasibility of what where the preferred site is.

The determination of the development footprint within the site was determined through a desktop screening assessment of the site and consultation with the relevant landowner identifying possible areas that should not be proposed for the development (i.e. no-go areas). These have already been excluded from the proposed development footprint shown in Figure 5.8 below. The land available to develop within the development footprint of Skeerhok PV 3 extends approximately 337 ha, while only 300 ha will be required for the facility. During the EIA Phase, the specialists will identify any sensitive features within the development footprint. As a result, the final siting of the proposed Skeerhok PV 3 facility within the development footprint will be undertaken during the EIA Phase, whereby any sensitive features identified will be avoided by the proposed layout. The final recommended siting of the proposed Skeerhok PV 3 within the preferred site locality will be provided in the EIA Report, together with specialist recommendations.

Therefore, no other alternative locations for the Skeerhok PV 3 project are being proposed.

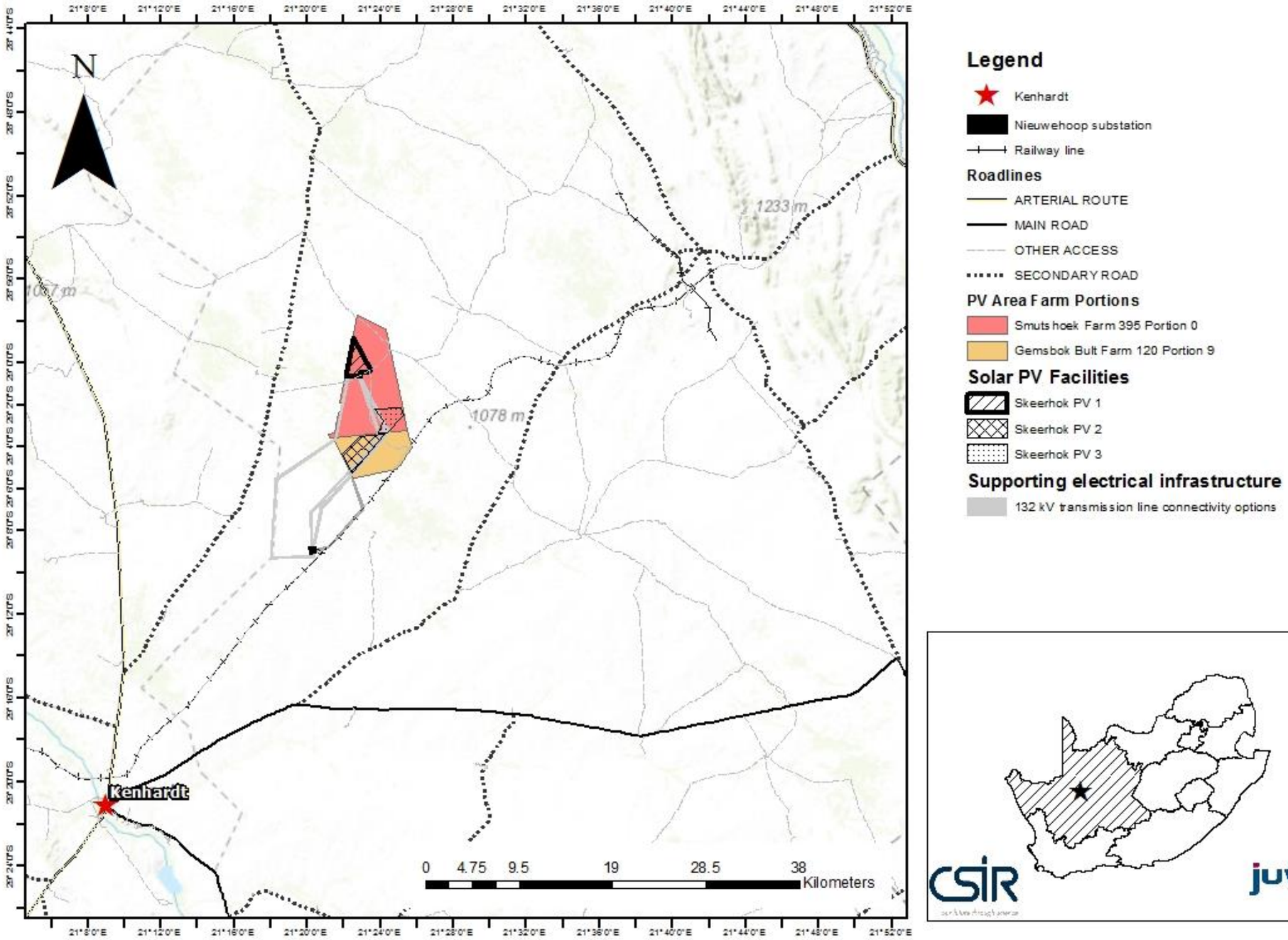

Figure 5.6: juwi Renewable Energies Skeerhok PV 1, Skeerhok PV 2, and Skeerhok PV 3 projects.

5.1.5 Technology Alternatives

5.1.5.1 Solar Panel Types

Only the PV solar panel type will be considered in during the EIA Phase. Due to the scarcity of water in the proposed project area and the large volume of water required for CSP, this technology is not deemed feasible or sustainable and will not be considered further. Furthermore, CPV technology therefore requires a larger development footprint to obtain the same energy output as PV technology, and it requires active solar tracking to be effective. Furthermore, as noted above, in Government Gazette 39111 published on 18 August 2015, no additional procurement target was allocated for CPV.

5.1.5.2 Mounting System

Solar panels can be mounted in various ways to ensure maximum exposure of the PV panels to sunlight. The main mounting systems that will be considered as part of the design are:

- Single axis tracking systems;
- Fixed axis tracking systems;
- Dual axis tracking systems; and
- Fixed Tilt Mounting Structure.

The above mounting systems will be considered during the EIA Phase to inform the detailed design of the proposed solar facility. Additional information regarding the mounting system is provided in Chapter 2 of this Scoping Report.

5.1.6 Layout Alternatives

The findings of the specialist studies will be used to inform the layout within the development footprint of the Skeerhok PV 3 SEF. The specialist studies that will be conducted during the EIA Phase will identify the various environmental sensitivities present on site that should be avoided, which will be taken into account during the determination of the proposed layout of the PV facility.

The aim of the EIA Phase (in terms of the layout of the proposed facility), will be to determine a buildable area for the proposed project within the development footprint of the site, which will be assessed by the specialists and considered during the EIA Phase.

5.2 Concluding Statement of Preferred Alternatives

As per Appendix 2, Section 2 (xi) of the 2014 amended EIA Regulations, and based on Section 5.1 above, the following alternatives will be taken forward into the EIA Phase:

- **No-go Alternative:**
  - The no-go alternative assumes that the proposed project will not go ahead i.e. it is the option of not constructing the proposed Skeerhok PV 3 facility. This alternative would result in no environmental impacts on the site or surrounding local area, as a result of the facility. It will provide a baseline against which other alternatives will be compared and considered during the EIA Phase.

- **Land Use Alternative:**
  - No other land-use or renewable energy technologies were deemed to be appropriate for the site and therefore these technologies will not be further assessed during the EIA Phase. The implementation of a solar energy facility at the proposed project site is more favourable than other alternative energy facilities (please see reasoning in Section 5.1.2 above)

- **Preferred Site and Development Footprint within the site:**
  - The preferred site for the project is Smutshoek 395 and the Skeerhok PV 3 site; and
  - The preferred development footprint within the site was determined based on a rapid desktop screening assessment of the site and consultation with the relevant landowner identifying possible areas that should not be proposed for the development (i.e. no-go areas). These have already been excluded from the proposed development footprint. The current development footprint's size exceeds 300 ha, which is the approximate area required for the Skeerhok PV 3 SEF.

- **Technology Alternatives:**
  - Applicable and relevant technology options will be described during the EIA Phase, such as those relating to the mounting system.

- **Layout Alternatives:**
  - Layout alternatives for the project will be determined following the input from the various specialists. The studies will aim to identify various environmental sensitivities within the development footprint of the site that should be avoided, which will be taken into account during the determination of the proposed layout of the PV facility.
  - The use of the existing Transnet Service Road or the unnamed farm road will also be discussed during the EIA Phase.

Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

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CHAPTER 6: *Issues and Potential Impacts*

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6 ISSUES AND POTENTIAL IMPACTS

The purpose of this chapter is to present a synthesis of the key issues and potential impacts that have been identified thus far as part of the Scoping Process. These issues and impacts have been identified via the environmental status quo of the receiving environment (environmental, social and heritage features present on site) (discussed in Chapter 3 of this Scoping Report), a review of environmental impacts from other similar solar projects and input from specialists that form part of the project team. The Terms of Reference for the specialist studies that have been deemed necessary, based on the relevant issues and impacts discussed within this chapter, are incorporated into the Plan of Study (PoS) for the EIA (discussed in Chapter 7 of this Scoping Report).

6.1 Scoping-level Impact Assessment

Based on the extensive amount of existing information in the area, as well as scoping-level inputs from the various specialists, a high-level preliminary impact assessment was conducted and outlined in Table 6.1 below. The impacts will be verified by relevant specialists during the EIA Phase. The key issues for each field of study have been unpacked in the subsections below, including a description of the assessment to be undertaken in the EIA phase. Please see Chapter 7 for the EIA PoS and Terms of Reference for the specialist studies.

Table 6.1: Scoping level assessment of potential risks/impacts of the proposed juwi Skeerhok PV 3 project on Sumtshoek Farm 395, including high-level mitigation measures.

	Impact pathway	Nature of potential impact/risk	Status[1]	Phase where impact is most anticipated[2]			Extent[3]	Duration[4]	Consequence	Probability	Significance of impact/risk = consequence x probability	Reversibility of impact	Irreplaceability of receiving environment/ resource	Can impact be avoided ?	Can impact be managed or mitigated ?	Potential mitigation measures	Significance of residual risk/impact (after mitigation)	Ranking of impact/risk
				C	O & M	D												
Biophysical	**Clearing of 100 ha and brush cutting of 200 ha of vegetation**	**Habitat and species loss**	–	✓			Site	Long-term	Substantial	Very likely	Moderate	Yes (rehab after decommissioning)	Moderate (endangered vegetation)	x	✓	Minimise disturbance footprint; Plant Search and Rescue (EMPr)	Low	4
		Exposed soil susceptible to erosion	–	✓			Site	Medium-term	Moderate	Likely	Low	Yes (rehab after decommissioning)	Moderate	✓	✓	Erosion Management Plan (EMPr)	Very low	5
	Excavation of watercourses	**Habitat and species loss**	–	✓			Site	Long-term	Severe	Extremely unlikely	Very low	Partially (rehab after decommissioning)	Low	✓	✓	Adaptive project design to avoid watercourses (none anticipated on site)	Very low	5
	Water runoff	**Altered hydrological regimes and water quality**	–	✓	✓	✓	Local	Permanent	Substantial	Likely	Moderate	Yes (rehab after decommissioning)	Low	✓	✓	Adaptive project design to avoid watercourses; Storm Water Management Plan (EMPr)	Low	4
	Disturbance of soils	**Alien plant invasions in disturbed areas**	–	✓	✓		Site	Long-term	Severe	Very likely	High	Yes (rehab after decommissioning)	Moderate (endangered vegetation)	x	✓	Plant Search and Rescue (EMPr); No-off road vehicles	Moderate	3
	Disturbance to fauna (including avifauna)	**Impact on fauna (loss of species, risks and potential habitat loss) and impact on birds specifically relating to powerlines.**	–	✓	✓		Local/regional	Long-term	Substantial	Likely	Moderate	No	Moderate	x	✓	Ensure powerline router takes into account bird patterns making the risk lower for the birds.	Low	4
Social	**Influx of people (jobseekers)**	**Disruption of social fabric (e.g. crime) and pressure on available services (e.g. housing)**	–	✓	✓	✓	Regional	Short-term	Moderate	Very likely	Low	Yes	Low	x	✓	'Locals first' employment policy; Complaints register	Very low	5
	Labour required for project development and operation	**Employment opportunities**	+	✓	✓	✓	Regional	Short-term	Moderate	Likely	High (positive)	Yes	Low	x	✓	'Locals first' employment policy	High (positive)	2 (positive)
	Water use for panel cleaning & maintenance	**Stressed water resource**	–		✓		Local	Long-term	Slight	Unlikely	Very low	Partially (water re-use and recycling)	High	x	✓	Obtain water from sustainable source; Water re-use and recycling	Very low	5
Agriculture	**Clearing of land for project construction**	**Loss of agricultural land**	–	✓			Local	Long-term	Substantial	Very likely	Moderate	Yes (rehab after decommissioning)	Low	x	✓	Minimise disturbance footprint; Erosion Management Plan (EMPr)	Low	4
Economic	**Diversification of land-use to include renewable energy together with agriculture and other economic revenues**	**Increased land-use income**	+		✓		Regional	Long-term	Severe	Very likely	High (positive)	Yes	Moderate	x	✓	None	High (positive)	2 (positive)
	Project expenditure (incl. direct capital investment, and compulsory social investment)	**Investment and growth in local economy**	+	✓	✓	✓	Regional	Long-term	Severe	Very likely	High (positive)	Yes	Moderate	x	✓	None	High (positive)	2 (positive)
	Development of the proposed facility	**Decreased property values**	–	✓	✓	✓	Regional	Long-term	Slight	Unlikely	Very low	Yes	High	✓	✓	Proper construction and management; minimise other potential impacts (e.g. tourism)	Very low	5
Heritage	**Development of the proposed facility in the presence of sensitive heritage resources**	**Destruction of heritage resources (incl. palaeontology,**	–	✓			Local	Permanent	Severe	Unlikely	Low	Partially	Low	x	✓	Adaptive project design to avoid heritage resources	Low	4

[1] Status: Positive (+) ; Negative (-)
[2] Construction (C); Operation and Maintenance (O&M); Decommissioning (D)
[3] Site; Local (<10 km); Regional (<100); National; International
[4] Very short-term (instantaneous); Short-term (<1yr); Medium-term (1-10 yrs); Long-term (project duration); Permanent (beyond project decommissioning)

	Impact pathway	Nature of potential impact/risk	Status[1]	Phase where impact is most anticipated[2]			Extent[3]	Duration [4]	Consequence	Probability	Significance of impact/risk =	Reversibility of impact	Irreplaceability of receiving environment/ resource	Can impact be avoided	Can impact be managed or	Potential mitigation measures	Significance of residual risk/impact (after	Ranking of impact/risk
		archaeology and built environment)																
Visual	**Visual intrusion of the project during construction, operation and decommissioning (incl. night lighting)**	**Transformed visual landscape**	–	✓	✓		Regional	Long-term	Moderate	Very likely	Low	Yes	Low	x	✓	Minimise night-lighting; Maintain appearance of physical structures	Very low	4
Climate Change	**Increase in harmful emissions and Greenhouse gases into the atmosphere due to construction activities**	**Air emissions**	–	✓	✓	✓	local, regional and national (cumulative)	Permanent	Slight	Likely	Low	No	Low	x	✓	Ensure minimum amount of transporting and trucking is utilized and emission levels are managed	Very Low	5

6.2 Terrestrial and Aquatic Ecology

6.2.1 Key Issues

The proposed development will result in a number of actions that will arise in both the construction and operation phases of the project and include inter alia:

- Possible levelling of topographic features;
- Clearance of approximately 100 ha and brush-cutting of approximately 200 ha of vegetation
- Cabling at a sub-surface level;
- Establishment of transformers and substations;
- Establishment of PV module arrays, possibly on tracking mountings;
- Fencing of the site;
- Establishment of towers for powerlines/transmission lines (to be assessed as part of the BA Process); and
- Other supportive infrastructure.

The construction phase is a relatively short term undertaking, although "intensive" in terms of the rapid physical changes that arise on site. The operational phase is more benign in nature, with limited staff and minor activity in and around the proposed PV facility. Given this, it is expected that the following impacts of an ecological nature may arise during the construction and operational phases.

- **Construction Phase**

Terrestrial Impacts:

- Ousting of fauna through increased anthropogenic activities and general change in habitat;
- Increased electrical light pollution leading to changes in nocturnal behavioural patterns amongst fauna;
- Exclusion (or entrapment) of in particular, larger fauna on account of the fencing of the site;
- Changes in soils on account of excavation and import of material, leading to alteration of plant communities and fossorial species in and around these points; and
- Removal of protected species in terms of the Northern Cape Conservation Act.

Aquatic Impacts:

- Alteration in surface drainage patterns on account of construction activities leading to rapid change in plant communities and general habitat structure both within the site and immediately adjacent to site;
- Alteration of surface water quality on account of construction activities that lead to changes in water chemistry (e.g. use of concrete, increased hydrocarbon input, increased sediment within run off etc. alter various chemical parameters)); and
- Depending upon the origin of water (import or through abstraction of groundwater) changes in sub-surface water resources may arise, particularly in the case of the latter.

- **Operational Phase**

Terrestrial Impacts:

- Alteration of ecological processes on account of the exclusion of certain species inherent to the functional state of land within the PV facility i.e. larger fossorial species and predators will be excluded from the PV facility site by virtue of its fencing, generally leading to possible variations in populations of other species that remain within the site, with concomitant ecological change;
- Increased shading of vegetation as a consequence of the PV arrays, will lead to changes in plant water relations and possible changes in plant community structures within the site; and
- The fencing of the site, possibly with electric fencing, is likely to impact upon faunal behaviour, leading to the exclusion of certain species and possible mortalities. Alternatively, such changes may also favour some specific individuals, particularly those that remain within the confines of the proposed PV facility, which is likely to lead to further localised alteration in habitat and ecological processes within the facility.

Aquatic Impacts:

- Abstraction of ground water for the cleaning of modules will alter the state of sub-surface water resources, depending upon nature and origin of such water; and
- Overhead transmission lines, as well as subtle changes in habitat are likely to result in the alteration of avian behaviour in and around the site (which will be assessed as part of the BA Process).

Identified Mitigation Measures to be considered as part the EIA Phase:

- Should any of the Quiver Tree (*Aloe dichotoma*) individuals or other protected species be damaged, cut or removed off-site, a permit would first need to be obtained from the DAFF, Upington office;
- The development footprint should be rehabilitated and returned to an ecological functional state if the site needs to be decommissioned. Recommendations for rehabilitation must be provided in the EMPr, as applicable;
- The project design and layout need to take cognisance of a number of rivers (including alluvial fans and water courses) and potential wetland areas that may occur on or are associated with the proposed project. These would be vulnerable to impact as a result, primarily, of changes in flow associated with the hardening of large areas of land;
- It is critical that the site layout accommodates the need for effective setbacks of the development and its infrastructure from the aquatic habitats; and
- Management of flows into any wetlands or drainage lines should be such that the development, regardless of extent of setback, does not result in any impacts to sensitive aquatic systems.

6.2.2 Assessment to be undertaken during the EIA Phase

An Ecological Impact Assessment (including Terrestrial Ecology, Aquatic Ecology) will be undertaken during the EIA Phase, which will include a site investigation. The findings of the assessment will be utilised to identify the most appropriate location of the project within the development footprint, and any significant or fatal flaws that may arise within the particular development footprint.

6.3 Visual Impacts

6.3.1 Key Issues

The activities that will be undertaken as part of the construction and operation phases of the proposed Skeerhok PV 3 project that will result in potential visual impacts are discussed below. A preliminary analysis of potential visual impacts suggests that the main contributions to the significance of the visual impact for this project will focus on the proposed solar field and on-site substation during the operational phase of the plant.

- **Construction and Decommissioning Phases**

There are various aspects of the construction phase that will contribute to visual impacts caused by the proposed development:

- Approximately 337 ha of vegetation will be cleared for the proposed solar field, equipment laydown areas and buildings;
- Construction activities and equipment associated with construction of the proposed development, including access roads and buildings;
- A slight increase in traffic can be expected on rural roads, particularly large construction and freight vehicles.
- The nightscape will potentially be affected by security and construction lighting at night;
- Construction of the overhead distribution lines and the onsite substation are likely to be visible against the skyline in places;
- Activities during construction of the proposed overhead distribution lines are likely to be visible against the skyline in places;
- Large areas cleared of vegetation will potentially generate dust which will draw attention to the development over a wide area (i.e. increase the visibility of construction activities); and
- There is also potentially an increase in the risk of veld fires occurring during this phase which will have a similar visual effect to dust generation.

Key issues during the construction phase are:

- Potential visual intrusion of construction activities on the existing views of sensitive visual receptors in the rural landscape;
- Potential visual intrusion of a large area cleared of vegetation on the existing views of sensitive visual receptors; and
- Potential visual impact of night lighting during the construction phase on the nightscape of the region.

Similar potential visual impacts identified for the construction phase will be associated with the decommissioning phase.

- **Operational Phase**

A number of elements of the proposed PV solar plant will potentially intrude on the existing views of visual receptors. In particular, the very large solar field (thousands of 3 to 10 m high solar panels covering an area of approximately 300 ha), tall structures such as the on-site substation, and overhead transmission lines connecting the plant with the national power grid at the Eskom Nieuwehoop Substation (which will be assessed separately as part of the BA Process).

Key issues related to the operational phase of the development are:

- Potential landscape impact of introducing a large solar plant into a remote rural landscape;
- Potential visual intrusion of a large solar field on the existing views of sensitive visual receptors;
- Potential visual intrusion of tall, relatively large structures on the existing views of sensitive visual receptors; and
- Potential impact of night lighting of the development on the relatively dark rural nightscape.

Identified Mitigation Measures to be considered as part the EIA Phase:

- Preparation of the solar field area (i.e. clearance of vegetation, grading, contouring and compacting) and solar field construction should be phased in a way that makes practical sense in order to minimise the area of soil exposed and duration of exposure.
- The project owner should maintain re-vegetated surfaces until a self-sustaining stand of vegetation is established and visually adapted to the undisturbed surrounding vegetation. No new disturbance should be created during operations without approval by the Environmental Officer.
- A lighting plan that documents the design, layout and technology used for lighting purposes should be prepared, indicating how nightscape impacts will be minimised.
- Disturbed and transformed areas should be contoured to approximate naturally occurring slopes to avoid lines and forms that will contrast with the existing landscapes.

6.3.2 Assessment to be undertaken during the EIA Phase

A desktop Visual Impact Assessment specialist study will be conducted during the EIA Phase, in order to assess the potential visual impacts of the proposed development on the surrounding communities and regional setting[5]. The Visual Impact Assessment will investigate the above and other concerns raised during the Scoping Phase of the EIA. The cumulative impact on the landscape and visual receptors of other similar projects in the region will also be assessed.

6.4 Archaeology (including Heritage and Cultural Landscape)

6.4.1 Key Issues

Significant impacts to heritage resources are likely to be limited to archaeological resources may be easily avoided by the final layout. Surface archaeological sites in Bushmanland tend to be very easy to record and sample and, as such, mitigation could be very easily effected should this be required. Based on desktop research as well as a field investigation undertaken by the specialist in the scoping phase, many instances of archaeological material were found and recorded. However, the vast majority were of very low significance and do not merit further attention in terms of the siting of the proposed solar energy facilities. These occurrences – they are generally not worthy of being termed sites – may be destroyed without any further archaeological work being required.

One significant site, an isolated grave, was found in the eastern part of Skeerhok PV 3. This grave should be avoided, and inclusion of buffers and maps will form part of the EIA phase.

Key issues during the construction and operational phases are:

[5] The visual impact assessment will not include a site investigation, as there is a lot of baseline visual information already available from other Solar PV EIAs that have been conducted in the area.

- Direct disturbance and/or destruction of archaeological material;
- Direct impacts to the landscape through introduction of industrial type facilities; and
- Direct disturbance and/or destruction of possible graves.

Identified Mitigation Measures to be considered as part the EIA Phase:

- The construction team should be informed of the possibility of encountering graves and should be encouraged to report any suspicious-looking stone features prior to disturbance;
- The potential grave should be avoided with a buffer of at least 5 m or else tested and, if necessary, exhumed prior to construction;
- The built elements of the facility should be painted in an earthy colour to minimise visual contrast in the landscape; and
- If any archaeological material or human burials are uncovered during the course of development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.

6.4.2 Assessment to be undertaken during the EIA Phase

A Heritage Impact Assessment will be during the EIA Phase, which will include an assessment of the potential impacts associated with the proposed development on the heritage features present on site and the mitigation measures to be implemented to adequately protect these heritage features.

Note: An application for this project (Skeerhok PV 3) has been created on SAHRIS, and the Heritage Scoping Report (Appendix K) has been uploaded to the application, **Case ID: 11820.**

6.5 Palaeontology

6.5.1 Key Issues

The Skeerhok PV 3 facility study area on Farm Smutshoek 395 near Kenhardt is located in an area that is underlain by potentially fossiliferous sedimentary rocks of Late Tertiary or Quaternary age as well as by unfossiliferous basement rocks. The construction phase of the proposed PV facility may entail the disturbance, damage or destruction of legally-protected fossil heritage resources preserved at or below the surface of the ground within the development footprint. All fossil material and palaeontological sites in South Africa are considered as part of the National Estate and are protected by the SAHRA. According to this act, it is illegal to disturb, damage or destroy any fossil heritage resources without a permit from the relevant Provincial Heritage Management authority, which in the present case is SAHRA (Contact details: Mrs Colette Scheermeyer, P.O. Box 4637, Cape Town 8000. Tel: 021 462 4502. Email: cscheermeyer@sahra.org.za).

6.5.2 Assessment to be undertaken during the EIA Phase

Despite the low palaeontological sensitivity of the area, a desktop Palaeontological Heritage Assessment will be undertaken during the EIA Phase and it will include recommendations for inclusion in the EMPr.

6.6 Avifauna

6.6.1 Key Issues

The activities that will be undertaken as part of the construction and operation phases of the proposed Skeerhok PV 3 project that will result in potential impacts to avifauna species, and thus bird monitoring has been undertaken (pre-scoping) to understand these impacts up front.

Field work to date has made the following findings with respect to avifauna:

- 43 bird species recorded on or near site in total, 3 of which are Red Listed: Martial Eagle; Ludwig's Bustard; and Red Lark (a single bird).
- The most abundant bird species on site were Larklike Bunting *Emberiza impetuani*; Sociable Weaver *Philitairus socius*; Spike-heeled Lark *Chersomanes albofascialata*; and Black-eared Sparrow-Lark *Eremopterix australis*.
- A Martial Eagle breeding territory exists off site to the south-west, approximately 9-10km from the proposed site. It is suspected that this pair may have bred on a Telkom pole previously, but this pole has been pushed over subsequent to the site visit in May 2017. It is not clear whether these birds will breed this season and where they will nest, and this will be confirmed during the EIA phase.

Likely impacts on avifauna resulting from the construction and operation of the proposed facility include:

- Destruction of bird habitat;
- Disturbance of birds during construction;
- Fatality of birds at the facility (through collision with infrastructure and electrocution on electrical infrastructure);
- Nesting of birds on infrastructure;
- Altered water runoff on site, and
- Chemical pollution from washing of PV panels.

Due to the monitoring that has already been undertaken, a preliminary assessment of the significance of these impacts can be provided, as follows:

1. Habitat destruction during the construction phase will be of MODERATE significance, mitigated to LOW significance.
2. Disturbance of birds during the construction phase will be of LOW significance.
3. Bird fatalities at the facility during the operational phase (mostly through collision with infrastructure) will be of MODERATE significance, mitigated to LOW.
4. Nesting of birds on the facility infrastructure during the operational phase will be of LOW significance.
5. Altered surface water runoff on site during the operational phase will be of LOW significance.
6. Chemical pollution due to panel cleaning during the operational phase will be of LOW significance.
7. Disturbance of birds during the construction phase will be of LOW significance.

At this stage there are no identified spatial constraints on or near site.

Identified Mitigation Measures to be considered as part the EIA Phase:

- Minimise fragmentation and loss of species of special concern (SSC) and protected species and their habitats through the careful siting and layout planning for the project.

- Install Bird Flappers (BFDs) across powerlines at appropriate points.
- Establish a recording method in order to monitor the construction activities, including species presence within site, mortalities and sitings.
- If any breeding or nesting bird of prey is encountered during the construction phase, it must be buffered by at least 500 m.

6.6.2 Assessment to be undertaken during the EIA Phase

During the EIA Phase, a complete Avifaunal Impact Assessment will be conducted which will include the following activities:

- Incorporate more on site data, from all 3 monitoring site visits;
- Provide greater confidence in the findings;
- Develop a site sensitivity map;
- Assesse the cumulative impacts of the proposed development when considering other developments in the area; and
- Develop an operational phase monitoring framework.

6.7 Soils and Agricultural Potential

As noted in the previous chapters, the proposed Skeerhok PV 3 project is expected to cover an area of approximately 300 ha of the farm Smutshoek 395, which is 4332 ha in extent, which is currently being used for livestock grazing. This area will be removed (to a certain extent) from the current land use potential of the farm if the solar project proceeds, although livestock grazing will continue outside the fenced solar facility and potentially inside once the internal project footprint has been rehabilitated.

Using the large amount of existing information for soils and agricultural potential in the area (several EIAs have been conducted in in close proximity and adjacent to the development footprint), the following have been identified as potential impacts on agricultural resources and productivity:

- Loss of agricultural land use due to direct occupation by the infrastructural footprint of the development for the duration of the project. This will take affected portions of land out of agricultural production.
- Soil erosion by wind or water due to alteration of the land surface characteristics. Alteration of surface characteristics may be caused by construction related land surface disturbance, vegetation removal, and the establishment of hard standing areas, surfaces and roads. Erosion will cause loss and deterioration of soil resources and may occur during all phases of the project.
- Degradation of veld vegetation beyond the direct facility footprint due to constructional disturbance and potential trampling by vehicles.
- Loss of topsoil due to poor topsoil management (burial, erosion, etc.) during construction related soil profile disturbance (levelling, excavations, road surfacing etc.) and resultant decrease in that soil's

All the above impacts are local in extent and confined to the site. The significance of potential agricultural impacts is influenced by the extremely limited agricultural capability of the site, with no cultivation on it. None of the above impacts are therefore likely to be of high significance. Mitigation measures can also be put in place to reduce the significance of many of these impacts.

6.7.1 Assessment to be undertaken during the EIA Phase

Given the existing information for the area and desktop screening, the impact of the project on soils and agricultural potential is considered negligible and does not require a specialist study during the EIA Phase. However, an impact statement will be drawn up by the EAP using existing information, and signed off by a qualified agricultural specialist. In addition, the relevant management actions will be incorporated into EMPr that will form part of the EIA Report. The relevant management actions will be incorporated into EMPr that will form part of the EIA Report.

6.8 Social Issues

Similarly to the above, existing information from the several studies done on social impacts of PV projects in the area, a full Social Impact Assessment will not be conducted, however, a desktop review will be done and the impacts will be considered in the EIA phase and suitable measures included within the EIA Phase. By far the most significant driver of change likely to result from the proposed project is the influx of people into the study area, and the corresponding increase in spending and employment. Such an influx of "strangers" into the receiving environment is likely to cause a disturbance in the order of the existing social structure and might also lead to increases in social deviance. Increased spending and employment (even though such employment might be short-term) generates positive impacts through the multiplier effect and by providing much needed financial relief in the area.

Based on the status quo conditions of the study area and the nature of the proposed developments, the following social impacts are anticipated:

- Influx of jobseekers;
- Increased competition for urban-based employment;
- Increases in social deviance;
- Increases in incidence of HIV/AIDS infections;
- Decrease in the property value;
- Expectations regarding jobs;
- Local spending;
- Local employment; and
- Job losses at the end of the project life-cycle.

The potential impacts described above are anticipated to mainly be of very low negative significance after mitigation, whilst some high positive impacts may be expected. Mitigation measures and management actions will be further described in the EIA phase, as indicated below.

6.8.1 Assessment to be undertaken during the EIA

Given the existing information for the area and desktop screening, the impact of the project on soils and agricultural potential is considered negligible and does not require a specialist study during the EIA Phase. However, an impact statement will be drawn up by the EAP using existing information, and signed off by a qualified social specialist. In addition, the relevant management actions will be incorporated into EMPr that will form part of the EIA Report.

6.9 Traffic Generation

During all phases (construction, operation and decommissioning) of the project, traffic will be generated. The highest traffic volumes (anticipated peak 40 - 50 truckloads per week over the estimated 14 month

construction period) will be created during the construction phase. The activities that will generate traffic during the construction phase include site preparation and the transportation of construction materials and associated infrastructure to the site, as well as the transportation of employees to and from the site on a daily basis.

As previously noted, the main roads to be used are the R27 and R383 which, since both are important rural roads, would be classified as Category B roads, in accordance with TRH-4:2006 published by the Department of Transport, which means that these roads would have been designed for a minimum daily traffic exceeding 1000 (equivalent vehicle units). It is unclear what Average Daily Traffic (ADT) the Transnet Service Road and unnamed farm road were designed for, however since both the roads are gravel rural roads, it will most likely be classified as Category D roads and therefore will have a maximum daily traffic limit of 500 (equivalent vehicle units) (TRH-4:2006).

The closest roads to the site for which traffic counts are available show that the R383 (road between Kenhardt and Marydale) and the R361 (between Van Wyksvlei and Kenhardt) have ADTs of 35 and 41, respectively (SANRAL, 2007). The ADTs show that the current traffic volumes are well below the maximum traffic limits for the roads discussed above. Even though traffic will be generated during the construction and operation of the proposed solar PV facility, given the low ADTs of the surrounding roads, it is not expected that the traffic generated by the facility will exceed the maximum daily traffic limits for the abovementioned roads. Therefore, the traffic impacts for the proposed project are anticipated to be low low negative impact (with mitigation measures and management actions).

6.9.1 Assessment to be undertaken during the EIA Phase

The anticipated traffic loads on the R27 and Transnet Service Road are expected to be significantly less than the design capacity of these roads. With this in mind, the traffic volumes contributed by the construction and operation phases of the facility on the existing traffic volumes are considered acceptable. However, an impact statement will be drawn up by the EAP using existing information, and signed off by a qualified traffic specialist. Road maintenance measures (specifically for the Transnet Service Road) and other traffic management measures will be prepared by the EAP and included within the EMPr.

6.10 Proximity to the SKA Project

The Astronomy Geographic Advantage (Act 21 of 2007) aims is to provide for the preservation and protection of areas within the Republic that are uniquely suited for optical and radio astronomy; to provide for intergovernmental co-operation and public consultation on matters concerning nationally significant astronomy advantage areas; and to provide for matters connected therewith.

6.10.1 Assessment to be undertaken during the EIA Phase

Photovoltaic systems are known to have unintentional radiated emissions from electrical and electronic equipment that have the potential to interfere with the SKA Radio Telescope project in the Northern Cape. This can result in interference to celestial observations and/or data loss. Such interference is typically referred to as Radio Frequency Interference (RFI). RFI is a part of the Electromagnetic Compatibility (EMC) discipline that includes Electromagnetic emissions and Electromagnetic immunity. juwi has commissioned a study to understand the possible impact of the development of the Skeerhok projects on the SKA. The project area falls within the astrology advantage area of the Square Kilometer

Array and therefore the possible implications of the technology need to be considered and assessed. Interference Testing Consulting (Pty) Ltd have been approached to conduct a risk evaluation of the planned development on SKA activities. This risk evaluation forms part of the PoS for the impact assessment phase.

This study will consist of a desktop assessment to determine technology risks (power conversion, wireless control systems etc.) of the renewable energy system. As there are a limited amount of tracker plants installed in South Africa the assessment is to be undertaken based on EMI data obtained from laboratory measurements of the plant's key components. The proposed site of the renewable energy installation will be plotted with reference to the MeerKAT, SKA Phase 1 and SKA Phase 2 telescope locations. SKA receiver sensitivities vs expected amplitudes from the renewable power technology will be plotted using the CISPR/IEC emission standards as reference. The cumulative impact resulting from several already approved projects in the vicinity will also be taken into consideration.

Engagement with the SKA has begun on the project and once the results of the study are finalised a comment on the potential impact will be requested for inclusion into the final EIA report.

6.11 Conclusion

In summary, potential impacts associated with the juwi Skeerhok PV 3 project are anticipated to mainly be of very **low to moderate negative significance after mitigation**, whilst some **high positive socio-economic impacts may be expected.**

6.12 Cumulative Impacts

The cumulative impacts will be assessed by identifying other solar energy project proposals and other applicable projects, such as construction and upgrade of electricity generation, transmission or distribution facilities in the local area (i.e. within 20 km of the proposed Skeerhok PV projects) that have been approved (i.e. positive EA has been issued) or the EIA is currently underway.

Cumulative effects associated with these similar types of projects include inter alia:

- Traffic generation;
- Avifaunal collisions and mortalities;
- Habitat destruction and fragmentation;
- Loss of agricultural land;
- Removal of vegetation;
- Increase in stormwater run-off and erosion;
- Increase in water requirements;
- Job creation;
- Increased interference to the SKA project;
- Social upliftment; and
- Upgrade of infrastructure and contribution of renewable energy into the National Grid;
- EMI concerns on the SKA

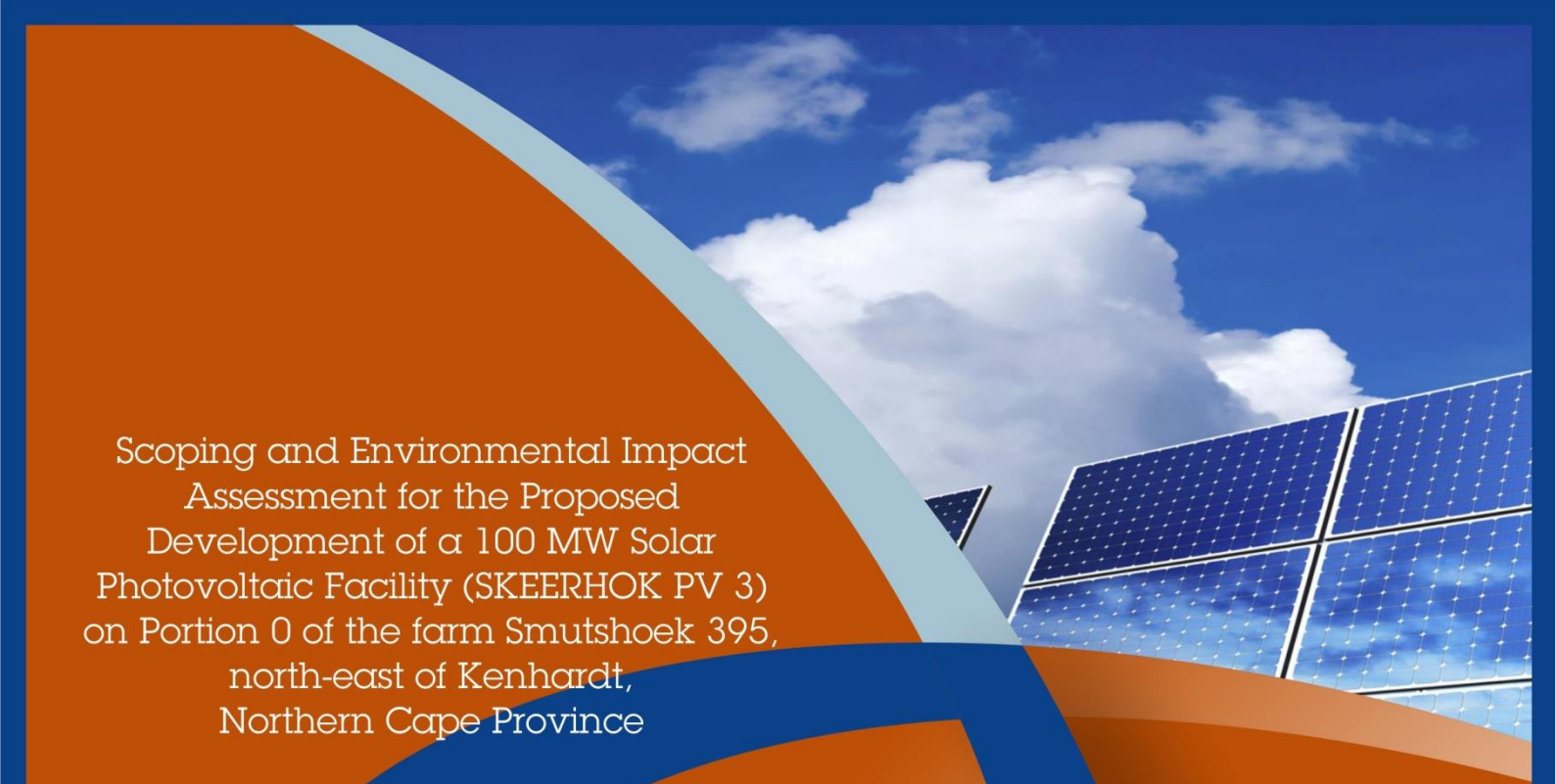
The projects that are being undertaken or are proposed to be undertaken within 20 km of the proposed project are detailed in Table 6.2.

Table 6.2: EIA Processes currently underway within 20 km of the proposed project

Project Name	Applicant	DEA Reference Number	Brief project description	Phase
Nieuwehoop 400/50 kV Substation loop in and loop out lines, Northern Cape Province.	Eskom Holdings SOC Limited	DEA Reference Number: 12/12/20/1166	Construction of the 400/50kv Nieuwehoop substation between the Garona and Aries substations, and 3km Loop In and Loop Out Lines.	The project received a positive EA on 21 February 2011. The substation has been constructed.
EIA, WULA and EMPr for the proposed Solar CSP Integration Project: Project 1 – Solar substation, 2 X 400 kV power lines from Aries to the solar substation and 400 kV power line from Nieuwehoop to the Solar substation.	Eskom Holdings SOC Limited	DEA Reference Number: 12/12/20/2606 NEAS Reference Number: DEA/EIA/0000785/2011	The proposed Solar Park Integration Project entails the construction of a substation at the Upington Solar Park, 400 kV transmission lines to the east and south of Upington to feed the electricity into Eskom's National Grid as well as the construction of a number of 132 kV power lines inter-linking the IPP solar plants with the Eskom Grid and distributing the power generated to Upington.	The project received a positive EA on 14 February 2014.
Proposed construction of Gemsbok PV1 75 MW Solar PV facility on the remaining extent of Portion 3 of the Farm Gemsbok Bult 120, Kenhardt, Northern Cape.	Mulilo Renewable Project Developments (Pty) Ltd	DEA Reference Number: 14/12/16/3/3/2/710	Mulilo Renewable Project Developments (Pty) Ltd intends to develop a 75 MW Solar PV power generation project on the farm Gemsbok Bult (Remaining Extent of Portion 3 of Farm 120).	These projects have received Environmental Authorization on 30/08/2017
Proposed construction of Gemsbok PV2 75 MW Solar PV facility on the remaining extent of Portion 3 of the Farm Gemsbok Bult 120, Kenhardt, Northern Cape.	Mulilo Renewable Project Developments (Pty) Ltd	DEA Reference Number: 14/12/16/3/3/2/711	Mulilo Renewable Project Developments (Pty) Ltd intends to develop a 75 MW Solar PV power generation project on the farm Gemsbok Bult (Remaining Extent of Portion 3 of Farm 120).	
Proposed construction of Boven PV1 75 MW Solar PV facility on the remaining extent of the Farm Boven Rugzeer 169, Kenhardt, Northern Cape.	Mulilo Renewable Project Developments	DEA Reference Number: 14/12/16/3/3/2/712	Mulilo Renewable Project Developments (Pty) Ltd intends to develop a 75 MW Solar PV power generation project on the farm Boven Rugzeer (Remaining Extent of Farm 169).	

Project Name	Applicant	DEA Reference Number	Brief project description	Phase
	(Pty) Ltd			
Proposed development of a 75 MW Solar PV Facility (Kenhardt PV 2) on the remaining extent of Onder Rugzeer Farm 168, north-east of Kenhardt, Northern Cape.	Scatec Solar	To be confirmed	Scatec Solar intends to develop a 75 MW Solar PV power generation project on the remaining extent of Onder Rugzeer Farm 168.	These projects are being undertaken in parallel (i.e. joint PPP). The Scoping Reports are being released for a 30-day comment period.
Proposed development of a 75 MW Solar PV Facility (Kenhardt PV 3) on the remaining extent of Onder Rugzeer Farm 168, north-east of Kenhardt, Northern Cape.	Scatec Solar	To be confirmed	Scatec Solar intends to develop a 75 MW Solar PV power generation project on the remaining extent of Onder Rugzeer Farm 168.	
Proposed development of a 132 kV Transmission Line to connect to the proposed 75 MW Solar PV Facility (Kenhardt PV 1) on the remaining extent of Onder Rugzeer Farm 168 and the remaining extent of Portion 3 of Gemsbok Bult Farm 120, north-east of Kenhardt, Northern Cape.	Scatec Solar	14/12/16/3/3/1/1547	Scatec Solar intends to develop a 132 KV transmission line extending from the proposed 75 MW Solar PV facility (Kenhardt PV 1) to the Eskom Nieuwehoop substation on the remaining extent of Portion 3 of Gemsbok Bult Farm 120.	These projects are pending EA following the appeals that have been upheld.
Proposed development of a 132 kV Transmission Line to connect to the proposed 75 MW Solar PV Facility (Kenhardt PV 2) on the remaining extent of Onder Rugzeer Farm 168, and the remaining extent of Portion 3 of Gemsbok Bult Farm 120, north-east of Kenhardt, Northern Cape.	Scatec Solar	14/12/16/3/3/1/1546	Scatec Solar intends to develop a 132 KV transmission line extending from the proposed 75 MW Solar PV facility (Kenhardt PV 2) to the Eskom Nieuwehoop substation on the remaining extent of Portion 3 of Gemsbok Bult Farm 120.	
Proposed development of a 132 kV Transmission Line to connect to the proposed 75 MW Solar PV Facility	Scatec Solar	14/12/16/3/3/1/1545	Scatec Solar intends to develop a 132 KV transmission line extending from the proposed 75 MW Solar PV facility (Kenhardt PV 3) to the Eskom	

Project Name	Applicant	DEA Reference Number	Brief project description	Phase
(Kenhardt PV 3) on the remaining extent of Onder Rugzeer Farm 168, and the remaining extent of Portion 3 of Gemsbok Bult Farm 120, north-east of Kenhardt, Northern Cape.			Nieuwehoop substation on the remaining extent of Portion 3 of Gemsbok Bult Farm 120.	
Proposed construction of the Mulilo Solar Development consisting of seven 75 MW PV OR Concentrated PV Solar Energy Facilities and associated infrastructure near Kenhardt, Northern Cape	Mulilo Renewable Project Developments (Pty) Ltd	To be confirmed.	Mulilo Renewable Project Developments (Pty) Ltd proposes to construct and operate seven PV or Concentrated PV Solar Facilities with a generating capacity of 75 MW each, on Portions 3 and 8 of Gemsbok Bult Farm 120 and the Remaining extent of Boven Rugzeer Farm 169, located 30 km north-east of Kenhardt. Two of the projects will be located on Portion 3-, two projects on Portion 8 of Gemsbok Bult Farm 120 and three projects on the Remaining Extent of Boven Rugzeer Farm 169. Each 75 MW Solar PV facility proposed will cover an approximate area of 200 ha with a collective footprint of approximately 1 400 ha and a combined power generation capacity of 525 MW. The proposed projects will entail the construction of the solar field, buildings, electrical infrastructure, internal access roads, and associated infrastructure and structures.	Appeal process underway.



Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

FINAL SCOPING REPORT

CHAPTER 7:

Plan of Study for EIA

CONTENTS

TABLES

7. PLAN OF STUDY FOR EIA

This chapter presents the Plan of Study for the EIA (PSEIA), which sets out the process to be followed in the EIA Phase (as required by the 2017 EIA Regulations). The PSEIA is based on the outcomes of the Scoping Phase (to date) and provides the Terms of Reference (TOR) for the specialist studies that have been identified, the alternatives that will be considered and assessed, as well as the PPP that will be undertaken during the EIA Phase.

7.1. Purpose of EIA and Requirements of the 2014 EIA Regulations

The purpose of the EIA Phase is to:

- Address issues that have been identified through the Scoping Process;
- Assess alternatives to the proposed activity in a comparative manner;
- Assess all identified impacts and determine the significance of each impact; and
- Recommend actions to avoid/mitigate negative impacts and enhance benefits.

The EIA Phase consists of three parallel and overlapping processes:

- Central assessment process through which inputs are integrated and presented in an EIA Report that is submitted for approval to the DEA and other commenting authorities (Sections 7.2, 7.3, and 7.4);
- Undertaking of a PPP whereby findings of the EIA Phase are communicated and discussed with I&APs and responses are documented (Section 7.3);
- Undertaking of specialist studies that provide additional information/assessments required to address the issues raised in the Scoping Phase (Sections 7.5, 7.6 and 7.7).

Table 7.1 below shows the requirements for the PSEIA in accordance with Appendix 2 (1) (h) of the 2014 EIA Regulations.

Table 7.1: Requirements for Plan of Study for EIA in accordance with the 2014 EIA Regulations

Section of the EIA Regulations: Appendix 2 (1) (h)	Requirements for a PSEIA in the Scoping Report in terms of Appendix 2 of the 2014 NEMA EIA Regulations (GN R326)	Location in this Chapter
i	A plan of study for undertaking the EIA process to be undertaken, including - ▪ a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;	Section 7.7
ii	▪ a description of the aspects to be assessed as part of the environmental impact assessment process;	Section 7.8
ii	▪ aspects to be assessed by specialists;	Section 7.8
iv	▪ a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;	Section 7.5
v	▪ a description of the proposed method of assessing duration and significance;	Section 7.5

Section of the EIA Regulations: Appendix 2 (1) (h)	Requirements for a PSEIA in the Scoping Report in terms of Appendix 2 of the 2014 NEMA EIA Regulations (GN R326)	Location in this Chapter
vi	▪ an indication of the stages at which the competent authority will be consulted;	Section 7.3 and Section 7.4
vii	▪ particulars of the public participation process that will be conducted during the environmental impact assessment process;	Section 7.3 and Section 7.4
viii	▪ a description of the tasks that will be undertaken as part of the environmental impact assessment process; and	Section 7.2, Section 7.3 and Section 7.4
ix	▪ identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	Section 7.8

7.2. Overview of Approach to Preparing the EIA Report and EMPr

The results of the specialist studies and other relevant project information for the Skeerhok PV 3 project will be summarised and integrated into the EIA Report. The EIA Report will be released for a 30-day I&AP and authority review period, as outlined in Sections 7.3 and 7.4 of this chapter. All registered I&APs on the project database will be notified in writing of the release of the EIA Report for review. Should it be deemed necessary (based on feedback on the Scoping Process), one public meeting can be arranged during this review period, or following requests from stakeholders, several focus group meetings with key I&APs and stakeholders can instead be arranged. The purpose of these meetings (if deemed necessary) will be to provide an overview of the outcome and recommendations from the specialist studies, as well as provide opportunity for comment. Comments raised, through written correspondence (emails, comments, forms) and at meetings (public meeting and/or focus group meetings) will be captured in a Comments and Responses Trail for inclusion in the EIA Reports that will be submitted to the DEA for decision-making in terms of Regulation 23 (1) (a) of the 2014 amended EIA Regulations. Comments raised will be responded to by the EIA team and/or the applicant. These responses will indicate how the issue has been dealt with in the EIA Process. Should the comment received fall beyond the scope of this EIA, clear reasoning will be provided. All comments received (and the associated responses from the EIA team) will be attached as an appendix to the EIA Report for submission to the DEA.

The EIA Report will include an EMPr, which will be prepared in compliance with the relevant regulations (i.e. Appendix 4 of the 2014 amended EIA Regulations). This EMPr will be based broadly on the environmental management philosophy presented in the ISO 14001 standard, which embodies an approach of continual improvement. Actions in the EMPr will be drawn primarily from the management actions in the specialist studies for the construction and operational phases of the project. If the project components are decommissioned or re-developed, this will need to be done in accordance with the relevant environmental standards and clean-up/remediation requirements applicable at the time.

7.3. Public Participation Process

The key steps in the PPP for the EIA Phase are described below. This approach will be confirmed with the provincial and national environmental authorities through their review of the PSEIA.

The PPP for the Scoping Process is described in Chapter 4 of this Scoping Report. As discussed in Chapter 1 and Chapter 4 of this Scoping Report, an integrated PPP will be undertaken for the three Scoping and

EIA projects (i.e. Skeerhok PV 1, SkeerhokPV 2, and Skeerhok PV 3), as well as the BA project (i.e. Skeerhok – Transmission Line). Separate Scoping, BA and EIA Reports will be compiled for each project and these will be made available at in an integrated manner. All advertisements, notification letters and emails etc. will serve to notify the public and organs of state of the joint availability of all reports for the abovementioned projects and will provide I&APs with an opportunity to comment on the reports. As previously noted, the BA Report will be released with the EIA Reports in order to comply with the timeframes stipulated in the 2014 amended EIA Regulations. This process is outlined in Figure 4.1 included in Chapter 4 of this Scoping Report. Based on the close proximity of the sites (i.e. the same geographical area), the same PPP approach will be followed for the EIA Phase.

TASK 1: I&AP REVIEW OF THE EIA REPORT AND EMPR

The first stage in the process will entail the release of the EIA Reports for a 30-day I&AP and stakeholder review period. Relevant organs of state and I&APs will be informed of the review process in the following manner:

- Placement of one advertisement in The Gemsbok local newspaper to notify potential I&APs of the availability of the EIA Reports;
- A letter will be sent via registered mail and email to all registered I&APs and organs of state (where postal, physical and email addresses are available) on the database. The letter will include notification of the 30-day comment period for the EIA Reports, as well as an invitation to attend the public meeting and/or focus group meetings, if required. The letter will include an Executive Summary of the EIA Reports and a Comment and Registration Form;
- A public meeting could possibly be held during the review of the EIA Report, if warranted, and if there is substantial public interest during the EIA Phase. Furthermore, telephonic consultations with key I&APs will take place, upon request; and
- Meeting(s) with key authorities involved in decision-making for this EIA (if required and requested).

The EIA Reports will be made available and distributed through the following mechanisms to ensure access to information on the project and to communicate the outcome of specialist studies:

- Copies of the reports will be placed at the Kenhardt local library for I&APs to access for viewing;
- Key authorities will be provided with either a hard copy and/or CD of the EIA Reports;
- The EIA Reports will be uploaded to the project website (i.e. https://www.csir.co.za/environmental-impact-assessment) and
- Telephonic consultations will be held with key I&AP and organs of state groups, as necessary.

TASK 2: COMMENTS AND RESPONSES TRAIL

A key component of the EIA Process is documenting and responding to the comments received from I&APs and the authorities. The following comments on the EIA Reports will be documented:

- Written and emailed comments (e.g. letters and completed comment and registration forms);
- Comments made at public meetings and/or focus group meetings (if required);
- Telephonic communication with CSIR project team; and
- One-on-one meetings with key authorities and/or I&APs (if required).

The comments received during the 30-day review of the EIA Reports will be compiled into a Comments and Responses Trail for inclusion in an appendix to the EIA Reports that will be submitted to the National DEA in terms of Regulation 23 (1) (a) for decision-making. The Comments and Responses Trail will indicate the nature of the comment, as well as when and who raised the comment. The comments received will be considered by the EIA team and appropriate responses provided by the relevant member of the team and/or specialist. The response provided will indicate how the comment received has been considered in the EIA Reports for submission to the National DEA and in the project design or EMPRs.

TASK 3: COMPILATION OF EIA REPORTS FOR SUBMISSION TO THE DEA

Following the 30-day commenting period of the EIA Reports and incorporation of the comments received into the reports, the EIA Reports (i.e. hard copies and electronic copies) will be submitted to the DEA for decision-making in line with Regulation 23 (1) of the 2014 amended EIA Regulations. In line with best practice, I&APs on the project database will be notified via email (where email addresses are available) of the submission of the EIA Reports to the DEA for decision-making.

The EIA Reports that are submitted for decision-making will also include proof of the PPP that was undertaken to inform organs of state and I&APs of the availability of the EIA Reports for the 30 day review (during Task 1, as explained above). To ensure ongoing access to information, copies of the EIA Reports that are submitted for decision-making and the Comments and Response Trail (detailing comments received during the EIA Phase and responses thereto) will be placed on the project website https://www.csir.co.za/environmental-impact-assessment)

The DEA will have 107 days (from receipt of the EIA Reports) to either grant or refuse EA (in line with Regulation 24 (1) of the 2014 amended EIA Regulations).

TASK 4: EA AND APPEAL PERIOD

Subsequent to the decision-making phase, if an EA is granted by the DEA for the proposed projects, all registered I&APs and stakeholders on the project database will receive notification of the issuing of the EA and the appeal period. The 2014 EIA Regulations (i.e. Regulation 4 (1)) states that after the Competent Authority has reached a decision, it must inform the Applicant of the decision, in writing, within 5 days of such decision. Regulation 4 (2) if the 2014 EIA Regulations stipulates that I&APs need to be informed of the EA and associated appeal period within 14 days of the date of the decision. All registered I&APs will be informed of the outcome of the EA and the appeal procedure and its respective timelines.

The following process will be followed for the distribution of the EA (should such authorisation be granted by the DEA) and notification of the appeal period:

- Placement of one advertisement in The Gemsbok local newspaper to notify I&APs of the EA and associated appeal process;
- A letter will be sent via registered mail and email to all registered I&APs and organs of state (where postal, physical and email addresses are available) on the database. The letter will include information on the appeal period, as well as details regarding where to obtain a copy of the EA;

- A copy of the EA will be uploaded to the project website (https://www.csir.co.za/environmental-impact-assessment) and
- All I&APs on the project database will be notified of the outcome of the appeal period in writing.

7.4. Authority Consultation during the EIA Phase

Authority consultation is integrated into the PPP, with additional one-on-one meetings held with the lead authorities, where necessary. It is proposed that the Competent Authority (DEA) as well as other lead authorities will be consulted at various stages during the EIA Process. At this stage, the following authorities have been identified for the purpose of this EIA Process (additional authorities might be added to this list as the EIA Process proceeds):

- National DEA;
- Department of Environment and Nature Conservation of the Northern Cape Province;
- DWS of the Northern Cape Province;
- Department of Energy of the Northern Cape Province;
- Department of Mineral Resources of the Northern Cape Province;
- Eskom Holdings SOC Ltd;
- Transnet SOC Ltd;
- South African National Parks;
- Department of Social Development;
- National Energy Regulator of South Africa;
- National DAFF;
- DAFF of the Northern Cape Province;
- Department of Agriculture, Land Reform & Rural Development of the Northern Cape Province;
- Department of Public Works, Roads and Transport of the Northern Cape Province;
- Department of Labour;
- SKA;
- SAHRA;
- Ngwao Boswa Kapa Bokoni (Heritage Northern Cape);
- South African Civilian Aviation Authority;
- South African National Road Agency Limited;
- ZF Mgcawu District Municipality;
- Kai! Garib Local Municipality; and
- !Kheis Local Municipality.

The authority consultation process for the EIA Phase is outlined in Table 7.2 below.

Table 7.2: Authority Communication Schedule

STAGE IN EIA PHASE	FORM OF CONSULTATION
During the EIA Process	Site visit for authorities, if required.
During preparation of EIA Reports	Communication with the DEA on the outcome of Specialist Studies, if required
On submission of EIA Reports for decision-making	Meetings with dedicated departments, if requested by the DEA, with jurisdiction over particular aspects of the project (e.g. Local Authority) and potentially including relevant specialists.

7.5. Approach to Impact Assessment and Specialist Studies

This section outlines the assessment methodology and legal context for specialist studies, as recommended by the DEA 2006 Guideline on Assessment of Impacts.

7.5.1. Generic TOR for the Assessment of Potential Impacts

The identification of potential impacts should include impacts that may occur during the construction, operational and decommissioning phases of the development. The assessment of impacts is to include direct, indirect as well as cumulative impacts. In order to identify potential impacts (both positive and negative) it is important that the nature of the proposed projects is well understood so that the impacts associated with the projects can be assessed. The process of identification and assessment of impacts will include:

- Determining the current environmental conditions in sufficient detail so that there is a baseline against which impacts can be identified and measured;
- Determining future changes to the environment that will occur if the activity does not proceed;
- Develop an understanding of the activity in sufficient detail to understand its consequences; and
- The identification of significant impacts which are likely to occur if the activity is undertaken.

As per the DEAT Guideline 5: Assessment of Alternatives and Impacts the following methodology is to be applied to the predication and assessment of impacts. Potential impacts should be rated in terms of the direct, indirect and cumulative:

- **Direct impacts** are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.

- **Indirect impacts** of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.

- **Cumulative impacts** are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. The cumulative impacts will be assessed by identifying other solar energy project proposals and other applicable projects, such as construction and upgrade of electricity generation, and transmission or distribution facilities in the local area (i.e. within 20 km of the proposed Skeerhok PV 3 project) that have been approved (i.e. positive EA has been issued) or is currently underway. The proposed and existing electrical and solar developments that will be considered as part of the EIA Phase is provided in Chapter 6 of this Scoping Report.

- **Spatial extent** – The size of the area that will be affected by the impact:
  - Site specific;
  - Local (<2 km from site);
  - Regional (within 30 km of site);
  - National; or
  - International (e.g. Greenhouse Gas emissions or migrant birds).

- **Intensity** – The anticipated severity of the impact:
  - High (severe alteration of natural systems, patterns or processes);
  - Medium (notable alteration of natural systems, patterns or processes); or
  - Low (negligible alteration of natural systems, patterns or processes).

- **Duration** – The timeframe during which the impact will be experienced:
  - Temporary (less than 1 year);
  - Short term (1 to 6 years);
  - Medium term (6 to 15 years);
  - Long term (the impact will cease after the operational life of the activity); or
  - Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient).

- **Reversibility of the Impacts** - the extent to which the impacts are reversible assuming that the project has reached the end of its life cycle (decommissioning phase) will be
  - High reversibility of impacts (impact is highly reversible at end of project life);
  - Moderate reversibility of impacts;
  - Low reversibility of impacts; or
  - Impacts are non-reversible (impact is permanent).

- **Irreplaceability of Resource Loss caused by impacts** – the degree to which the impact causes irreplaceable loss of resources assuming that the project has reached the end of its life cycle (decommissioning phase) will be:
  - High irreplaceability of resources (project will destroy unique resources that cannot be replaced);
  - Moderate irreplaceability of resources;
  - Low irreplaceability of resources; or
  - Resources are replaceable (the affected resource is easy to replace/rehabilitate).

Using the criteria above, the impacts will further be assessed in terms of the following:

- **Probability** –The probability of the impact occurring:
  - Improbable (little or no chance of occurring);
  - Probable (<50% chance of occurring);
  - Highly probable (50 – 90% chance of occurring); or
  - Definite (>90% chance of occurring).
- **Significance** – Will the impact cause a notable alteration of the environment?
  - Low to very low (the impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making);
  - Medium (the impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated); or
  - High (the impacts will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-making).

- **Status** - Whether the impact on the overall environment will be:
  - Positive - environment overall will benefit from the impact;
  - Negative - environment overall will be adversely affected by the impact; or

  - Neutral - environment overall not be affected.

- **Confidence** – The degree of confidence in predictions based on available information and specialist knowledge:
  - Low;
  - Medium; or
  - High.

Impacts will then be collated into the EMPr and these will include the following:

- Quantifiable standards for measuring and monitoring mitigatory measures and enhancements will be set. This will include a programme for monitoring and reviewing the recommendations to ensure their ongoing effectiveness.
- Identifying negative impacts and prescribing mitigation measures to avoid or reduce negative impacts. Where no mitigatory measures are possible this will be stated.
- Positive impacts will be identified and augmentation measures will be identified to potentially enhance positive impacts where possible.

Other aspects to be taken into consideration in the assessment of impact significance are:

- Impacts will be evaluated for the construction and operation phases of the development. The assessment of impacts for the decommissioning phase will be brief, as there is limited understanding at this stage of what this might entail. The relevant rehabilitation guidelines and legal requirements applicable at the time will need to be applied;
- Impacts will be evaluated with and without mitigation in order to determine the effectiveness of mitigation measures on reducing the significance of a particular impact;
- The impact evaluation will, where possible, take into consideration the cumulative effects associated with this and other facilities/projects which are either developed or in the process of being developed in the local area; and
- The impact assessment will attempt to quantify the magnitude of potential impacts (direct and cumulative effects) and outline the rationale used. Where appropriate, national standards are to be used as a measure of the level of impact.

Table 7.3 is to be used by specialists for the rating of impacts.

Table 7.3: Example of Table for Assessment of Impacts

Nature of impact	Spatial Extent	Duration	Intensity	Probability	Reversibility	Irreplaceability	Mitigation Measures	Significance and Status		Confidence Level
								Without Mitigation	*With Mitigation*	
CONSTRUCTION PHASE (EXAMPLE)										
Scenario 1: Vegetation loss during construction										
Loss of vegetation during the construction of internal roads and on-site substation.	Local, i.e. less than 2 km from PV Solar Energy Facility	Long term, i.e. the impact will cease after the operational life span of the project	High, since there will be severe alteration of the natural system	Highly probable, since construction of the infrastructure cannot progress if vegetation is not cleared.	Moderate	High	Demarcate the construction footprint with hazard tape and ensure workers stay within this area, wherever practical. Educate workers on the need to stay on paths and established tracks wherever practical.	Medium (Negative Impact)	Low (Negative Impact)	High, since the prediction is made on available information

7.6. Issues to be addressed in the Specialist Studies or Input

The issues that will be addressed in the specialist studies/input are included in Chapter 6 of this Scoping Report, however they have been summarised below in Table 7.4 for ease of reference. The identification process undertaken to identify the studies required for the EIA phase are outlined in Chapter 6 of this report.

Table 7.4: Summary of Issues to be addressed during the EIA Phase as part of the specialist studies/input[1]

Specialist Study/Input	Issues to be addressed
Ecological Impact Assessment	**Terrestrial Ecology Impacts – Construction Phase:** ▪ Ousting of fauna through increased anthropogenic activities, disturbance of refugia (location of an isolated population that was widespread in the past) and general change in habitat. ▪ Increased electrical light pollution leading to changes in nocturnal behavioural patterns amongst fauna. ▪ Exclusion (or entrapment) of in particular, larger fauna on account of the fencing of the site. ▪ Changes in edaphics (soils) on account of excavation and import of material, leading to alteration of plant communities and fossorial species in and around these points. **Terrestrial Ecology Impacts – Operational Phase:** ▪ Alteration of ecological processes on account of the exclusion of certain species inherent to the functional state of land within the PV facility i.e. larger fossorial species and predators will be excluded from the PV facility site by virtue of its fencing, generally leading to possible variations in populations of other species that remain within the site, with concomitant ecological change. ▪ Increased shading of vegetation as a consequence of the PV arrays, will lead to changes in plant water relations and possible changes in plant community structures within the site. ▪ Changes in meteorological factors at a localised scale on account of the PV facility is likely to arise (e.g. subtle changes in wind dynamics, "heat bubbles", as well as alteration in run off of surface water and evapo-transpiration states), leading to long term, but generally latent changes in habitat. ▪ The fencing of the site, possibly with electric fencing, is likely to impact upon faunal behaviour, leading to the exclusion of certain species and possible mortalities. Alternatively, such changes may also favour some specific individuals, particularly those that remain within the confines of the proposed PV facility, which is likely to lead to further localised alteration in habitat and ecological processes within the facility.

[1] Note: Soils and agricultural potential, traffic and social impacts will also be assessed using the extensive amount of existing information for the area (separate specialist studies will not be conducted). Please see Chapter 6 for a description of these issues and potential impacts.

Specialist Study/Input	Issues to be addressed
Visual Impact Assessment	**Construction and Decommissioning Phases:** It is likely that all or most components of the proposed facilities will potentially contribute to visual impact during the construction and decommissioning phases. A very large area will be cleared of vegetation to host solar fields and associated buildings and structures. Laydown areas for equipment will also be required although these will be temporary, and will be rehabilitated with endemic vegetation after construction and decommissioning phases. An increase in human activity in a remote area is likely to be noticed even by only a small number of visual receptors. Relatively large construction equipment and vehicles will be operating during these phases of development, and an increase in traffic on roads in the region is likely. Buried pipelines and cables will not be visible during the operational phase, but activity, equipment and soil heaps will be visible during construction. Construction or improvement of access roads will be more visible than the operational roads. All of these potential visual impacts will affect receptors for a relatively short period. The following issues and impacts will be addressed in the Visual Impact Assessment: ▪ Potential visual intrusion of construction activities on the existing views of sensitive visual receptors in the rural landscape; ▪ Potential visual intrusion of a large area cleared of vegetation on the existing views of sensitive visual receptors; and ▪ Potential visual impact of night lighting during the construction phase on the nightscape of the region. **Operational Phase:** Elements of the project that will potentially cause significant visual impact during the operational phase include: ▪ Solar field – The solar field is likely to contrast strongly with surrounding or background vegetation. ▪ Inverter stations (4 m) and operations buildings (5 m); ▪ On-site Substation (30 m) can potentially extend above the skyline for most visual receptors in the surrounding area; and ▪ Security fencing (3 m) and guard cabin (3 m). From some viewing angles the fence is more visible than the panels. The following issues and impacts will be addressed in the Visual Impact Assessment: ▪ Potential landscape impact of introducing a large solar plant into a remote rural landscape; ▪ Potential visual intrusion of a large solar field on the existing views of sensitive visual receptors; ▪ Potential visual intrusion of tall, relatively large structures on the existing views of sensitive visual receptors; and ▪ Potential impact of night lighting of the development on the relatively dark rural nightscape.

Specialist Study/Input	Issues to be addressed
Heritage Impact Assessment (Archaeology and Cultural Landscape)	**Construction and Operational Phases:** ▪ Direct disturbance and/or destruction of archaeological material; ▪ Direct impacts to the landscape through introduction of industrial type facilities; and ▪ Direct disturbance and/or destruction of possible graves.
Desktop Palaeontological Impact Assessment	**Construction Phase:** ▪ Potential damage to or destruction of fossil heritage at or near the surface within the study area.
Avifaunal Impact Assessment	**Construction and Operational Phases:** ▪ Destruction of bird habitat; ▪ Disturbance of birds during construction; ▪ Fatality of birds at the facility (through collision with infrastructure and electrocution on electrical infrastructure); ▪ Nesting of birds on infrastructure; ▪ Altered water runoff on site, and ▪ Chemical pollution from washing of PV panels.
RFI Study (risk evaluation of the planned development on the SKA)	▪ Interference with the SKA project and related operational activities

7.7. Alternatives to be assessed in the EIA Phase

A description of the alternatives that will be assessed or considered during the EIA Phase is provided in Chapter 5 of this Scoping Report. However, they have been summarised below for ease of reference:

- **No-go Alternative:**
  - The no-go alternative assumes that the proposed project will not go ahead i.e. it is the option of not constructing the proposed Skeerhok PV 3 facility. This alternative would result in no environmental impacts on the site or surrounding local area, as a result of the facility. It will provide a baseline against which other alternatives will be compared and considered during the EIA Phase.

- **Land Use Alternative:**
  - No other renewable energy technologies were deemed to be appropriate for the site and therefore these technologies will not be further assessed during the EIA Phase. The implementation of a solar energy facility at the proposed project site is more favourable than other alternative energy facilities due to the following:
    - The solar resources available across the proposed project site are better and represent a higher yield than the biomass, hydro or wind resources available across the same site;
    - Wind energy facilities require that wind turbines are spaced a significant distance from one another. The implementation of a wind energy facility would not make optimum use of the land which is available; and
    - The proposed solar facility currently falls within the REDZ 7 which has been identified by the DEA SEA as being of strategic importance for Solar PV development (as discussed in Chapter 1 and Chapter 2 of this Scoping Report).

- **Location Alternatives within the Selected Site:**
  - The selection of the site (i.e. Smutshoek Farm 395) is described in Chapter 5 of this Scoping Report. During the EIA Phase, the preferred layout within the preferred Skeerhok PV 3 site will be determined.
  - The available development areas of each of the above locations exceed 300 ha, which is the approximate area required for each solar PV project.
  - The determination of the development footprint within the site was determined through a rapid desktop screening assessment of the site and consultation with the relevant landowner identifying possible areas that should not be proposed for the development (i.e. no-go areas). These have already been excluded from the proposed development footprint shown in Figure 5.8, therefore, no other alternative locations for the Skeerhok PV 3 project are being proposed.

- **Technology Alternatives:**
  - Applicable and relevant technology options will be described during the EIA Phase, such as those relating to the mounting system.

- **Layout Alternatives:**
  - Layout alternatives for the project will be determined following the input from the various specialists. The studies will aim to identify various environmental sensitivities present on the preferred site that should be avoided, which will be taken into account during the determination of the proposed layout of the PV facility.
  - The use of the existing Transnet Service Road or the unnamed farm road will also be discussed during the EIA Phase.

It is important to note that where alternatives are not feasible or will not be assessed, a motivation has been provided in Chapter 5 of this Scoping Report. The preferred alternatives will be assessed during the EIA Phase.

7.8. TORs for the Specialist Studies

The TORs for the specialist studies will essentially consist of the generic assessment requirements and the specific issues identified for each discipline. The TORs will be updated to include relevant comments received from I&APs and authorities during the 30-day review of the Scoping Reports.

The following specialist studies have been identified based on the issues identified to date, as well as potential impacts associated with the project. The TORs for each specialist study is discussed in detail below. The specialist studies and associated specialists are shown in Table 7.5 below. Additional specialist studies could possibly be commissioned as a result of issues raised during the Scoping Process. It is important to note that due to the large number of existing studies completed in the area, as well as the large amount of research and information that is readily available, certain specialist studies (i.e. agricultural potential, traffic and social) have not been commissioned, however, traffic, agricultural potential and social impact statement will be compiled by the EAP, based on existing studies undertaken in the area, and reviewed by suitably qualified specialists

Table 7.5: Specialist Studies and Associated Specialists

NAME	ORGANISATION	ROLE/STUDY TO BE UNDERTAKEN
Simon Bundy	Sustainable Development Projects (SDP)	Ecological Impact Assessment (including Terrestrial and Aquatic Ecology)
Jon Smallie	Wild Skies Ecological Services	Avifauna Impact Assessment
Luanita Snyman-Van der Walt	CSIR	Visual Impact Assessment
Dr. Jayson Orton	ASHA Consulting (Pty) Ltd	Heritage Impact Assessment (Archaeology and Cultural Landscape)
Dr. John Almond	Natura Viva cc	Desktop Palaeontological Impact Assessment

As explained in Chapter 6 of this Scoping Report, it is important to note at the outset that cumulative impacts will be assessed in the specialist studies (as applicable) by identifying other solar energy project proposals and other applicable projects, such as construction and upgrade of electricity generation, transmission or distribution facilities in the local area (i.e. within 20 km of the proposed Skeerhok PV projects) that have been approved (i.e. positive EA has been issued) or the EIA is currently underway. The cumulative impacts will be assessed in terms of each proposed Skeerhok PV projects as well.

Important note regarding the RFI study: As noted in Chapter 4 and Chapter 6 of this Scoping Report, a Square Kilometre Array (SKA) RFI Study has been commissioned for the proposed juwi Solar PV projects(s) in Kenhardt. This study will not comply with the requirements of Appendix 6 of the EIA Regulations, since it is a technical assessment to inform the SKA's comment and not an environmental issue required to be addressed via the requirements of the 2014 EIA Regulations, as amended. The Terms of Reference for this study are included in **Section 7.8.6** below.

7.8.1. Ecological Impact Assessment

Chapter 6 of this Scoping Report highlights the issues that will be addressed in the Ecological Impact Assessment as part of the EIA Phase of the proposed project. Based on the issues identified, the potential impacts arising should be considered in terms of both the construction and operational phases, where the former is to be considered a short term, rapid impact of varying severity, while the latter is considered to have longer term, more subtle changes in the habitats/sites in question. Impacts are considered to be both negative and positive in nature, depending upon the approach to such issues. The possible impacts arising as a consequence of the implementation of the proposed project will be considered through the undertaking of a **detailed Ecological Impact Assessment (including terrestrial and aquatic ecology)** that will give due consideration to the key issues highlighted in Chapter 6, including habitat and ecological processes, as well as geohydromorphic factors. The findings of the Ecological Impact Assessment will be utilised to identify the most appropriate layout of the site within the development footprint, or any significant or fatal flaws that may arise within a particular site and the preferred layout of the project within the site.

The Ecological Impact Assessment will therefore be undertaken with the following broad TORs as follows:

- Identification of baseline ecological parameters, based upon the floral and faunal state of the preferred site;
- Consideration of ecological drivers upon the proposed sites;
- Consideration of possible changes in drivers as well as direct impacts that would arise as a consequence of the establishment of the proposed facility;
- Identification of significance of such change and integration into impact evaluation methods.

- Provide clearly defined and rated cumulative impacts and where, applicable, quantify the cumulative impact;
- Consideration of mitigation or avoidance measures that may be employed to obviate negative impacts that are identified in the evaluation processes; and
- Final consideration of planning and layout, as well as operations, will be undertaken to assist with the employment of the abovementioned mitigation measures.
- Cumulative Environmental Impact Statement on whether the proposed development must proceed.

Overall, the study will include the following tasks:

- Review detailed information relating to the project description and precisely define the environmental risks to the terrestrial environment and consequences for ecology;
- Draw on desktop information sources, the knowledge of local experts, information published in the scientific press and information derived from relevant EIAs and similar specialist studies previously conducted within the surrounding area;
- Compile a baseline description of the terrestrial ecology of the study area, and provide an overview of the entire study area in terms of ecological significance and sensitivity. The description will include the major habitat forms within the study sites, giving due consideration to terrestrial ecology (flora) and terrestrial ecology (fauna). The desktop review will be undertaken using spatial data, SANBI conservation data, as well as other related information;
- Provide specific ecological data in respect of the floral components of the site using ground-truthing methods, with an emphasis on those areas considered to be of “high” and possibly, “moderate” sensitivity (based on the desktop study);
- Based on the desktop study, undertake field work and spot sampling across the site to record relevant data and to compile an overview of the habitat under review. The field assessment will aim to confirm the nature and structure of the habitat within the study area from an ecological perspective, and it will aim to identify key ecological components within the study area and in specific, the sensitivity of the prevailing habitat, as well as the identification of any floral components worthy of consideration;
- Collate all data collected during the field work and undertake a statistical review using methodologies that allows for comparison of biological data;
- Incorporate relevant information from other specialist reports/findings if required;
- Provide a detailed terrestrial and aquatic ecological sensitivity map of the site, including mapping of disturbance and transformation on site;
- Identify and rate potential direct, indirect and cumulative impacts on the terrestrial ecology, communities and ecological processes within the site during the construction, operation and decommissioning phases of the project. Study the cumulative impacts of the project by considering the impacts proposed solar facilities, together with the impact of the proposed project;
- Provide input to the EMPr, including mitigation and monitoring requirements to ensure that the impacts on the terrestrial ecology are limited; and
- Compile an assessment report qualifying the risks and potential impacts on terrestrial ecology in the study area and impact evaluations.

It is important to note that all investigations and interpretation of results will be subject to findings during site reconnaissance, where after methods described above may vary to accommodate such findings.

7.8.2. Visual Impact Assessment

The assessment will follow guidelines for Visual Impact Assessments provided by the Provincial Government of the Western Cape (PGWC) and CSIR (Oberholzer, 2005), and the Landscape Institute of the UK (GLVIA, 2002). Land Planning guides, Spatial Development Frameworks, and IPDs and other documentation relevant to the region will be referenced as part of the study.

The overall objectives of the Visual Impact Assessment specialist study are to identify and investigate potential visual impacts associated with the development of a large solar energy facility and its infrastructure near Kenhardt in the Northern Cape. The Visual Impact Assessment will therefore need to:

- Describe, in sufficient detail, the existing landscape and visual conditions of the surrounding region to form a baseline against which impacts can be measured and compared;
- Identify potential visual impacts that may occur during construction, operational and decommissioning phases of the development, as well as future potential impacts that may occur if the plant is not developed (the "no go" option), both positive and negative impacts;
- Provide clearly defined and rated cumulative impacts and where, applicable, quantify the cumulative impact;
- Assess the severity and significance of the potential impacts in terms of direct, indirect and cumulative impacts;
- Provide recommendations with regards to potential monitoring programmes;
- Determine mitigation and/or management measures which could be implemented to reduce the effect of negative impacts, or enhance the effect of positive impacts, as far as possible; and
- Incorporate and address issues and concerns raised during the Scoping Phase of the EIA where they are relevant to the specialist's area of expertise.
- Provide a cumulative Environmental Impact Statement on whether the proposed development must proceed.

The Visual Impact Assessment will be undertaken in the following manner:

- Desktop Review and Analysis
  - A Geo-Information System (GIS) exercise will be undertaken to quantify the visual impacts because of the development of the proposed SEF.

- Impact Assessment, Mitigation and Report Writing
  - Potential direct, indirect and cumulative visual impacts will be identified and assessed for the construction, operational and decommissioning phases of the project. Study the cumulative impacts of the project by considering the impacts of proposed solar facilities, together with the impact of the proposed project.
  - Compile a Visual Impact Assessment report that will focus on measures to reduce negative aspects, compensatory measures to offset negative aspects, and enhancement of positive aspects. Indicators for monitoring the efficacy of mitigation measures will be suggested (for inclusion in the EMPr).

7.8.3. Heritage Impact Assessment (Archaeology and Cultural Landscape)

The following broad TOR has been specified for the Heritage Impact Assessment (including Archaeology and Cultural Landscape) to be undertaken during the EIA Phase:

- Prepare and undertake a desktop study on the fossil heritage, archaeology, and heritage sites within the proposed project area.
- Undertake a detailed field examination of the archaeological sites and heritage features within or in the region of the development area.
- Describe the type and location of known archaeological sites and in the study area, and characterise all heritage items that may be affected by the proposed project.
- Describe the baseline environment and determine the status quo in relation to the specialist study.
- Record sites of archaeological relevance (photos, maps, aerial or satellite images, GPS co-ordinates, and stratigraphic columns).
- Evaluate the potential for occurrence of archaeological features within the study area.
- Identify and rate potential direct, indirect and cumulative impacts of the proposed project on the archaeological heritage for the construction, operational and decommissioning phases of the project. Study the cumulative impacts of the project by considering the impacts of proposed solar facilities, together with the impact of the proposed project.
- Compile a report providing a review of archaeological heritage within the study area based on desktop study and new data from fieldwork and analysis.
- Provide recommendations and suggestions regarding archaeological heritage management on site, including conservation measures to ensure that the impacts are limited.
- Provide input to the EMPr, including mitigation measures and monitoring requirements to ensure that the impacts on the archaeology are limited.
- Provide clearly defined and rated cumulative impacts and where, applicable, quantify the cumulative impact;
- Provide a cumulative Environmental Impact Statement on whether the proposed development must proceed.

7.8.4. Desktop Palaeontological Impact Assessment

Based on the low palaeontological sensitivity of the area a desktop Palaeontology Impact Assessment will be conducted. The Palaeontology Impact Assessment will be used to identify possible palaeontological sites or features by making use of desktop sources. The study will assess the significance of such sites, describe the possible impact of the proposed project on these sites and provide recommendations for mitigation or monitoring measures where applicable. The desktop study will be conducted in accordance with the requirements of the NHRA.

7.8.5. Avifauna Assessment

The activities that will be undertaken as part of the construction and operation phases of the proposed Skeerhok PV 3 project that will result in potential impacts to avifauna species, and thus bird monitoring has been undertaken (pre-scoping) to understand these impacts up front. The following broad TOR has been specified for the Avifaunal Impact Assessment to be undertaken during the EIA Phase:

- Incorporate more on site data, from all 3 monitoring site visits;
- Provide greater confidence in the findings;
- Develop a site sensitivity map;
- Provide clearly defined and rated cumulative impacts and where, applicable, quantify the cumulative impact;
- Assesse the cumulative impacts of the proposed development when considering other developments in the area and;
- Develop an operational phase monitoring framework.

- Provide a cumulative Environmental Impact Statement on whether the proposed development must proceed.

NB: It is important to note that the study will be conducted according to the best practice guidelines for "assessing and monitoring the impact of solar power generating facilities on birds in Southern Africa" compiled by **BirdLife** in **January 2017.** Compliance with these guidelines will be included in the Avifaunal Specialist Study that will be conducted in the EIA phase.

7.8.6. SKA RFI Study

The Terms of Reference for the Radio Interference Study for the Square Kilometer Array can be seen below:

Terms of reference for the Risk evaluation of the Skeerhok PV 1, 2 and 3 Plants to SKA antenna installations
KEYWORDS
System Level EMC, EMC Environment, SKA
DISTRIBUTION
Juwi Renewable Energies (Pty) Ltd
EXECUTIVE SUMMARY
A high level risk assessment of the potential impact of the proposed Skeerhok developments on the current SKA installation location information will indicate the level of additional mitigation (if any) that will be required based on the proposed design and possible technology partners. Natural terrain barriers such as hills will provide additional shielding between the SKA installations and the proposed plant. This will be presented in the assessment for the worst case scenarios.

7.8.6.1. Background

Three possible locations, Skeerhok 1, Skeerhok 2 and Skeerhok 3 have been identified for a Photovoltaic (PV) development by Juwi Renewable Energies (Pty) Ltd. The technology partners are not yet confirmed.

The SKA is a stakeholder mentioned in the Environmental Authorisation of the proposed project. In order to determine whether the planned solar development could have any influence on the SKA, juwi Renewable Energies (Pty) Ltd requested a risk evaluation of the planned development to SKA activities.

The frequency band of concern for SKA midband is 200MHz to 20GHz.This assessment does not consider any potential telecommunication services or networks that are to be established as part of the operational plan.

7.8.6.2. Scope

This assessment will be a high level desktop study and can be updated based on additional measurement results and design information as it becomes available

7.8.6.3. Intent

The intent of this evaluation is to ensure that the Skeerhok facilities pose a low risk of detrimental impact on the SKA by comparing the anticipated emissions from equipment complying to the CISPR 11/22 limits minus the path loss due to distance and terrain to the protection levels required by SKA to ensure interference free operations. Should additional mitigation (shielding and filtering) be required it will be quantified in the report.

7.8.6.4. Methodology

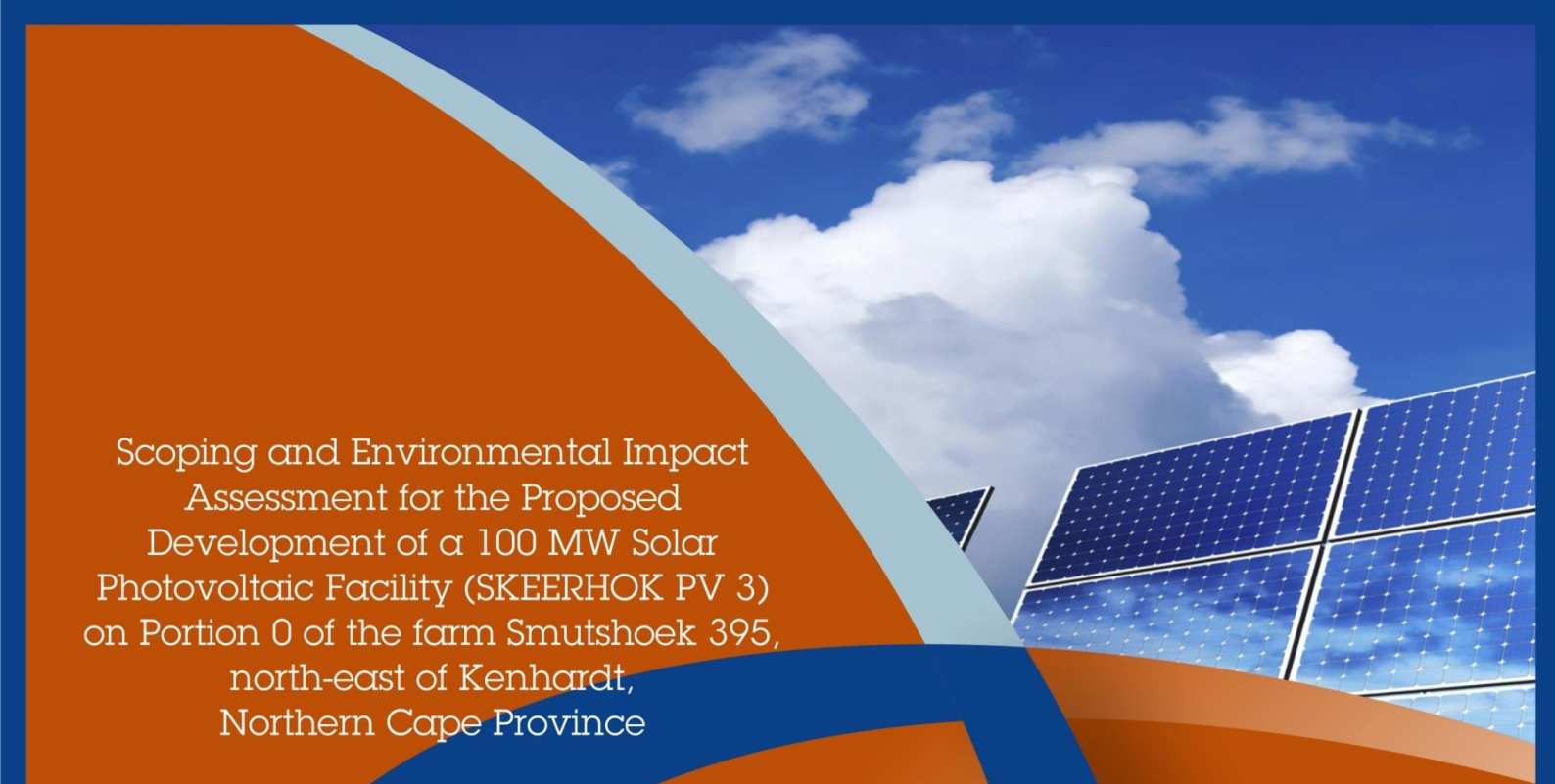
This phase of assessment consists of a paper exercise to determine technology risks (power conversion, trackers control systems etc) of the renewable energy system. Possible interference source data is based on laboratory test results and field measurements. A second phase of assessment may become necessary, consisting of field measurements, to confirm results or provide further input. The proposed site of the renewable energy installation is plotted with reference to the closest of the MeerKAT, SKA Phase 1 and SKA Phase 2 telescope locations in **Error! Reference source not found.**.

The expected loss as determined by the Irregular Terrain Model [4] (Longley Rice model applicable for frequencies between 20MHz and 20GHz) between the proposed site and nearest SKA stations will be presented in the final report. The reduction in power density of an electromagnetic wave as it propagates is a function of free-space loss (natural expansion of the wave front in free space (i.e. distance between source and receiver), diffraction loss (part of the wave front is obstructed by an obstacle, in this case terrain such as a hill), vegetation and foliage (environment) and the propagation medium (dry/ moist air in this case) to name a few.

Although reference is made to CISPR 11 and CISPR 22, it should be noted that the quasi-peak detector used for CISPR tests will result in low amplitudes being recorded for signals with a low pulse repetition rate. Due to the number of potential sources on the plant and the characteristics of a radio telescope, peak detection (max hold function) has been used when evaluating impulse signals with low repetition rates.

A large number of non-correlated noise sources (inverters, PV panel controls etc.) could increase the noise floor at a receiving site distant from the noise sources, therefor the cumulative effects needs to be addressed.

Assuming that the emissions from each Skeerhok PV plant is attenuated in accordance with an EMC Process Control Plan, such that the individual PV plants will not result in interference at the SKA, then the Skeerhok PV plants are expected to have minimal/ negligible contribution to the potential cumulative impact to the SKA.



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CHAPTER 8: *References*

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Appendix D	Copy of Newspaper Advertisements
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APPENDIX A:

Curriculum Vitae of the Environmental Assessment Practitioner

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Curriculum Vitae of Paul Lochner – Technical Advisor and Quality Assurance (EAPSA) Certified

Name of firm	CSIR
Name of staff	Paul Lochner
Profession	Environmental Assessment and Management
Position in firm	Manager: CSIR Environmental Management Services
Years' experience	24 years
Nationality	South African

Biographical Sketch

Paul Lochner commenced work at CSIR in 1992, after completing a degree in Civil Engineering and a Masters in Environmental Science, both at the University of Cape Town. His initial work at CSIR focused on sediment dynamics and soft engineering applications in the coastal zone, in particular, beach and dune management. He conducted several shoreline erosion analyses and prepared coastal zone management plans for beaches. He also prepared wetland management plans.

As the market for environmental assessment work grew, he led Environmental Impact Assessments (EIAs), in particular for coastal resort developments and large-scale industrial developments located on the coast; and Environmental Management Plans (EMPs), in particular for wetlands, estuaries and coastal developments. He has also been involved in researching and applying higher-level approaches to environmental assessment and management, such as Strategic Environmental Assessment (SEA). In 1998-1999, he coordinated the SEA research programme within the CSIR, which led to him being a lead author of the Guideline Document for SEA in South Africa, published by CSIR and national Department of Environmental Affairs (DEA) in February 2000.

In 1999 and 2000, he was the project manager for the legal, institutional, policy, financial and socio-economic component of the Cape Action Plan for the Environment ("CAPE"), a large-scale multi-disciplinary study to ensure the sustainable conservation of the Cape Floral Kingdom. This was funded by the Global Environmental Fund (GEF) and prepared for WWF-South Africa. The study required extensive stakeholder interaction, in particular with government institutions, leading to the development of a Strategy and Action Plan for regional conservation.

In July 2003, he was certified as an Environmental Assessment Practitioner by the Interim Certification Board for Environmental Assessment Practitioners of South

Africa.

He has authored several guidelines for government. In 2004, he was lead author of the *Overview of IEM* document in the updated Integrated Environmental Management (IEM) Information Series published by national Department of Environmental Affairs and Tourism (DEAT). In 2005, he was part of the CSIR team that prepared the series entitled *Guidelines for involving specialists in EIA processes* for the Western Cape Department of Environmental Affairs and Development Planning (DEADP); and he authored the *Guideline for Environmental Management Plans* published by Western Cape government in 2005. In 2006-2007, he worked closely with the (then) Dept of Minerals and Energy (DME) of South Africa to prepare a Guideline for Scoping, Environmental Impact Assessment and Environmental Management Plans for mining in South Africa.

Over the past 20 years has been closely involved with several environmental studies for industrial and port-related projects in Coega Industrial Development Zone (IDZ), near Port Elizabeth. This included the SEA for the establishment of the Coega IDZ in 1996/7, an EIA and EMP for a proposed aluminium smelter in 2002/3, and assistance with environmental permit applications for air, water and waste. At the Coega IDZ and port, he has also conducted environmental assessments for port development, LNG storage and a combined cycle gas turbine power plant, manganese export, rail development, marine pipelines, and wind energy projects.

Since 2009, he has undertaken numerous EIAs for the renewable energy sector, in particular for wind and solar photovoltaic energy projects. In these EIAs, he has been project leader and integrated the specialist findings from a range of specialist disciplines.

He is currently project leader on two Strategic Environmental Assessments (SEAs) that are being undertaken for national DEA. These SEAs are to support the implementation of the Strategic Integrated Projects (SIPs) that are being promoted by the Presidential Infrastructure Coordinating Committee (PICC). The SEA for Wind and Solar Photovoltaic Energy for South Africa is being conducted over 2013-2014, and the SEA for electricity grid infrastructure commenced January 2014.

Since 2009, Paul has been the manager of the Environmental Management Services (EMS) group within CSIR. This group currently consists of approximately 20 environmental assessment practitioners and a group assistant, with offices in Stellenbosch and Durban. EMS focuses on conducting complex environmental studies in challenging environments, such as remote and data poor regions in Africa (e.g. Cameroon, Gabon, Angola, Namibia and Ethiopia). We also specialise in environmental studies for emerging and innovative technologies, drawing on research and applied scientific expertise within CSIR. Our role is to assist in ensuring the sustainability of projects in terms of environmental and social criteria, by providing a range of environmental services that extend across the project lifecycle, from the pre-feasibility stage through to feasibility, commissioning, operations and closure. We provide this service to government, international agencies, private sector and non-government organisations.

EMPLOYMENT TRACK RECORD

The following table presents a sample of the projects that Paul Lochner has been involved in to this date:

Completion Date	Project description	Role	Client
In progress	**SEA for Aquaculture** Development in South Africa (marine and freshwater)	Project leader	DEA and DAFF
In progress	**SEA for the Square Kilometre Array** radio-telescope in the Karoo, South Africa	Project leader	DEA and DST
2015-2017	**SEA for Shale Gas Development** in South Africa	Project co-leader	Dept of Environmental Affairs (DEA), DMR, DOE, DST, DWS
2015-2016	SEA for the development of **Electrical Grid Infrastructure** for South Africa	Project leader	DEA
2016-2017	EIA for the 75 MW x 12 **solar photovoltaic** energy projects near Dealesville, Free State	Project Leader	Mainstream Renewable Power SA
2014-2015	SEA of **planning** for the far south Cape Peninsula	Project Leader	City of Cape Town
2013-2015	EIA for the Ishwati Emoyeni 140 MW **wind energy project** and supporting electrical infrastructure near Murraysburg, Western Cape	Project Leader	Windlab
2013-2015	EIA for the Saldanha marine outfall **pipeline**	Project Leader	Frontier Saldanha Utilities
2012-2015	SEA for identification of **renewable energy zones** for wind and solar PV projects in South Africa	Project leader	DEA
2012-2013	**Environmental Screening Study for a desalination plant** for the City of Cape Town	Project leader	City of Cape Town & WorleyParsons
2012-2013	EIA for **LNG Import** to the Mossel Bay Gas-to-Liquid refinery (stopped end of Scoping)	Project leader	PetroSA
2012-2013	EIA for the **desalination plant** for the Saldanha area	Project leader	West Coast District Municipality & WorleyParsons

Completion Date	Project description	Role	Client
2012-2013	EIA for the **manganese export terminal** at the Port of Ngqura and Coega IDZ	Project leader	Transnet
2011 - 2012	EIA for the **100 MW solar photovoltaic** project proposed by Mainstream Renewable Power at Blocuso, near Keimoes in the Northern Cape	Project leader	Mainstream Renewable Power
2011 – 2012	EIA for the **100 MW solar photovoltaic** project proposed by Mainstream Renewable Power at Roode Kop Farm, near Douglas, in the Northern Cape	Project leader	Mainstream Renewable Power
2011 – 2012	EIA for the 75 MW **solar photovoltaic project** proposed by Solaire Direct at **GlenThorne**, near Bloemfontein in the Free State	Project leader	Solaire Direct
2011 – 2012	EIA for the 75 MW **solar photovoltaic project** proposed by SolaireDirect at **Valleydora**, near Springfontein in the Free State	Project leader	Solaire Direct
2010-2011	More than 10 Basic Assessments (BAs) for **solar photovoltaic projects** in the western cape, Northern Cape, Eastern Cape and Free State	Project leader	Various clients including Dutch, German, French and South African companies
2010/2011	**EIA for the Langerfontein** wind project near Darling, Western Cape.	Project leader	Mr Herman Oelsner, Khwe Khoa
2010/2011	**EIA for a 100 MW wind project at Zuurbron and a 50 MW wind project Broadlands** in the Eastern Cape	Project leader	WindCurrent SA (German-based company)
2010/2011	**EIA for the proposed 143 MW Biotherm wind energy project near Swellendam**, Western Cape, South Africa	Project leader	Biotherm South Africa (Pty) Ltd
2010/2011	**EIA for the proposed InnoWind wind energy projects near Swellendam, Heidelberg, Albertinia and Mossel Bay (totalling approx 210 MW),** Western Cape, South Africa	Project leader	InnoWind South Africa (Pty) Ltd
2009/2010	**EIA for the proposed Electrawinds wind energy facility**	Project leader	Electrawinds N.V.

Completion Date	Project description	Role	Client
	of 45-75 MW capacity in the Coega IDZ, Eastern Cape		(Belgium)
2009/2010	**EIA for proposed 180 MW Jeffreys Bay wind energy project,** Eastern Cape	Project Leader and co-author	Mainstream Renewable Power South Africa
2009/2010	**Basic Assessment for the national wind Atlas for South Africa**	Project leader	SANERI and SA Wind Energy Programme, Dept of Energy
2009/2010	**EIA for the proposed Gecko soda plant,** Otjivalunda and Arandis, Namibia (cancelled)	Project leader	Gecko, Namibia
2009-2010	**EIA for the proposed desalination plant** at Swakopmund, Namibia	Project leader	NamWater, Namibia
2009	**EMP for the Operational Phase of the Berg River Dam**, Franschoek, South Africa	Project leader and report co-author	TCTA, South Africa
2009/2010 *(on hold)*	**EIA for the proposed crude oil refinery** at Coega, South Africa	Project leader and lead author	PetroSA, South Africa
2008	**Environmental Risk Review** for proposed LNG/CNG import to Mossel Bay, South Africa	Project leader and lead author	PetroSA, South Africa
2008	**Review of the Business Plan** for catchment management for the Berg Water Dam Project, Franschhoek, South Africa	Project reviewer and co-author	TCTA, South Africa
2007 – 2010	**EIA for proposed Jacobsbaai Tortoise Reserve eco-development**, Saldanha, Western Cape	Project Leader and co-author	Jacobsbaai Tortoise Reserve (Pty) Ltd
2007 – 2010	**Independent reviewer** for the EIA proposed Amanzi lifestyle development, Port Elizabeth	Independent reviewer appointed to advise EAP	Public Process Consultants and Pam Golding
2007 – 2008	**EIA for proposed 18 MW Kouga wind energy project,** Eastern Cape	Project Leader and co-author	Genesis Eco-Energy (Approved by DEDEA in March 2009)
2007	**Review of EIA for the proposed Hanglip Eco-Development**, Plettenberg Bay, Western Cape	Co-author of review of EIA, undertaken on behalf of DEADP	Dept of Environmental Affairs & Development Planning, Western Cape
2006-2007	**Scoping phase for the EIA for the proposed Coega LNG-to-Power Project** at the Port of Ngqura,	Project Leader and co-author	Eskom and iGas

Completion Date	Project description	Role	Client
	Coega IDZ		
2006-2007	**Guideline** for Scoping, Environmental Impact Assessment and Environmental Management Plans for mining in South Africa	Project leader and co-author	Dept of Minerals and Energy (DME), South Africa
2006	**Environmental Impact Assessment** (**EIA)** for the extension of the Port of Ngqura, Eastern Cape	Project Leader and co-author	Transnet
2006	**Integrating Sustainability Into Strategy: Handbook** (Version 1)	Project Leader and co-author	CSIR (STEP research report)
2005	**Technology Review** for the proposed aluminium smelter at Coega, South Africa	Project Leader and lead author	Alcan, Canada
2005	**Environmental and Social Impact Assessment (ESIA) report** for the proposed alumina refinery near Sosnogorsk, Komi Republic, Russia	Project manager and co-author	Komi Aluminium, Russia, IFC, EBRD
2005	**Guideline for Environmental Management Plans (EMPs)** for the Western Cape province, including conducting a training course for provincial government	Author	Dept of Environmental Affairs & Development Planning, Western Cape
2005	**Guideline for the review of specialist studies** undertaken as part of environmental assessments	Member of Steering Committee and project facilitator	Dept of Environmental Affairs & Development Planning, Western Cape
2004	**Review of Strategic Management Plan** for Table Mountain National Park (2001-2004)	Reviewer and co-author	South African National Parks
2004	**Strategic Needs Assessment Process** for mainstreaming sustainable development into business operations	Researcher and co-author	CSIR (internal research)
2004	**Environmental Monitoring Committees** booklet in the IEM Information Series for DEAT	Contributing author	Department of Environmental Affairs and Tourism (DEAT)
2004	**Overview of Integrated Environmental Management** (IEM) booklet in the IEM Information Series	Lead author and researcher	DEAT

Completion Date	Project description	Role	Client
2003	**Environmental Screening Study** for gas power station, South Africa	Project Manager and lead author	Eskom, iGas and Shell
2003	**Environmental Management Programme** (EMP) Framework for the proposed Coega Aluminium Smelter; and assistance with preparing permit and licence applications	Project Manager and lead author	Pechiney, France
2003	**Environmental Management Plan** for the Operational Phase of the wetlands and canals at Century City, Cape Town	Project leader and lead author	Century City Property Owners' Association
2002	**Environmental Impact Assessment** for the proposed Pechiney aluminium smelter at Coega, South Africa	Project Manager and lead author	Pechiney, France
2002 - 2003	**Research project:** Ecological impact of large-scale groundwater abstraction on the Table Mountain Group aquifer	Project Manager	Water Research Commission
2002	**Environmental Management Plan** for the Eskom Wind Energy Demonstration Facility in the Western Cape	Co-author	Eskom
2001-2002	**Environmental Impact Assessment** for the Eskom Wind Energy Demonstration Facility in the Western Cape	Quality control & co-author	Eskom
2001	**Environmental Due Diligence** study of four strategic oil storage facilities in South Africa	Project manager and co-author	SFF Association
2000	**Cape Action Plan for the Environment**: a biodiversity Strategy and Action Plan for the Cape Floral Kingdom - legal, institutional, policy, financial and socio-economic component	Project manager and contributing writer	World Wide Fund for Nature (WWF): South Africa
1999	**Environmental Management Plan** for the establishment phase of the wetlands and canals at Century City, Cape Town	Project manager and lead author	Monex Development Company
1999	**Environmental Management Programme** for the Thesen Islands development, Knysna	Process design and Co-author	Chris Mulder Associates Inc; Thesen and Co.

Completion Date	Project description	Role	Client
1999	**Management Plan** for the coastal zone between the Eerste and Lourens River, False Bay, South Africa	Project manager and lead author	Heartland Properties and Somchem (a Division of Denel)
1998	**Environmental Assessment** of the Mozal Matola Terminal Development proposed for the Port of Matola, Maputo, Mozambique	Project manager and author.	*SNC-Lavalin-EMS*
1998	**Strategic Environmental Assessment (SEA)** for the Somchem industrial complex at Krantzkop, South Africa	Project manager and co-author	Somchem, a Division of Denel
1997	**Strategic Environmental Assessment (SEA)** for the proposed Industrial Development Zone and Harbour at Coega, Port Elizabeth, South Africa	SEA project manager and report writer	Coega IDZ Initiative Section 21 Company
1996	**Environmental Impact Assessment** of Development Scenarios for Thesen Island, Knysna, South Africa	Project manager and report writer	Thesen and Co.
1996	**Environmental Impact Assessment** of the Management Options for the Blouvlei wetlands, Cape Town	Project manager and report writer	Ilco Homes Ltd (now Monex Ltd)
1995	**Environmental Impact Assessment** for the Saldanha Steel Project, South Africa	Report writing and management of specialist studies	Saldanha Steel Project
1994	**Environmental Impact Assessment** for the upgrading of resort facilities on Frégate Island, Seychelles	Member of the project management team, co-author, process facilitator	Schneid Israelite and Partners
1994	**Environmental Impact Assessment** for exploration drilling in offshore Area 2815, Namibia	Project manager and co-author	Chevron Overseas (Namibia) Limited
1994	**Management Plan** for the Rietvlei Wetland Reserve, Cape Town	Project manager and lead author	Southern African Nature Foundation (now WWF-SA)
1993	**Beach management plan** for Stilbaai beachfront and dunes, South Africa	Project manager and lead author	Stilbaai Municipality
1993	**Beach and dune management plan for Sedgefield** for the beach	Project manager and lead author	Nel and De Kock Planners, George

Completion Date	Project description	Role	Client
	east of the mouth of the Swartvlei estuary		
1993	**Coastal Stability analysis and beach management plan** for the Table View coastline north of Blaauwberg Road, Cape Town	Project manager and lead author	Milnerton Municipality

EMPLOYMENT RECORD

- **1992 to present** Involved in coastal engineering studies; and various forms of environmental assessment and management studies. Council for Scientific and Industrial Research – Environmental Management Services (EMS) - Stellenbosch

QUALIFICATIONS/EDUCATION

- M. Phil. Environmental Science (University of Cape Town)
- B.Sc. Civil Engineering (awarded with Honours) (University of Cape Town)

LANGUAGE CAPABILITY

LANGUAGES	***Speaking***	***Reading***	***Writing***
English	Excellent	Excellent	Excellent
Afrikaans	Moderate	Moderate	Moderate

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Curriculum Vitae of Surina Laurie – Project Leader (*Pr. Sci. Nat.*)

Name of firm	CSIR
Name of staff	Surina Laurie
Profession	Environmental Assessment Practitioner
Position in firm	Project Manager/Senior Environmental Assessment Practitioner
Years' experience	6 years
Nationality	South African

Biographical Sketch

Surina has more than 6 years' experience as an Environmental Assessment Practitioner (EAP). She completed both her BSc in Conservation Ecology and MPhil in Environmental Management (part-time) at the University of Stellenbosch. With her honours project, she worked closely with the Endangered Wildlife Trust Riverine Rabbit Working Group and was responsible for determining the conservation opportunity for the Riverine Rabbit in the Karoo. With this project, she gained valuable experience in how to interact and manage stakeholders in such a way that a project's objectives and conservation goals are met without the stakeholders not being included in the decision-making process. The management of stakeholders and the ability to incorporate and/or adequately reflect their input are considered to be an essential component of an Environmental Impact Assessment (EIA) process.

With her Masters' thesis she researched and addressed why there is a need to undertake a Cost Benefit Analysis (CBA) as part of any EIA. The need for a CBA stems from the fact that losing environmental services will have an economic impact on a regional/national level in the long term but this is usually not considered during an EIA process. A CBA will look at both the economic benefits (profit) from a project and the economic losses because of loss of ecosystem services or rehabilitation costs. By including a CBA in an EIA, both the economic and environmental financial implications (not just the environmental significance of an impact) of a project will be considered by the decision making authority prior to the issuing of Environmental Authorisations or permits. To further expand her knowledge in this field, she has recently obtained a Postgraduate Certificate in Environmental Economics from the University of London.

She has experience as a project manager and project leader for Basic Assessments and Scoping and Environmental Impact Assessments for various sectors, including renewable energy, industry and tourism.

EMPLOYMENT TRACK RECORD

The following table presents a sample of the projects that Surina Laurie has been involved in to this date:

Completion Date	Project description	Role	Client
2016-present	Strategic Environmental Assessment for the effective and efficient roll-out of large scale wind and solar energy projects in South Africa (Phase 2)	Project Manager	Department of Environmental Affairs
2016	Environmental Screening Study for the potential development of two Solar PV projects in the North West Province	Project Manager	Veroniva
2016	Basic Assessment process for the proposed construction of supporting electrical infrastructure to the Victoria West Wind Energy Facility, Victoria West, Northern Cape	Project Manager	South Africa Mainstream Renewable Power Developments (Pty) Ltd
2016	Amendment application to the Victoria West renewable energy facility in order to add additional wind turbines to site, Victoria West, Northern Cape	Project Manager	South Africa Mainstream Renewable Power Developments (Pty) Ltd
2015 - 2016	Scoping and Environmental Impact Assessment for 3 x 75 MW Solar PV facilities and associated electrical infrastructure near Kenhardt, Northern Cape a	Project Leader	Mulilo Renewable Project Development (Pty) Ltd
2015 - 2016	Scoping and Environmental Impact Assessment for 5 x 100 MW Solar PV facilities near Dealesville, Free State.	Project Leader	29Solar Capital
2015	Review of the validity of the appeals received against the EA issued for the construction of an 11 MW Hydro Power Station, Groblershoop, Northern Cape Province	Project Manager	Department of Environmental Affairs
2014 -2016	Integrated Scoping and EIA process for the development of twelve (12) Photovoltaic (PV) or Concentrated Photovoltaic (CPV) Solar Facilities with a generating capacity of 75 MW/100 MW each, near Dealesville, Free State.	Project Manager	South Africa Mainstream Renewable Power Developments (Pty) Ltd
2014 - 2015	Integrated Scoping and EIA process for the construction of three Photovoltaic (PV) or Concentrated Photovoltaic (CPV)	Project Manager	Mulilo Renewable Project Development (Pty) Ltd

Completion Date	Project description	Role	Client
	Solar Facilities with a generating capacity of 75 MW each on the farms remaining extent of Portion 3 of the Farm Gemsbok Bult 120 and Boven Rugzeer remaining extent of 169, located 30 km north-east of Kenhardt. Two of the projects will be located on the farm remaining extent of Portion 3 of the Farm Gemsbok Bult 120 and one on Boven Rugzeer remaining extent 169.		
2013-2014	Basic Assessment for the construction of three additional petroleum storage tanks at the Cape Town Harbour.	Environmental Consultant	FFS Refiners (Pty) Ltd
2013-2014	Scoping and EIA for the construction of a Sewage Package Plant on Robben Island.	Environmental Consultant	Department of Public Works
2013	Development of an EMPr for the undertaking of maintenance work on the Stilbaai Fishing Harbour's Slipway located in Stilbaai, Western Cape, South Africa. In order to be compliant to the requirements of the National Environmental Management Act (Act 107 of 1998) and Environmental Impact Assessment (EIA) Regulations, a Maintenance Management Plan (MMP) needed to be developed to manage the environmental impacts associated with maintenance work that is scheduled to be undertaken on the Stilbaai Fishing Harbour's Slipway as well as any future on-going maintenance requirements.	Environmental Consultant	Department of Public Works
2012-2014	Waste Management License for the proposed storage of Ferrous HMS 1+2, Shredded Ferrous and Bales located at the K/L Berth at Duncan Road, Port of Cape Town	Environmental Consultant	The New Reclamation Group (Pty) Ltd
2012-2014	Scoping and EIA for the construction a biodiesel refinery in the Coega Industrial Development Zone (IDZ). The proposed project entails the import of used vegetable oil from the USA and converting it through	Environmental Consultant	FIS Biofuels (Ltd)

Completion Date	Project description	Role	Client
	various processes to biodiesel which will be exported to Europe. The proposed project requires an Air Emissions License, a Waste Management License and Environmental Authorisation.		
2013-2013	Basic Assessment for the proposed redevelopment of Berths B, C and D in Duncan Dock at the Port of Cape Town.	Assistant Environmental Consultant	FPT (Pty) Ltd
2011- 2012	Development of an EMPr for the Eerstelingsfontein Opencast Project (EOP).	Assistant Environmental Consultant	Exxaro Resources Limited
2011-2014	Basic Assessment for the proposed reinstatement of the Blue Stone Quarry located on Robben Island.	Assistant Environmental Consultant	Department of Public Works
2011	Scoping and EIA for the proposed upgrade to the Struisbaai WWTW.	Assistant Environmental Consultant	Cape Agulhas Municipality
2011	Basic Assessment for the construction of a cellular mast.	Environmental Consultant	MTN (Pty) Ltd
2010-2011	Basic Assessment for the construction of a Heritage Centre.	Environmental Consultant	Waenhuiskrans Arniston Community Development Trust
2010-2011	Scoping and EIA for the rezoning of the area from open space to residential, the construction of six residential units and the upgrading of the existing Waste Water Treatment Plant.	Environmental Consultant	Private developer

EMPLOYMENT RECORD

- **2014 to present** Project Manager- Environmental Assessment Practitioner. Council for Scientific and Industrial Research – Environmental Management Services (EMS) - Stellenbosch
- **2011 to 2014** Environmental Consultant. WSP Environmental (Pty) Ltd - Gauteng
- **2010 to 2011** Junior Environmental Consultant - Somerset West

QUALIFICATIONS/EDUCATION

- Postgraduate Certificate Environmental Economics (University of London)
- Project Management Course (University of Cape Town Graduate School of Business)
- MPhil Environmental Management (University of Stellenbosch)
- BSc Conservation Ecology (University of Stellenbosch)

LANGUAGE CAPABILITY

LANGUAGES	***Speaking***	***Reading***	***Writing***
English	Excellent	Excellent	Excellent

Afrikaans	Excellent	Excellent	Excellent

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Curriculum Vitae of Kelly Stroebel – Project Manager (*Cand. Sci. Nat.)*

Name of firm	CSIR
Name of staff	Kelly Stroebel
Profession	Environmental Assessment Practitioner
Position in firm	Environmental Assessment Practitioner
Years' experience	4 years
Nationality	South African

Biographical Sketch

Kelly holds a Bachelor of Science with Honours in Environmental Science from Rhodes University in Grahamstown and is currently pursuing a Masters at the University of Stellenbosch. Her undergraduate degree was a Bachelor of Science with majors in Environmental Science and Zoology. She is currently working as an environmental assessment practitioner at the Council for Scientific and Industrial Research (CSIR). Kelly has been the Project Manager of several EIA's in South Africa and several Basic Assessments for the Special Needs and Skills Development Programme. She has assisted in the SIP projects including the National Wind & Solar Strategic Environmental Assessment (SEA) and Electricity Grid Infrastructure SEA as SEA which were commissioned by the national Department of Environmental Affairs. On a personal level, Kelly enjoys the outdoors, traveling and SCUBA diving and is passionate about the field of environmental science and management.

EMPLOYMENT TRACK RECORD

The following table presents a sample of the projects that Kelly Stroebel has been involved in to this date:

Completion Date	Project description	Role	Client
In progress	**EIA's in the South African energy sector**	Project Manager/EAP	Private energy companies and organs of state
In progress	**Special Needs and Skills Development Programme (DEA-CSIR)**	Project Manager conducting Environmental services such as basic Assessments and Environmental Screening Studies.	Various SMME's and Community Trusts
2015	**Strategic Environmental Assessment (SEA)** for Electricity	Project member-stakeholder engagement and project support.	National Department of Environmental

Completion Date	Project description	Role	Client
	Grid Infrastructure		Affairs
2015	**EIA for two proposed Desalination plants on the KZN coast.**	Project member- Public Participation Process, stakeholder engagement and project support.	Umgeni Water
August 2014	**National Strategy for Sustainable Development Review (NSSD1)**	Project member- research and report development.	National Department of Environmental Affairs
2013-2014	**Strategic Environmental Assessment (SEA)** for roll out of photovoltaic solar and wind energy in South Africa.	Project member- Stakeholder engagement and project support	National Department of Environmental Affairs

EMPLOYMENT RECORD

- **2015 to present** Environmental Scientist and Assessment Practitioner. Council for Scientific and Industrial Research – Consulting and Analytical Services (CAS) - Stellenbosch
- **2014** Environmental Scientist and Assessment Practitioner (Intern). Council for Scientific and Industrial Research – Consulting and Analytical Services (CAS) - Stellenbosch
- **2013** Environmental Education Counselor - Fernwood Cove Summer Camp, USA.
- **2012** Graduate Assistant: Rhodes University Department of Environmental Science.
- **2011** Vacation Internship: Environmental Management Department of Mittal Steel, Newcastle.
- **2011** Vacation Internship: Northern Kwa-Zulu Natal branch of WWF.

QUALIFICATIONS/EDUCATION

- BSc Hons. Environmental Science (Rhodes University, Grahamstown, South Africa)
    - Honours modules including Environmental Impact Assessment, Statistics, Climate Change Adaptation, Urban Ecology and Environmental Water Quality.
    - Honours thesis: "Water use and conservation by households of different economic status in King Willliam's Town"
- Bachelor of Science with Distinction (Rhodes University, Grahamstown, South Africa)
    - Undergraduate courses including Environmental Science, Zoology, Ichthyology, Chemistry, Earth Science, Botany and Computer Science.
- IEB Matric Certificate, 5 Distinctions (St Dominic's Academy, Newcastle)

TRAINING, CONFERENCES AND PROFFESIONAL REGISTRATIONS

- Member of the Conference Organizing Committee (COC) for the IAIAsa Annual Conference 2017
- Project Management Practices and Principles with MS projects with the University of Pretoria: Distinction obtained (2016)
- Introduction to Earth Observation using ENVI with the University of Stellenbosch (2016)
- Public Participation Course with IAP2 (2016)
- Conflict Management Accredited through Conflict Dynamics (2015)
- Media and Science Training Accreditation through Jive Media Africa (2015)
- IAIA WC Workshop for Integrating Climate Change into EIA practice (2015)
- Presented on the DEA-CSIR "Special Needs and Skills Development Programme" at the 2014 & 2015 Annual IAIA (International Association for Impact Assessment) South Africa Conference.

- Environmental Impact Assessment Training Course accreditation through Coastal and Environmental Services, Grahamstown (2012)
- DEA&DP Training on the EIA Regulations (2014)
- Registered as a Candidate Natural Scientist with the South African Council for Natural Scientific Professions (SACNASP) (Reg #: 100151/14)
- Member of the South African Affiliate of the International Association for Impact Assessment (Membership no: 3588)

LANGUAGE CAPABILITY

LANGUAGES	***Speaking***	***Reading***	***Writing***
English	Excellent	Excellent	Excellent
Afrikaans	Moderate	Moderate	Moderate

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Curriculum Vitae of Babalwa Mqokeli – Project Manager (*Cand. Sci. Nat.)*

Name of firm	CSIR
Name of staff	Babalwa Mqokeli
Profession	Environmental Assessment Practitioner
Position in firm	Junior Environmental Assessment Practitioner
Years' experience	2 years
Nationality	South African

Biographical Sketch

Babalwa holds a Masters degree in Ecological Science from the University of KwaZulu-Natal. She has 2 years of experience in the environmental management field, as an ecological scientist. She is currently working as an environmental assessment practitioner at the Council for Scientific and Industrial Research (CSIR). Babalwa has been a Project Manager for a variety of Basic Assessment projects in the mining and agricultural sector, under the DEA-CSIR Special Needs and Skills Development Programme. She is currently assisting in a solar energy EIA, as a Project Officer. Babalwa is passionate about environmental management and planning.

EMPLOYMENT TRACK RECORD

The following table presents a sample of the projects that Babalwa Mqokeli has been involved in to this date:

Completion Date	Project description	Role	Client
In progress	**EIA's in the South African energy sector**	Project member	Private energy companies and organs of state
In progress	**Special Needs and Skills Development Programme (DEA-CSIR)**	Project Manager conducting Environmental services such as basic Assessments and Environmental Screening Studies for agricultural and mining projects.	Various SMME's and Community Trusts
In progress	**Strategic Environmental Assessment (SEA)** for Renewable Energy Development Zones	Project member-stakeholder engagement and project support.	National Department of Environmental Affairs
In progress	**Permit Application Process for *Boscia albitrunca* (Shepherd's Tree)**	Project member	North West Department of Economic and Enterprise Development

EMPLOYMENT RECORD

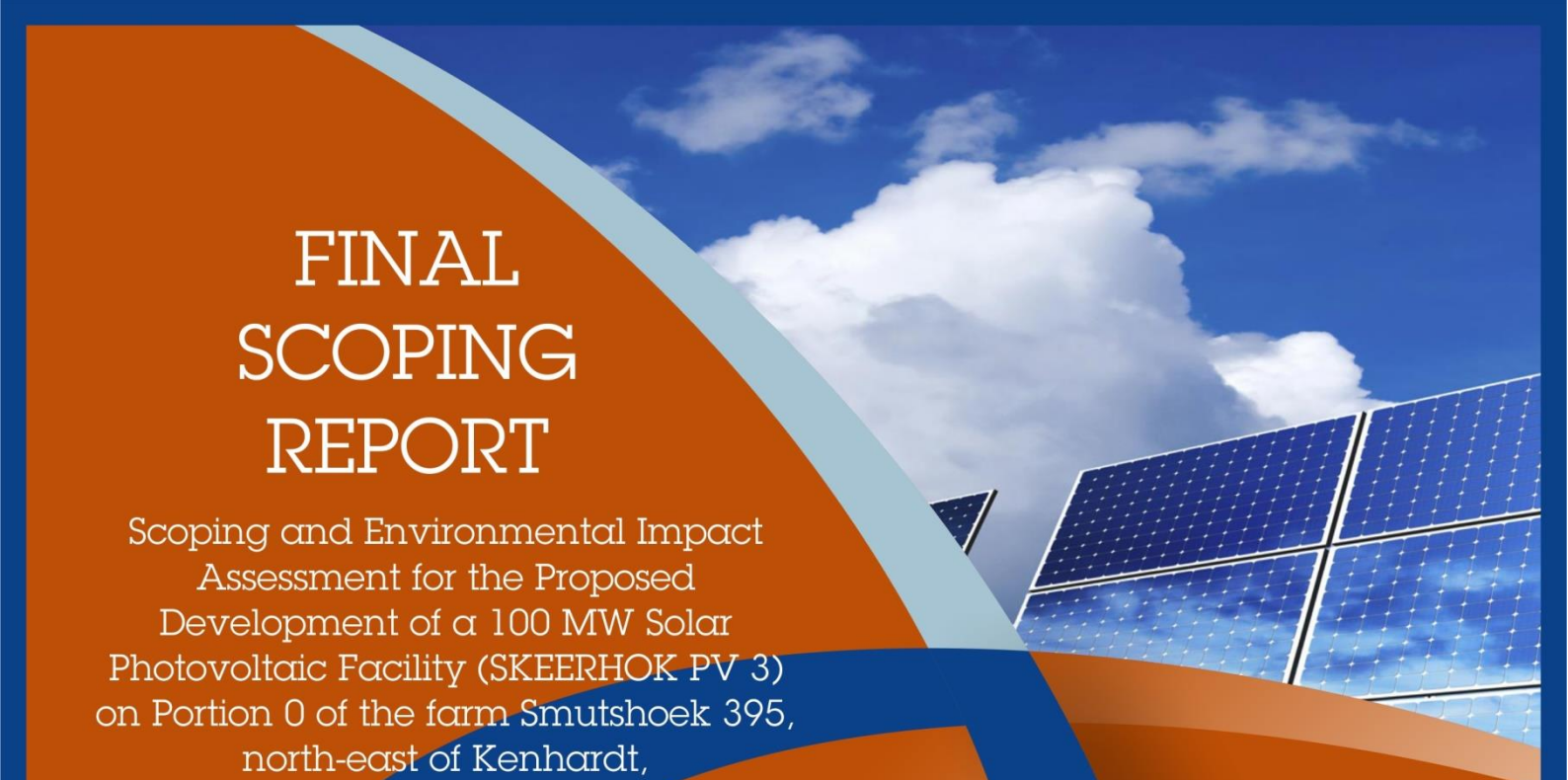
- **2017 to present** Environmental Assessment Practitioner. Council for Scientific and Industrial Research – Environmental Management Services (EMS) Unit - Stellenbosch
- **2015** Environmental Assessment Practitioner (Intern). Council for Scientific and Industrial Research – Environmental Management Services (EMS) Unit - Stellenbosch
- **2015** Biology 101 Teacher Assistant. University of KwaZulu-Natal - Pietermaritzburg
- **2013** Conservation Research Intern. Nature's Valley Trust (WWF-SA Environmental Leaders Programme) - Plettenberg Bay.

QUALIFICATIONS/EDUCATION

- MSc Ecological Science (University of KwaZulu-Natal, Pietermaritzburg, South Africa)
- BSc Hons. Ecological Science (University of KwaZulu-Natal, Pietermaritzburg, South Africa)
- BSc Biological Science (University of Zululand, Empangeni, South Africa)
    - Undergraduate courses including Integrated Environmental Management, Aquatic Conservation & Management, Animal Ecology (Terrestrial, Freshwater & Marine), Risk Assessment & Ecotoxicology, Environmental Law & Waste Management, Introduction to Surface Water Hydrology, Botany.
- Matric Certificate (Durban Girls' Secondary School, Durban)

LANGUAGE CAPABILITY

LANGUAGES	***Speaking***	***Reading***	***Writing***
English	Excellent	Excellent	Excellent
IsiXhosa	Excellent	Excellent	Excellent
IsiZulu	Excellent	Excellent	Excellent
Afrikaans	Poor	Moderate	Moderate



FINAL SCOPING REPORT

Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

APPENDIX B:

Declaration of the Environmental Assessment Practitioner

APPENDIX 9
DECLARATION OF THE EAP

I, Kelly Strcebel declare that –

General declaration:

- I act as the independent environmental practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the Regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- I will keep a register of all interested and affected parties that participated in a public participation process; and
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- all the particulars furnished by me in this form are true and correct;
- will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence in terms of regulation 48 of the Regulations and is punishable in terms of section 24F of the Act.

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Disclosure of Vested Interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;

15 • ~~I have a vested interest in the proposed activity proceeding, such vested interest being:~~

_____

_____

_____

_____

Signature of the environmental assessment practitioner:

CSIR

Name of company:

15/09/2017

Date:

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APPENDIX 9
9.2 UNDERTAKING UNDER OATH/ AFFIRMATION

I, Kelly Struben, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

Signature of the environmental assessment practitioner

CSIR
Name of company

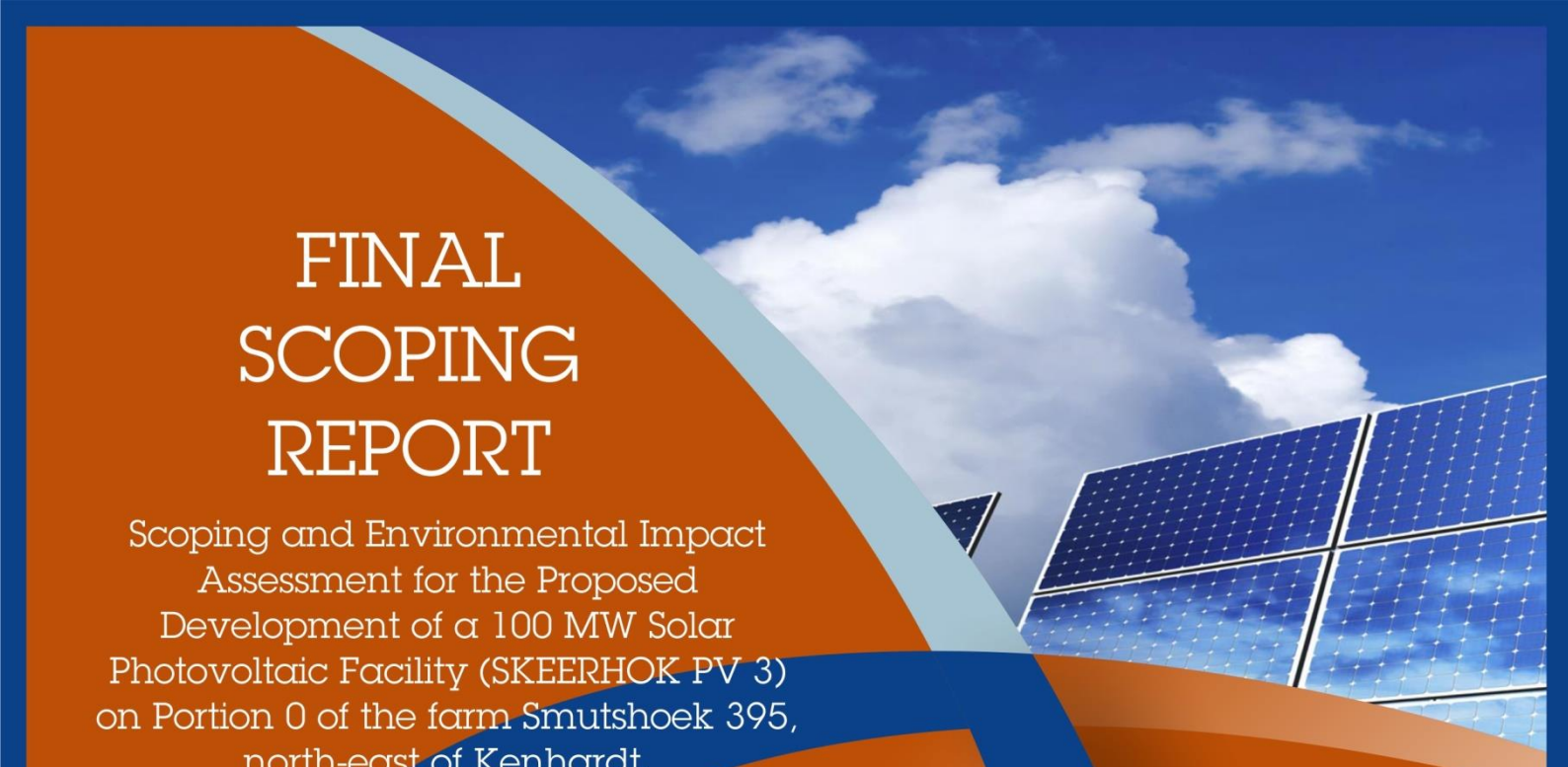
15/09/2017
Date

BRANCH MANAGER
2017 -09- 15
STELLENBOSCH
TAKBESTUURDER

Signature of the commissioner of oaths

15/09/2017
Date

35



FINAL SCOPING REPORT

Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

APPENDIX C:

Database of Interested and Affected Parties

Number	First Name	Surname	Company/ Organisation	Notice of Project Announcement and Release of Draft Scoping Reports	Email: Notice of Submission of Scoping Reports to DEA	Notice of Release of Draft EIA Reports and BA Report	Email: Notice of Submission of EIA Reports and BA Report to DEA	Notice of EA for BAs and EIAs
Organs of State								
1.	Mmatlala	Rabothatha	National DEA: Integrated Environmental Authorisations	✓				
2.	Muhammad	Essop	National DEA: Integrated Environmental Authorisations	✓				
3.	Wilma	Lutsch	National DEA: Biodiversity and Conservation	✓				
4.	Herman	Alberts	National DEA: Integrated Environmental Authorisations	✓				
5.	A	Yaphi	Provincial Department of Environment and Nature Conservation (DENC): Northern Cape	✓				
6.	M	Mathews	Provincial DENC: Northern Cape	✓				
7.	Samantha	De la Fontaine	Provincial DENC: Northern Cape	✓				
8.	Elsabe	Swart	Provincial DENC: Northern Cape	✓				
9.	Sibonelo	Mbanjwa	Provincial DENC: Northern Cape	✓				
10.	Luzane	Tools-Bernado	Provincial DENC: Northern Cape	✓				
11.	Eric	Ngxanga	ZF Mgcawu District Municipality - Municipal Manager	✓				
12.	Frikkie	Ruping	ZF Mgcawu District Municipality - Environmental Manager	✓				
13.	H.T	Scheepers	!Kheis Municipality - Municipal Manager	✓				
14.	Gloria	Matlakala	!Kheis Municipality	✓				
15.	JG	Lategan	Kai ! Garib Municipality - Municipal Manager	✓				

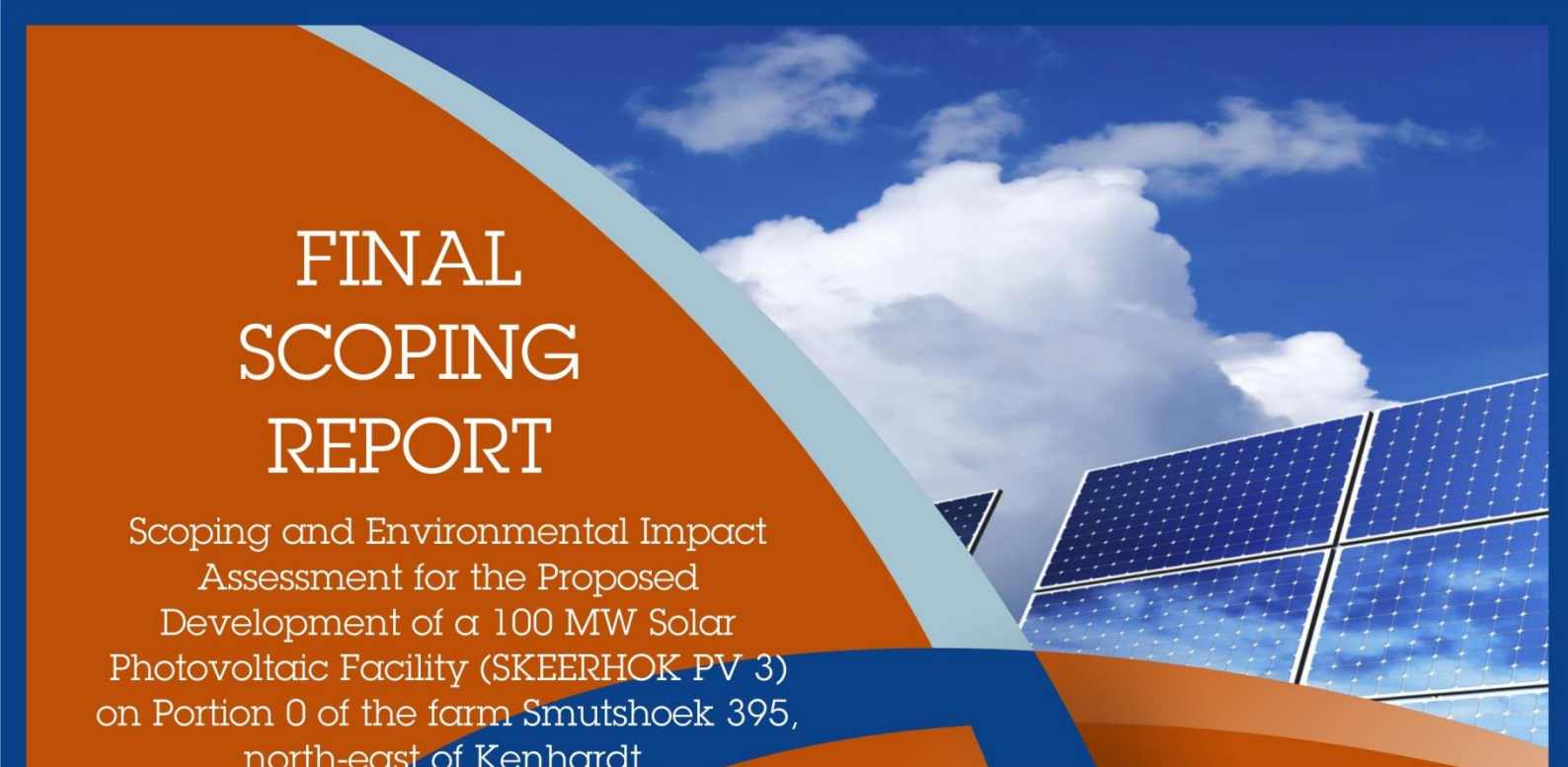
Number	First Name	Surname	Company/ Organisation	Notice of Project Announcement and Release of Draft Scoping Reports	Email: Notice of Submission of Scoping Reports to DEA	Notice of Release of Draft EIA Reports and BA Report	Email: Notice of Submission of EIA Reports and BA Report to DEA	Notice of EA for BAs and EIAs
16.	M.	Clarke	Kai ! Garib Municipality - Manager: Electromechanical Services	✓				
17.	Mashudu	Randwedzi	Department of Water and Sanitation	✓				
18.	Melinda	Mei	Department of Water and Sanitation	✓				
19.	Shaun	Cloete	Department of Water and Sanitation	✓				
20.	Chantèl	Schwartz	Department of Water and Sanitation	✓				
21.	Mandla	Ndzilili	Ministry of Environment and Nature Conservation	✓				
22.	Mashudu	Marubini	National Department of Agriculture, Forestry and Fisheries (DAFF)	✓				
23.	Thoko	Buthelezi	National DAFF - AgriLand Liaison office	✓				
24.	D	Nhlakad	National DAFF - AgriLand Liaison office	✓				
25.	Anneliza	Collett	National DAFF - AgriLand Liaison office	✓				
26.	H. J.	Buys	National DAFF (Land Use and Soil Management)	✓				
27.	Jacoline	Mans	Provincial DAFF	✓				
28.	Khuthala	D.	DAFF	✓				
29.	Ali	Diteme	Provincial Department of Agriculture, Land Reform & Rural Development	✓				
30.	Pieter	Buys	National Energy Regulator of South Africa	✓				
31.	IA	Bulane	Department of Public Works, Roads and Transport	✓				
32.	Denver	Van Heerden	Department of Public Works, Roads and Transport	✓				
33.	Rene	de kock	South African Roads Agency Limited - Northern Cape (Western Region)	✓				
34.	Nicole	Abrahams	South African Roads Agency Limited (Western Region)	✓				

Number	First Name	Surname	Company/ Organisation	Notice of Project Announcement and Release of Draft Scoping Reports	Email: Notice of Submission of Scoping Reports to DEA	Notice of Release of Draft EIA Reports and BA Report	Email: Notice of Submission of EIA Reports and BA Report to DEA	Notice of EA for BAs and EIAs
35.	M	Lepheane	Department of Labour	✓				
36.	A	Botes	Department of Social Development	✓				
37.	Riaan	Warie	Northern Cape Economic Development Agency	✓				
38.	Andrew	Timothy	Directorate Heritage, Department - Sports, Arts and Culture	✓				
39.	Lizell	Stroh	South African Civilian Aviation Authority	✓				
40.	John	Geeringh	ESKOM	✓				
41.	Kevin	Leask	ESKOM	✓				
42.	Justine	Wyngaardt	ESKOM (Western Operating Unit, Distribution)	✓				
43.	Lindi	Haarhoff	ESKOM (Nieuwehoop Substation)	✓				
44.	Sharon	Steyn	Northern Cape Chamber of Commerce and Industry	✓				
45.	P.J.J	van Rensburg	Agri Northern Cape	✓				
46.	H.	Myburgh	Agri Northern Cape	✓				
47.	Adrian	Tiplady	SKA SA	✓				
48.	Marina	Lourens	Transnet Freight Rail	✓				
49.	Gilbert	Nortier	Transnet Freight Rail	✓				
50.	Mayvyn	Bhana	Transnet	✓				
51.	Clive	Stephenson	Transnet	✓				
52.	Director		Department of Energy Northern Cape	✓				

Number	First Name	Surname	Company/ Organisation	Notice of Project Announcement and Release of Draft Scoping Reports	Email: Notice of Submission of Scoping Reports to DEA	Notice of Release of Draft EIA Reports and BA Report	Email: Notice of Submission of EIA Reports and BA Report to DEA	Notice of EA for BAs and EIAs
53.	Ragna	Redelstorff	South African Heritage Resources Agency[1]	✓				
54.	Natasha	Higgitt	South African Heritage Resources Agency	✓				
55.	Kgauta	Mokoena	Department of Mineral Resources	✓				
56.	Elliot	Sibeko	Department of Telecommunication & Postal Services	✓				
57.	Director		Department of Communications	✓				
58.	Chris	Coetzee	Southern African Large Telescope (SALT) Sutherland	✓				
59.	Raoul	Van den Berg	Southern African Large Telescope (SALT) Sutherland	✓				
Stakeholders (NGOs and Conservation Organisations)								
60.	Simon	Gear	Birdlife South Africa	✓				
61.	Janine	Goosen	Birdlife South Africa	✓				
62.	Lubabalo	Ntsolo	C.A.P.E. Co-ordination Unit: Northern Cape	✓				
63.	Freyni	du Toit	Grasslands Society of Southern Africa	✓				
64.			Endangered Wildlife Trust, Wildlife and Energy Programme	✓				
65.	Dr. Howard	Hendricks	South African National Parks - Snr GM: Policy & Governance Conservation Services Division	✓				
66.	Dr. Joh R	Henschel	SAEON Arid Lands Node	✓				
67.	Praneel	Ruplal	Independent Communications Authority of South Africa (ICASA)	✓				

[1] Note that submissions to the South African Heritage Resources Agency (SAHRA) have been made via the online SAHRIS. The details provided are those of the designated case officer assigned to the application.

Number	First Name	Surname	Company/ Organisation	Notice of Project Announcement and Release of Draft Scoping Reports	Email: Notice of Submission of Scoping Reports to DEA	Notice of Release of Draft EIA Reports and BA Report	Email: Notice of Submission of EIA Reports and BA Report to DEA	Notice of EA for BAs and EIAs
Landowner/Adjacent Landowners								
68.	P	Karsten	Landowner	✓				
69.	D	Strauss	Landowner	✓				
70.	H	Van Wyk	Landowner	✓				
Additional I&APs								
71.	Mitchell	Hodgson	Scatec Solar	✓				
72.	Claude	Bosman	Veroniva (PTY) Ltd - Renewable Energy	✓				
73.	Karen	Low	Mulilo Renewable Energy Developments	✓				



FINAL SCOPING REPORT

Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

APPENDIX D:

Copy of Newspaper Advertisements

Newspaper Advertisement – The Gemsbok

KENNISGEWING VAN OMGEWINGSIMPAKEVALUERINGPROSESSE VIR DIE ONTWIKKELING VAN DRIE FOTOVOLTAïSE SONKRAGAANLEGTE EN GEASSOSIEERDE ELEKTIESE INFRASTRUKTUUR, NOORD-OOS VAN KENHARDT IN DIE NOORD-KAAP

Kennis word hierdeur gegee in terme van die NEMA Omgewings Impak Asseserings (EIA) Regulasies onder sub-regulasie 41 (2) (a) gepromulgeer in Staatskoerant No. 40772 van 7 April 2017 van die Nasionale Wet op Omgewingsbestuur (Wet 107 van 1998, soos gewysig) (NEMA), dat juwi Renewable Energies' (Pty) Ltd (die Aansoeker) van voorneme is om drie fotovoltaïese (FV) sonkragaanlegte met 'n opwekkingsvermoë van 100 MW elk en elektriese infrastruktuur op te rig naby Kehardt in die Noord Kaap. Die elektirese komponent sal geassesseer word as deel van 'n aparte Basiese Bestekopname Proses. Die voorgestelde fasiliteite sal opgerig word op Gedeeltes 0 van Smutshoek Plaas 395 en Gedeelte 9 van Gemsbok Bult Plaas 120, geleë ongeveer 43 km noord oos van Kenhardt. Die voorgestelde kraglyne (132 kV kraglyn vir elke 100 MW sonkrag fasiliteit) sal aansluit by die Nieuwehoop Substasie.

In terme van die Nasionale Wet op Omgewingsbestuur (Wet 107 van 1998, soos gewysig) (NEMA) en die NEMA Omgewings Impak Asseserings (EIA) Regulasies gepromulgeer in Staatskoerant No. 40772 en Staatskennisgewing (GNR) 324 en 327 op 7 April, vereis die beoogde projekte dat Omvangsbepaling-en Omgewingsevaluering (OIE) prosesse onderneem moet word sowel as 'n aparte Basiese Bestekopname proses vir die kraglyne.

Die Wetenskaplike en Nywerheidsnavorsingsraad (WNNR) is deur juwi aangestel om die vereiste prosesse te onderneem.

U word hiermee genooi om as 'n belangstellende en/of geaffekteerde party te registreer **(teen nie later as 23 Oktober 2017 nie)**. Dit sal ons in staat stel om u op ons projek databasis by te voeg en ook sodat u enige kommentaar of kwelpunte aangaande die projek kan opper. Hierdie kommentaar sal by die Omvangsbepalingsverslag en Basiese Bestekopname verslag ingesluit word.

Vir verdere inligting en/of om as 'n belangstellende en geaffekteerde party te registreer, kontak:

Ms Kelly Stroebel (Omgewings Impak Asseserings Konsultant van WNNR (CSIR)

Posadres: Posbus 320, Stellenbosch, 7599 // **Tel**:(021) 888 2432//**Faks**:(021) 888 2693//

e-pos: kstroebel@csir.co.za

'Vrye onderrig, toegeruste onderwysers' hoeksteen van onderwys

GEMSBOK-UPINGTON: Vanjaar se vier van Wêreldonderwysersdag het "Vrye onderrig, toegeruste onderwysers" as tema, met die fokus op die institusionele outonomie en akademiese vryheid van onderwysers.

Die Verenigde Nasies vier die dag internasionaal op 5 Oktober elke jaar. In Suid-Afrika val dié datum egter in die skoolvakansie. Om seker te maak dat onderwysers wêreldwyd erkenning kry wat hulle verdien, vier die Federasie van Beheerliggaame van Suid-Afrikaanse Skole (FEDSAS) Wêreldonderwysersdag in Suid-Afrika jaarliks op die eerste Vrydag van die vierde kwartaal. Vanjaar val dié datum op 13 Oktober.

"Onderrig wat vry en toegeruste is, is die hoeksteen van 'n suksesvolle onderwysstelsel. Hoe meer handvatte ons aan het tot gehalte-onderrig, hoe beter bly 'n land se toekoms. Dus, wanneer kinders tot die stelsel toetree, moet hulle in die hande wees van onderwysers wat toegerus is vir die taak, met ander woorde onderwys en sosiaal goed opgelei is en vat hul werk dom binne 'n stelsel wat ontwerp is om hulle te steun," sê dr. Jaco Deacon, adjunkhoof van die Federasie van Beheerliggaame van Suid-Afrikaanse Skole (FEDSAS).

FEDSAS staan in die onderwysverlating om beheerliggaame te bemagtig om sodoende by te dra tot gehalte-onderrig. "Wanneer 'n skool goed bestuur word, is onderwysers vry om te fokus op onderrig en die klaskamer. Dit is dus 'n beheerliggaam se plig om toe te sien dat daar deur middel van goeie skoolbeheer en -bestuur 'n omgewing geskep word wat kinders en onderwysers steun in die leerproses. Gebrekkige skoolbestuur hou implikasies in vir die spesifieke skoolsfeer, die onmiddellike sisteemomgewing en gevolglik, nie net vir die toekoms van die leerders en die samelewing as geheel. Terselfdertyd is goeie skoolbestuur 'n belegging in die samelewing en in die land se toekoms."

Vry hand gaan hand-aan-hand met verantwoordelikheid. Deacon sê dit is skoolgemeenskappe se plig om te sien dat alle onderwysers (publiek, industrial, kinders en onderwysers, nie bloot meer die minimum aanvaarbare standaarde bereik nie, maar dat hulle meer die maksimum aanvaarbare standaarde bereik.

"Vry vervoer ook na die professionele vryheid wat opvoeders moet hê om vakinhoud kreatief te ontwikkel en oor te dra en nie bloot gebonde te wees aan departementele werkboeke of minimum kurrikulumriglyne nie. Ons noodlig egter alle Suid-Afrikaners aan om op 13 Oktober bymekaar te bring ons land se onderwysers, ongeag waar hulle is. As jy nader jou eie skool is, gaan maak 'n draai of stuur 'n boodskap. Maniere is ook welkom om stadsjies en hernaamings op FEDSAS se sosiale media-platforms te deel met die hashtaek #DankieOnse."

Ek Praat Prontuit

Deur Mérie Scheepers

Is dit te veel gevra?

GEMSBOK-UPINGTON: As 'n mens deur Upington ry, sal jy maklik sê dit is 'n mooi dorp. Die pasie in die middeldorp is sonder slaggate en die grasperke van die parke is skoon en netjies met lopende sproeiers en 'n mens is al die tyd bewus daarvan dat ons langs die rivier woon.

Wanneer jy egter bietjie dieper kyk en jy ry deur die swaergebinde aan die buitewyke van die dorp, sien jy 'n ander prentjie. Hope vullisgoed wat oral op die sypaadjies afgeloer en uitgestort word, kinders wat tussen die vullisgoed speel sonder om dit eers mak te stamp. Dooiegatjie diere wat vir weke as 'n week op die sypaadjie lyk en nie 'n sypaadjie is nie, bly dit so voor.

Dit is hoe ons 'n mooie boks wat bo-oor die gemeenskaplawe—deur die huisraf sal ons nie vra dat ons meer enige gemeen in die eerste plek daar te stort en dan te verwag iemand anders moet dit opruim. Op 'n sypaadjie wag is vir die munisipale werkspanne. Op die erwe wat oopgelaat word, sodat daar houe gebou kan word of waar openbare gebou kan word, wag ons vir die munisipaliteit.

Selfs in die middedorp word het gereelde vullisbakke, by redelik omgeklik vir ons gebruikers en toepasbare toilet. Sê nou ons Telkom-kabel in die afgelope vier maande twee keer gesteel en gesteel op die lot af is ons straat. Ons was vir weeks sonder internet of telefoon. Omdat die munisipale amptenare nie die erf se eienaar lot vinde kan vra nie!

Soms een bedelaars by die verkeerslig, soos 's wat hulle verbied. Hulle is die engste woetsie en dit wat ons verhoorwaarde nie vir hulle ook gaskry! Is nie nie, is die voorbeeld wat ons vir die volgende geslag stel, maar wat...

Dit is reg. Dit is hulle werk. Ons ondervinden is deur ons gekies om in ons dorp te lyk en ons eiendomsbelasting is hoër as sommige gevalle dorpe in die Noordelike voorstede van Kaapstad. Ons betaal hulle om te lyk dat Upington nie in 'n sosiale vulbikoop verander nie. Ons betaal dat die munisipale gebou nie deur staan met lae kaduwe nie, want as jy iemand wil spreek oor 'n probleem maak je 'n afspraak gemaak het) en daar niemand wat jou kan help nie.

Geld is 'n pro-bloem, die groot verdoeming - maar dit lyk nie so wanneer munisipale besoptes vrolik en liggend in volgepakte voertuie sondrits, wegwaardes koopes verder as werk (hulle pakkets vervoegaars nie. Dit lyk nie so as vyf koerante amptenare met 'n munisipale voertuig vir jou 'n boodskap bring in plaas daarvan om 'n afspraak na te kom of jou net terug te skakel nie.

Die nuwste meme wil graag in 'n mooi, skoon dorp woon. In al die inbreukings van die dorp, nie net in die hoofstraat en "goeie en duur" buurte nie. As elkeen van ons ons gemeenskap omgee, voor ons ons deur kon vee en die munisipale amptenare en die SAPD doen hulle werk, maak ons 'n groot geslag groot wat ook na ons hulle sal omsien. Is dit regtig so veel gevra?

Note from the CSIR: The Gemsbok is a weekly Afrikaans newspaper which is distributed every Wednesday and made available from Wednesday to Friday; it is dated for a Friday (in this case, 6 October 2017).

FINAL SCOPING REPORT

Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

APPENDIX E:

Copies and Proof of Correspondence sent to I&APs

CONTENTS

Copies and Proof of Correspondence Sent to I&APs for the Project Initiation as well as Release of Draft Scoping Report for Review

CSIR Environmental Management Services
P. O. Box 320, Stellenbosch, 7599
Tel: 021 888 2432
Fax: 021 888 2472
Email: kstroebel@csir.co.za

20 September 2017

Dear Interested and Affected Party

RE: RELEASE OF DRAFT SCOPING REPORTS FOR THE PROPOSED DEVELOPMENT OF THREE SOLAR PHOTOVOLTAIC (PV) FACILITIES (REFERRED TO AS SKEERHOK PV 1, SKEERHOK PV 2 AND SKEERHOK PV 3) ON PORTION 9 OF GEMSBOK BULT 120 AND PORTION 0 OF SMUTSHOEK 395, NORTH-EAST OF KENHARDT, NORTHERN CAPE PROVINCE

juwi Renewable Energies (PTY) Ltd (i.e. "juwi") is proposing to develop three 100 Megawatt (MW) Solar Photovoltaic (PV) power generation facilities and associated electrical infrastructure (including 132 kV transmission lines for all three 100 MW facilities) on Portion 9 of Gemsbok Bult 120 and Portion 0 of Smutshoek 395, and the connection points to the Eskom Nieuwehoop Substation on the remaining extent of Portion 3 of Gemsbok Bult Farm 120, approximately 70 km south of Upington and 43 km north-east of Kenhardt within the !Kheis Local Municipality, Northern Cape Province.

In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the 2017 NEMA Environmental Impact Assessment (EIA) Regulations promulgated in Government Gazette 40772 and Government Notice (GN) R327, R326, R325 and R324 on 7 April 2017, a full Scoping and EIA Process is required for the construction of the three Solar PV facilities. A separate Basic Assessment Process will be undertaken for the development of the proposed transmission lines, associated electrical infrastructure and connection to the Eskom Nieuwehoop Substation. The Council for Scientific and Industrial Research (CSIR) has been appointed by the Project Applicant to undertake the separate required Basic Assessment and Scoping and EIA Processes for the proposed projects.

The proposed 100 MW Solar PV facility projects (requiring a Scoping and EIA Process) and the Basic Assessment project are referred to as:

Scoping and EIA Processes: Proposed 75 MW Solar PV Facilities	Basic Assessment Processes: Proposed 132 kV Transmission Lines and Associated Electrical Infrastructure
▪ Skeerhok PV 1 ▪ Skeerhok PV 2 ▪ Skeerhok PV 3	▪ Skeerhok PV – Transmission Line

Table 1 below indicates the Project Applicant details, as well as brief project details.

Table 1: Details of the Scoping and EIA Projects

Project Reference	Project Applicant	Generation Capacity	Project Footprint	Available Development Area
Skeerhok PV 1	juwi Renewable Energies (PTY) Ltd	100 MW	300 ha	400 ha
Skeerhok PV 2		100 MW	300 ha	570 ha
Skeerhok PV 3		100 MW	300 ha	350 ha

juwi is an integrated independent power producer that is focused on making solar energy a sustainable and affordable source on a global scale. Linked to enhancing its operations within South Africa, each 100 MW Solar PV facility will cover an approximate area of 300 ha (as noted in Table 1 above). The area available to develop at the preferred sites exceeds the required project footprint area, and therefore there is scope to avoid major environmental constraints through the final design and layout of the facility. The proposed projects will entail the construction of a solar field, buildings, electrical infrastructure, internal access roads, and associated infrastructure and structures.

Since the proposed 100 MW Solar PV facilities are located within the same geographical area and constitute the same type of activity, an integrated Public Participation Process (PPP) will be undertaken for the proposed projects. However, separate Applications for Environmental Authorisation (EA) have been lodged with the Competent Authority (i.e. the National Department of Environmental Affairs (DEA)) for each proposed Scoping and EIA project and will be lodged for the Basic Assessment project. Furthermore, separate reports (i.e. Basic Assessment and Scoping and EIA Reports) will be compiled for each project. The Basic Assessment Report will be made available for Interested and Affected Party (I&AP) and stakeholder review together with the EIA Reports.

In line with the above, as a registered I&AP on the project database, you are hereby notified of the release of the Scoping Reports for the Skeerhok PV 1, Skeerhok PV 2 and Skeerhok PV 3 projects to all registered I&APs and stakeholders for a 30-day review period, which will extend from **20 September 2017 to 23 October 2017.**

Hard copies of the Scoping Reports are available for public viewing at the Kenhardt Library (in Park Street). The Draft Scoping Reports can also be downloaded from the following website: https://www.csir.co.za/environmental-impact-assessment

All comments received during this 30 day review period will be recorded and included in the Final Scoping Reports for submission to the National DEA for decision-making in line with Regulations 21 and 22 of the 2014 EIA Regulations (GN R326). As a registered I&AP on the project database, you will be notified of the submission of the Final Scoping Reports to the DEA for decision-making.

Should you have any queries or require additional information please do not hesitate to contact the undersigned using the contact details provided above.

Sincerely,

Surina Laurie
Project Leader
CSIR Environmental Management Services

Kelly Stroebel
Project Manager
CSIR Environmental Management Services

Email sent to all I&APs on 20 September 2017

From: Kelly Stroebel
To:
BC MRabothata@environment.gov.za; HAlberts@environment.gov.za; wlutsch@environment.gov.za; oriba@ncpg.gov.za; mmathews@ncpg.gov.za; sdelafontaine@gmail.com; elsabe.dtec@gmail.com; sb@siyanda.gov.za; fpr@bodr.gov.za; teresascheepers@vodamail.co.za; gloria.tlaky@gmail.com; mm@kaigarib.gov.za; clarkem@kaigarib.gov.za; MeiM@dwa.gov.za; CloeteS@dws.gov.za; SchwartzC@dws.gov.za; mndzilili@ncpg.gov.za; smbanjwa@ncpg.gov.za; ltoolsbernado@ncpg.gov.za; MashuduMa@daff.gov.za; ThokoB@daff.gov.za; nhlakad@daff.gov.za; annelizac@nda.agric.za; JacolineMa@daff.gov.za; aditeme@agri.ncape.gov.za; peter.buys@nersa.org.za; klawrence@trpw.ncape.gov.za; waltjc@nra.co.za; AbrahamsN@nra.co.za; monica.lepheane@labour.gov.za; rwarie@ncpg.gov.za; ratha.timothy@gmail.com; strohl@caa.co.za; GeerinJH@eskom.co.za; LeaskK@eskom.co.za; WyngaaJO@eskom.co.za; HaarhL@eskom.co.za; sharon@nocci.co.za; atiplady@ska.ac.za; Marina.Lourens@transnet.net; Gilbert.Nortier@transnet.net; Mayvyn.Bhana@transnet.net; Clive.Stephenson@transnet.net; rredelstorff@sahra.org.za; Kgauta.Mokoena@dmr.gov.za; esibeko@dtps.gov.za; chris@salt.ac.za; raoul@salt.ac.za; advocacy@birdlife.org.za; l.ntsolo@sanbi.org.za; admin@grasslands.org.za; wep@ewt.org.za; joh.henschel@saeon.ac.za; pruplal@icasa.org.za; pietk@karsten.co.za; straussdj@stocksandstrauss.com; vanwyk88@hotmail.com; mitchell.hodgson@scatecsolar.com; claude@veroniva.co.za; karen@mulilo.com; Babalwa Mqokeli; Cleo Forster; Surina Laurie; howard.hendricks@sanparks.org; ncagric@worldonline.co.za; ontvang@agric.co.za; ptiger@ncpg.gov.za
Date: 18/09/2017 11:23
Subject: juwi Skeerhok PV projects; release of DSR's for public comment
Attachments: CSIR Letter to I&APs_juwi Skeerhok PV projects.pdf

Dear Stakeholder,

RE: release of Draft scoping reports for the Proposed development of three Solar Photovoltaic (PV) Facilities (referred to as Skeerhok pv 1, Skeerhok pv 2 and Skeerhok pv 3) on Portion 9 oF GEMSBOK BULT 120 AND PORTION 0 OF SMUTSHOEK 395, north-east of Kenhardt, Northern Cape Province

Please see attached letter notifying you of the availability of the three above-mentioned Draft Scoping Reports for public comment. In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the 2017 NEMA Environmental Impact Assessment (EIA) Regulations promulgated in Government Gazette 40772 and Government Notice (GN) R327, R326, R325 and R324 on 7 April 2017, a full Scoping and EIA Process is required for the construction of the three Solar PV facilities. (CSIR) has been appointed by the Project Applicant (juwi Renewable Energies (Pty) Ltd) to undertake the separate required Basic Assessment and Scoping and EIA Processes for the proposed projects.
Hard copies of the Scoping Reports are available for public viewing at the Kenhardt Library (in Park Street). The Draft Scoping Reports can also be downloaded from the following website: https://www.csir.co.za/environmental-impact-assessment

The comment period extends from Wednesday 20th September 2017 to Monday 23rdOctober 2017. Please submit any comments on the DSR's to the CSIR project manager (contact details below) by the 23rd October 2017.
Kindly contact the undersigned for further information or for any queries relating to the above.
Kind Regards,

Kelly Stroebel
Environmental Assessment Practitioner (EAP)
CSIR Stellenbosch

kstroebel@csir.co.za
Tel. : 021 888 2432
PO Box 320, Stellenbosch, 7599

Proof of Delivery of Email sent to all I&APs on 20 September 2017

Message Id:	59BF90AA.8AD : 70 : 17837
Subject:	juwi Skeerhok PV projects; release of DSR's for public comment
Created By:	KStroebel@csir.co.za
Scheduled Date:	
Creation Date:	18/09/2017 11:23
From:	Kelly Stroebel

Recipients:

Recipient	Action	Date & Time
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BC: Babalwa Mqokeli(BMqokeli@csir.co.za)	Read	20/09/2017 10:35
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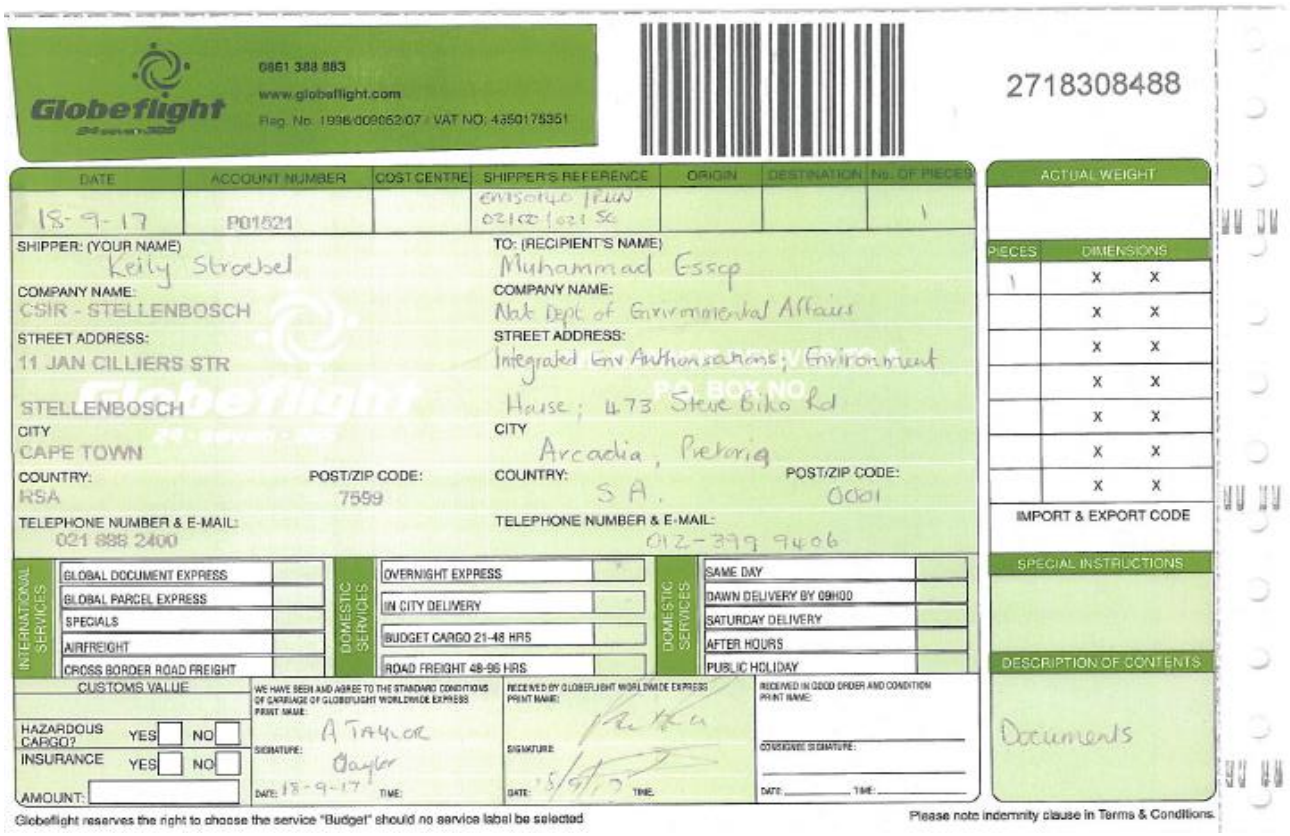
Proof of Delivery of hard copies of each report (Courier Waybills and Receipt of Hard Copy)



Globeflight
0861 388 883
www.globeflight.com
Reg. No. 1998/009052/07 / VAT NO: 4350175351

2718308488

DATE	ACCOUNT NUMBER	COST CENTRE	SHIPPER'S REFERENCE	ORIGIN	DESTINATION	No. OF PIECES
18-9-17	P01521		Emsoleo 1Rlw 02102/021 SE			1

SHIPPER: (YOUR NAME) Kelly Stroebel
COMPANY NAME: CSIR - STELLENBOSCH
STREET ADDRESS: 11 JAN CILLIERS STR
STELLENBOSCH
CITY: CAPE TOWN
COUNTRY: RSA
POST/ZIP CODE: 7599
TELEPHONE NUMBER & E-MAIL: 021 888 2400

TO: (RECIPIENT'S NAME) Muhammad Essop
COMPANY NAME: Nat Dept of Environmental Affairs
STREET ADDRESS: Integrated Env Authorisations; Environment House; 473 Steve Biko Rd
CITY: Arcadia, Pretoria
COUNTRY: S.A.
POST/ZIP CODE: 0001
TELEPHONE NUMBER & E-MAIL: 012-399 9406

ACTUAL WEIGHT

PIECES	DIMENSIONS
1	X X
	X X
	X X
	X X
	X X
	X X
	X X

IMPORT & EXPORT CODE

SPECIAL INSTRUCTIONS

DESCRIPTION OF CONTENTS: Documents

INTERNATIONAL SERVICES: GLOBAL DOCUMENT EXPRESS; GLOBAL PARCEL EXPRESS; SPECIALS; AIRFREIGHT; CROSS BORDER ROAD FREIGHT

DOMESTIC SERVICES: OVERNIGHT EXPRESS; IN CITY DELIVERY; BUDGET CARGO 21-48 HRS; ROAD FREIGHT 48-96 HRS

DOMESTIC SERVICES: SAME DAY; DAWN DELIVERY BY 09H00; SATURDAY DELIVERY; AFTER HOURS; PUBLIC HOLIDAY

CUSTOMS VALUE
HAZARDOUS CARGO? YES NO
INSURANCE YES NO
AMOUNT:

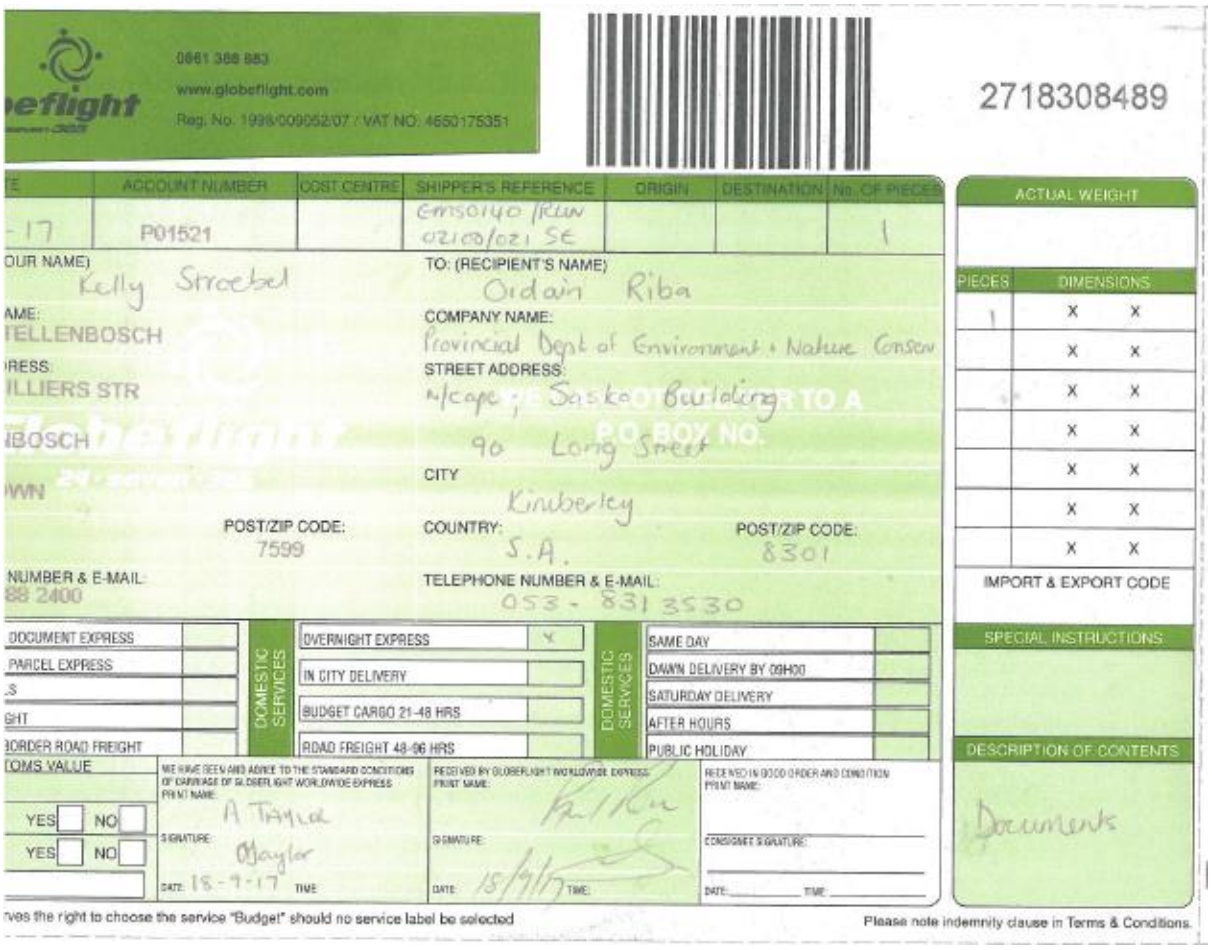
WE HAVE SEEN AND AGREE TO THE STANDARD CONDITIONS OF CARRIAGE OF GLOBEFLIGHT WORLDWIDE EXPRESS
PRINT NAME: A Taylor
SIGNATURE: Taylor
DATE: 18-9-17 TIME:

RECEIVED BY GLOBEFLIGHT WORLDWIDE EXPRESS
PRINT NAME:
SIGNATURE:
DATE: 18/9/17 TIME:

RECEIVED IN GOOD ORDER AND CONDITION
PRINT NAME:
CONSIGNEE SIGNATURE:
DATE: TIME:

Globeflight reserves the right to choose the service "Budget" should no service label be selected

Please note indemnity clause in Terms & Conditions.



Globeflight
0861 388 883
www.globeflight.com
Reg. No. 1998/009052/07 / VAT NO: 4650175351

2718308489

E	ACCOUNT NUMBER	COST CENTRE	SHIPPER'S REFERENCE	ORIGIN	DESTINATION	No. OF PIECES
-17	P01521		Emsoleo 1Rlw 02102/021 SE			1

OUR NAME) Kelly Stroebel
AME: TELLENBOSCH
RESS: ILLIERS STR
BOSCH
WN

TO: (RECIPIENT'S NAME) Ordain Riba
COMPANY NAME: Provincial Dept of Environment + Nature Conser
STREET ADDRESS: N/cape; Saskoop Building 90 Long Street
CITY: Kimberley
COUNTRY: S.A.
POST/ZIP CODE: 8301
TELEPHONE NUMBER & E-MAIL: 053-8313530

POST/ZIP CODE: 7599
NUMBER & E-MAIL: 88 2400

ACTUAL WEIGHT

PIECES	DIMENSIONS
1	X X
	X X
	X X
	X X
	X X
	X X
	X X

IMPORT & EXPORT CODE

SPECIAL INSTRUCTIONS

DESCRIPTION OF CONTENTS: Documents

DOCUMENT EXPRESS
PARCEL EXPRESS
S
GHT
BORDER ROAD FREIGHT

DOMESTIC SERVICES: OVERNIGHT EXPRESS; IN CITY DELIVERY; BUDGET CARGO 21-48 HRS; ROAD FREIGHT 48-96 HRS

DOMESTIC SERVICES: SAME DAY; DAWN DELIVERY BY 09H00; SATURDAY DELIVERY; AFTER HOURS; PUBLIC HOLIDAY

OMS VALUE
YES NO
YES NO

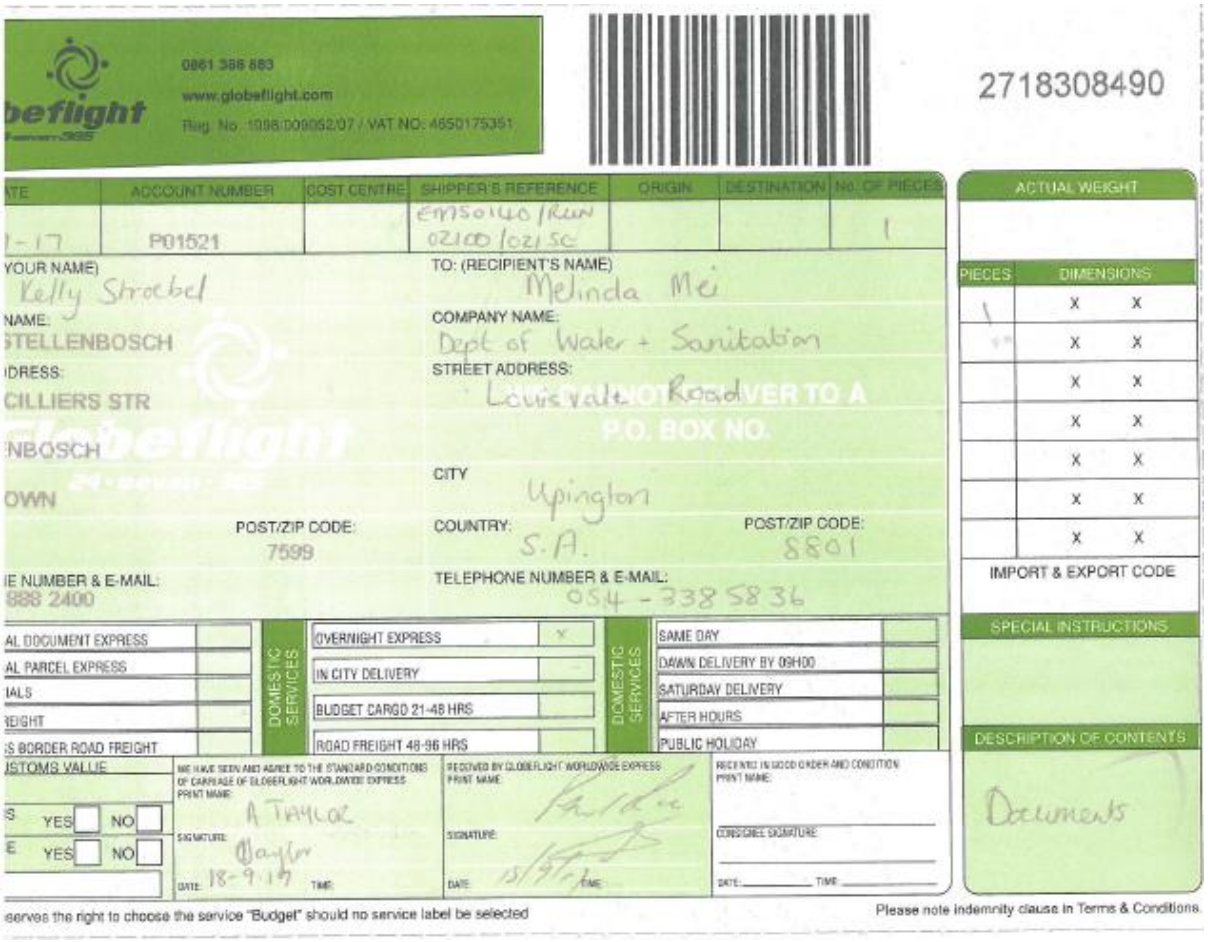
WE HAVE SEEN AND AGREE TO THE STANDARD CONDITIONS OF CARRIAGE OF GLOBEFLIGHT WORLDWIDE EXPRESS
PRINT NAME: A Taylor
SIGNATURE: Taylor
DATE: 18-9-17 TIME

RECEIVED BY GLOBEFLIGHT WORLDWIDE EXPRESS
PRINT NAME:
SIGNATURE:
DATE: 18/9/17 TIME:

RECEIVED IN GOOD ORDER AND CONDITION
PRINT NAME:
CONSIGNEE SIGNATURE:
DATE: TIME:

rves the right to choose the service "Budget" should no service label be selected

Please note indemnity clause in Terms & Conditions.



0861 366 883
www.globeflight.com
Reg. No. 1998/009052/07 / VAT NO: 4650175351

2718308490

ATE	ACCOUNT NUMBER	COST CENTRE	SHIPPER'S REFERENCE	ORIGIN	DESTINATION	No. OF PIECES
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ACTUAL WEIGHT

PIECES	DIMENSIONS	
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	X	X
	X	X
	X	X
	X	X
	X	X
	X	X

IMPORT & EXPORT CODE

SPECIAL INSTRUCTIONS

DESCRIPTION OF CONTENTS: Documents

YOUR NAME): Kelly Stroebel
NAME: STELLENBOSCH
DRESS: CILLIERS STR
NBOSCH
OWN
POST/ZIP CODE: 7599
E NUMBER & E-MAIL: 888 2400

TO: (RECIPIENT'S NAME): Melinda Mei
COMPANY NAME: Dept of Water + Sanitation
STREET ADDRESS: Louis Vale Road
DELIVER TO A P.O. BOX NO.
CITY: Upington
COUNTRY: S.A.
POST/ZIP CODE: 8801
TELEPHONE NUMBER & E-MAIL: 054 - 338 5836

		DOMESTIC SERVICES			DOMESTIC SERVICES	
AL DOCUMENT EXPRESS			OVERNIGHT EXPRESS	X	SAME DAY	
AL PARCEL EXPRESS			IN CITY DELIVERY		DAWN DELIVERY BY 09H00	
IALS			BUDGET CARGO 21-48 HRS		SATURDAY DELIVERY	
EIGHT			ROAD FREIGHT 48-96 HRS		AFTER HOURS	
S BORDER ROAD FREIGHT					PUBLIC HOLIDAY	

STOMS VALUE
S YES NO
E YES NO

WE HAVE SEEN AND AGREE TO THE STANDARD CONDITIONS OF CARRIAGE OF GLOBEFLIGHT WORLDWIDE EXPRESS
PRINT NAME: A TAYLOR
SIGNATURE: Taylor
DATE: 18-9-17 TIME:

RECEIVED BY GLOBEFLIGHT WORLDWIDE EXPRESS
PRINT NAME:
SIGNATURE:
DATE: 18/9/17 TIME:

RECEIVED IN GOOD ORDER AND CONDITION
PRINT NAME:
CONSIGNEE SIGNATURE:
DATE: TIME:

serves the right to choose the service "Budget" should no service label be selected

Please note indemnity clause in Terms & Conditions.

Follow-up Reminder Email sent to I&APs and Stakeholders on 26 October 2015 during the 30-day review of the Scoping Report and Addendum

From: Kelly Stroebel
To:
BC AbrahamsN@nra.co.za; aditeme@agri.ncape.gov.za; admin@grasslands.org.za; advocacy@birdlife.org.za; annelizac@nda.agric.za; atiplady@ska.ac.za; chris@salt.ac.za; clarkem@kaigarib.gov.za; claude@veroniva.co.za; Clive.Stephenson@transnet.net; CloeteS@dws.gov.za; elsabe.dtec@gmail.com; esibeko@dtps.gov.za; fpr@bodr.gov.za; GeerinJH@eskom.co.za; Gilbert.Nortier@transnet.net; gloria.tlaky@gmail.com; HaarhL@eskom.co.za; HAlberts@environment.gov.za; howard.hendricks@sanparks.org; JacolineMa@daff.gov.za; joh.henschel@saeon.ac.za; karen@mulilo.com; Kgauta.Mokoena@dmr.gov.za; klawrence@trpw.ncape.gov.za; l.ntsolo@sanbi.org.za; LeaskK@eskom.co.za; ltoolsbernado@ncpg.gov.za; Marina.Lourens@transnet.net; MashuduMa@daff.gov.za; Mayvyn.Bhana@transnet.net; MeiM@dwa.gov.za; mitchell.hodgson@scatecsolar.com; mm@kaigarib.gov.za; mmathews@ncpg.gov.za; mndzilili@ncpg.gov.za; monica.lepheane@labour.gov.za; MRabothata@environment.gov.za; ncagric@worldonline.co.za; nhlakad@daff.gov.za; ontvang@agric.co.za; oriba@ncpg.gov.za; peter.buys@nersa.org.za; pietk@karsten.co.za; pruplal@icasa.org.za; ptiger@ncpg.gov.za; raoul@salt.ac.za; ratha.timothy@gmail.com; rredelstorff@sahra.org.za; rwarie@ncpg.gov.za; sb@siyanda.gov.za; SchwartzC@dws.gov.za; sdelafontaine@gmail.com; sharon@nocci.co.za; smbanjwa@ncpg.gov.za; straussdj@stocksandstrauss.com; strohl@caa.co.za; teresascheepers@vodamail.co.za; ThokoB@daff.gov.za; vanwyk88@hotmail.com; waltjc@nra.co.za; wep@ewt.org.za; wlutsch@environment.gov.za; WyngaaJO@eskom.co.za
Date: 17/10/2017 12:36
Subject: REMINDER: juwi Skeerhok PV projects: release of DSR's for public comment
Attachments: CSIR Letter to I&APs_juwi Skeerhok PV projects.pdf

Dear Stakeholder,

Please be reminded that the comment period for the below-mentioned juwi Skeerhok Solar PV 1, 2 and 3 Draft Scoping Reports ends next week **Monday the 23rd October.** Kindly submit all comments to the undersigned by that date.

Please contact me should you require any further information.

Kind Regards,

Kelly Stroebel
Environmental Assessment Practitioner (EAP)
CSIR Stellenbosch
_____
kstroebel@csir.co.za
Tel. : 021 888 2432
PO Box 320, Stellenbosch, 7599

>>> Kelly Stroebel 18/09/2017 11:23 >>>
Dear Stakeholder,

RE: release of Draft scoping reports for the Proposed development of three Solar Photovoltaic (PV) Facilities (referred to as Skeerhok pv 1, Skeerhok pv 2 and Skeerhok pv 3) on PoRTion 9 oF GEMSBOK BULT 120 AND PORTION 0 OF SMUTSHOEK 395, north-east of Kenhardt, Northern Cape Province

Please see attached letter notifying you of the availability of the three above-mentioned Draft Scoping Reports for public comment. In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the 2017 NEMA Environmental Impact Assessment (EIA) Regulations promulgated in Government Gazette 40772 and Government Notice (GN) R327, R326, R325 and R324 on 7 April 2017, a full Scoping and EIA Process is required for the construction of the three Solar PV facilities. (CSIR) has been appointed by the Project Applicant (juwi Renewable Energies (Pty) Ltd) to

undertake the separate required Basic Assessment and Scoping and EIA Processes for the proposed projects.

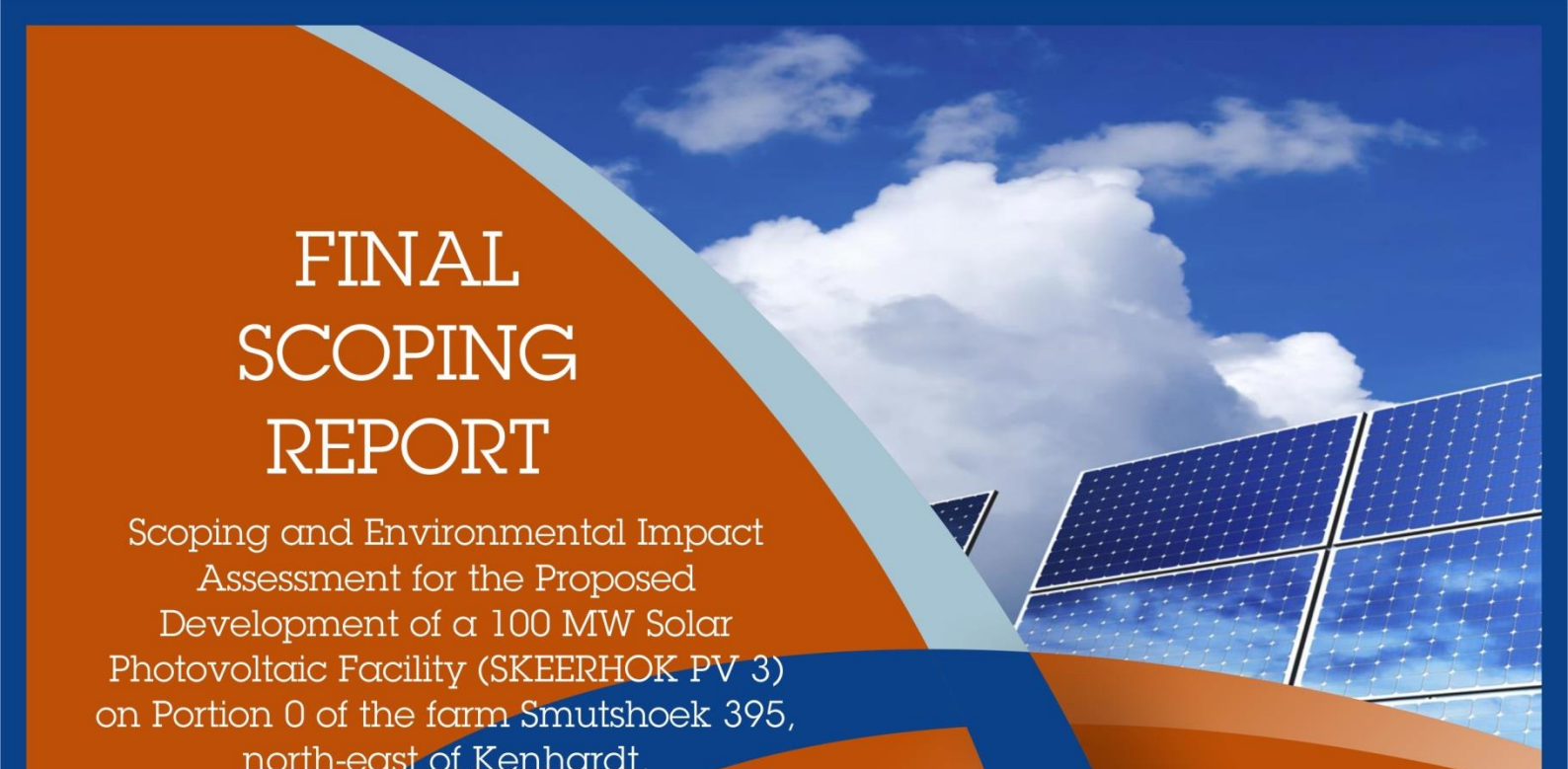
Hard copies of the Scoping Reports are available for public viewing at the Kenhardt Library (in Park Street). The Draft Scoping Reports can also be downloaded from the following website: https://www.csir.co.za/environmental-impact-assessment

The comment period extends from Wednesday 20th September 2017 to Monday 23rdOctober 2017. Please submit any comments on the DSR's to the CSIR project manager (contact details below) by the 23rd October 2017.

Kindly contact the undersigned for further information or for any queries relating to the above.

Kind Regards,

Kelly Stroebel
Environmental Assessment Practitioner (EAP)
CSIR Stellenbosch
_____
kstroebel@csir.co.za
Tel. : 021 888 2432
PO Box 320, Stellenbosch, 7599



FINAL SCOPING REPORT

Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

APPENDIX F:

Copy of Site Notice Boards and Proof of Placement

CONTENTS

Site Notice Board – English

JOINT NOTICE OF BASIC ASSESSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PROCESS

PROPOSED DEVELOPMENT OF THREE SOLAR PHOTOVOLTAIC FACILITIES AND ASSOCIATED ELECTRICAL INFRASTRUCTURE, NORTH-EAST OF KENHARDT, NORTHERN CAPE PROVINCE

Notice is given in terms of Environmental Impact Assessment (EIA) Regulations under, sub-regulation 41 (2) (a), published in Government Gazette 40772 of 7 April 2017, of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA), that juwi Renewable Energies (Pty) Ltd (herein after referred to as "juwi") proposes to construct and operate 3 x 100 Megawatt (MW) Solar Photovoltaic (PV) Facilities and associated electrical infrastructure (subject to a separate Basic Assessment Process) near Kenhardt in the Northern Cape Province. The proposed Facilities will be constructed on two land portions, namely Portion 0 of Smutshoek Farm 395 and Portion 9 of Gemsbok Bult Farm 120, located approximately 43 km north-east of Kenhardt. The proposed Solar Facilities will be connected to the Nieuwehoop Substation via 132 kV transmission lines for each 100 MW Facility.

A full Scoping and EIA Process is required for the construction of the three Solar PV Facilities. A separate Basic Assessment Process is also required and will be undertaken for the development of the proposed transmission lines. The CSIR has been appointed by juwi to undertake the required Basic Assessment and Scoping and EIA Processes for the proposed projects. The need for a Basic Assessment and Scoping and EIA is triggered by the following potential listed activities listed in GNR 324,325 and 327:

Government Notice	Listed Activity Number
GNR 327, 7 April 2017	Activity 11; Activity12 (x) and (xii); Activity 19 (i); Activity 24 (ii) and Activity 28 (ii)
GNR 325, 7 April 2017	Activity 1; Activity 14 and Activity 15
GNR 324, 7 April 2017	Activity 18

Since the proposed 100 MW Solar PV Facilities are located within the same geographical area and constitute the same type of activity, an integrated Public Participation Process will be undertaken for the proposed projects. However, separate Applications for Environmental Authorisation (EA) will be lodged with the Competent Authority (i.e. the National Department of Environmental Affairs (DEA)) for each proposed Solar PV Facility and transmission line. Separate reports (i.e. Basic Assessment and Scoping and EIA Reports) will be compiled for each project.

To ensure that you are included on the project register as an Interested and Affected Party (I&AP), as well as to raise any issues and concerns for inclusion in the Scoping/EIA Reports, you are kindly requested to register your interest in the projects and submit any comments you may have to the CSIR (at the details indicated below).

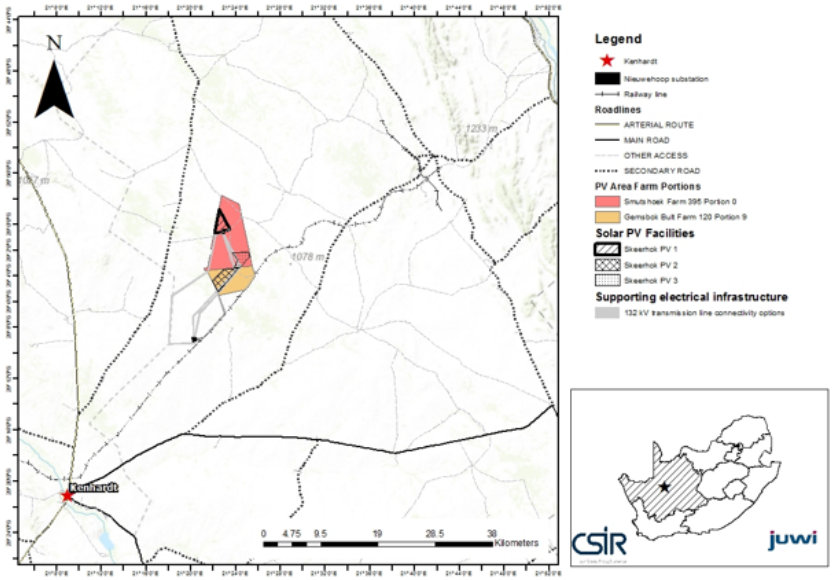


Figure: Locality Map depicting the location of the proposed three Solar Photovoltaic Facilities

Ms Kelly Stroebel
PO Box 320, Stellenbosch, 7599
Tel: 021 888 2432
Fax: 021 888 2693
Email: kstrobel@csir.co.za

Site Notice Board - Afrikaans

l your files
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GEKOMBINEERDE KENNISGEWING VAN OMGEWINGSIMPAKSTUDIE (OIS) EN BASIESE BESTEKOPNAME PROSESSE

GEINTEGREERDE PUBLIEKE DEELNAME PROSES VIR DIE VOORGESTELDE DRIE FOTOVOLTAÏSE SONKRAGAANLEGTE VAN 100 MW ELK EN MEEGAANDE ELEKTRIESE INFRASTRUKTUUR VIR JUWI NABY KENHARDT IN DIE NOORD-KAAP PROVINSIE

Hiermee word kennis gegee in terme van Regulasie 41 (2) van die Omgewingsimpakstudie (OIS) Regulasies soos gepubliseer in Staatskoerant No 40772 op 7 April 2017, van die Nasionale Omgewingsbeheer Wet, 1998 (Wet No 107 van 1998) (NEMA), dat juwi Renewable Energies' (Pty) Ltd (hierna verwys as "juwi") van voorneme is om drie fotovoltaïse sonkragaanlegte van 100 MW elk en drie geassosieerde kraglyne te installer en te bedryf naby Kenhardt in die Noord Kaap. Die kraglyne sal deel uitmaak en geassesseer word in drie aparte Basiese Evalueringsprosesse wat later onderneem sal word. Die voorgestelde fotovoltaïse sonkragaanlegte sal aansluit by die Nieuwehoop Substasie via drie 132 kV kraglyne (een vir elke fotovoltaïse sonkragaanleg. Die voorgestelde fotovoltaïse sonkragaanlegte sal opgerig word op die volgende plase: Gedeeltes 0 van Smutshoek Plaas 395 en Gedeelte 9 van Gemsbok Bult Plaas 120, geleë ongeveer 43 km noord oos van Kenhardt.

Die beoogde drie fotovoltaïse sonkragaanlegte vereis dat 'n Omvangsbepaling-en Omgewingsevaluering (OIE) proses onderneem moet word. Die dire kraglyne vereis dat 'n Basiese Evalueringsproses onderneem word. Die Wetenskaplike en Nywerheidsnavorsingsraad (WNNR) is deur juwi aangestel om die vereiste prosesse te onderneem. Die prosesse word benodig omdat die volgende aktiwiteite soos gelys in Staatskennisgewings R 324, R 325 en R 327 van toepassing is:

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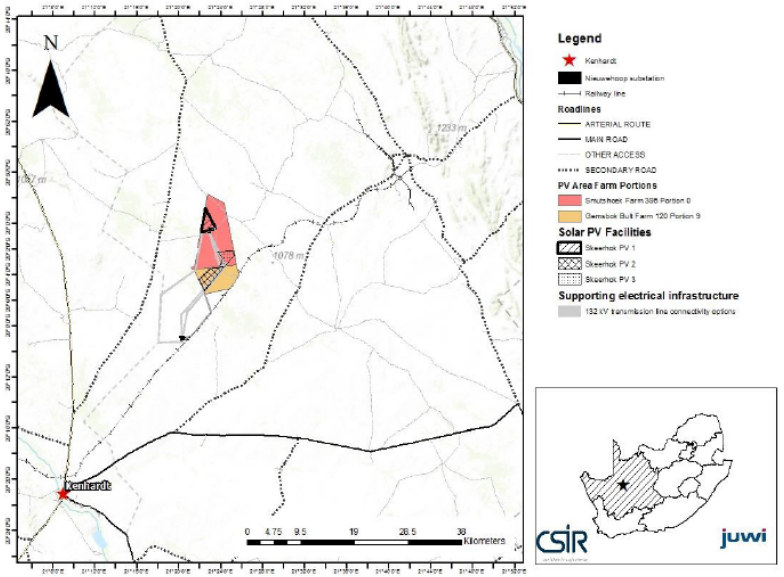
GNR 327, 7 April 2017	Aktiwiteite 11; 12 (x) en (xii); 19 (i); 24 (ii) en 28 (ii)
GNR 325, 7 April 2017	Aktiwiteite 1; 14 & 15
GNR 324, 7 April 2017	Aktiwiteit 18

Aangesien al drie son plaas projekte in dieselfde geografiese area geleë is en dieselfde tipe aktiwiteit behels sal 'n geïntegreerde Publieke Deelname Proses onderneem word. Drie aparte aansoeke en OIE verslae sal ingedien word vir evaluering deur die Nasionale Departement van Omgewingsake vir die fotovoltaïse sonkragaanlegte. Drie aparte aansoeke sal ook ingedien word vir die geassosieerde kraglyne en dit sal onderhewig wees aan drie aparte Basiese Bestekopname prosesse waarvoor drie aparte verslae opgestel gaan word.

Om te verseker dat u vir die projekte as 'n Belangstellende en Geaffekteerde Party (B&GP) geregistreer word of om enige kwessie uit te lig aangaande die projekte, word u vriendelik versoek om te registreer vir die projek en u kommentaar aan WNNR se projek bestuurder (inligting hieronder) te stuur.

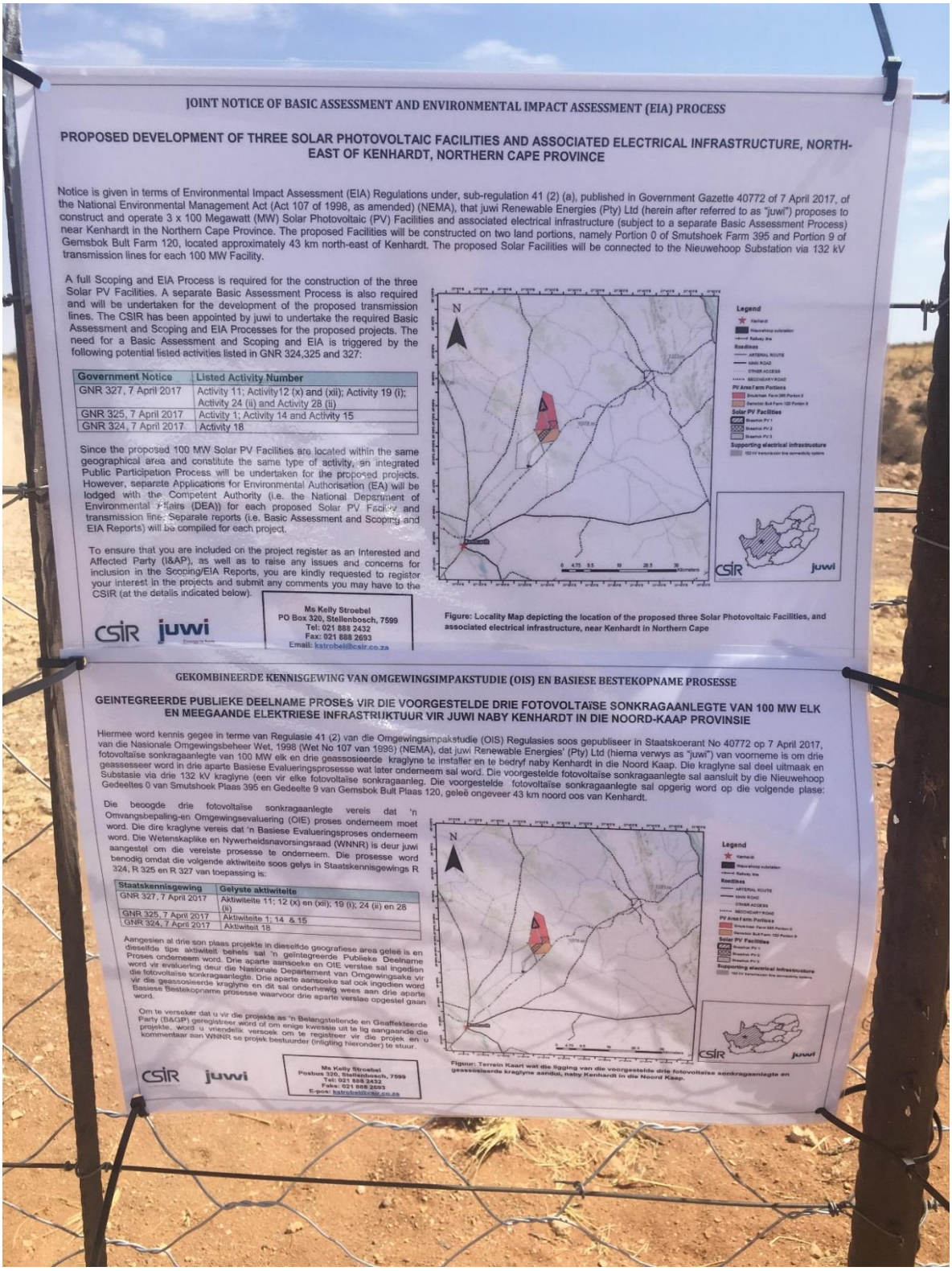


Figuur: Terrein Kaart wat die ligging van die voorgestelde drie fotovoltaïse sonkragaanlegte en geassosieerde kraglyne aandui, naby Kenhardt in die Noord Kaap.

Ms Kelly Stroebel
Posbus 320, Stellenbosch, 7599
Tel: 021 888 2432
Faks: 021 888 2693
E-pos: kstrobel@csir.co.za

Proof of Placement of Site Notice Boards: 19th September 2017

Site Notice Board (English and Afrikaans) placed at the entrance to the site, which serves as one of the access routes. GPS Co-ordinates of the site notice: 29º4'3"S; 21º25'35"E



JOINT NOTICE OF BASIC ASSESSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PROCESS

PROPOSED DEVELOPMENT OF THREE SOLAR PHOTOVOLTAIC FACILITIES AND ASSOCIATED ELECTRICAL INFRASTRUCTURE, NORTH-EAST OF KENHARDT, NORTHERN CAPE PROVINCE

Notice is given in terms of Environmental Impact Assessment (EIA) Regulations under, sub-regulation 41 (2) (a), published in Government Gazette 40772 of 7 April 2017, of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA), that juwi Renewable Energies (Pty) Ltd (herein after referred to as "juwi") proposes to construct and operate 3 x 100 Megawatt (MW) Solar Photovoltaic (PV) Facilities and associated electrical infrastructure (subject to a separate Basic Assessment Process) near Kenhardt in the Northern Cape Province. The proposed Facilities will be constructed on two land portions, namely Portion 0 of Smutshoek Farm 395 and Portion 9 of Gemsbok Bult Farm 120, located approximately 43 km north-east of Kenhardt. The proposed Solar Facilities will be connected to the Nieuwehoop Substation via 132 kV transmission lines for each 100 MW Facility.

A full Scoping and EIA Process is required for the construction of the three Solar PV Facilities. A separate Basic Assessment Process is also required and will be undertaken for the development of the proposed transmission lines. The CSIR has been appointed by juwi to undertake the required Basic Assessment and Scoping and EIA Processes for the proposed projects. The need for a Basic Assessment and Scoping and EIA is triggered by the following potential listed activities listed in GNR 324,325 and 327:

Government Notice	Listed Activity Number
GNR 327, 7 April 2017	Activity 11; Activity12 (x) and (xii); Activity 19 (i); Activity 24 (ii) and Activity 28 (ii)
GNR 325, 7 April 2017	Activity 1; Activity 14 and Activity 15
GNR 324, 7 April 2017	Activity 18

Since the proposed 100 MW Solar PV Facilities are located within the same geographical area and constitute the same type of activity, an integrated Public Participation Process will be undertaken for the proposed projects. However, separate Applications for Environmental Authorisation (EA) will be lodged with the Competent Authority (i.e. the National Department of Environmental Affairs (DEA)) for each proposed Solar PV Facility and transmission line. Separate reports (i.e. Basic Assessment and Scoping and EIA Reports) will be compiled for each project.

To ensure that you are included on the project register as an Interested and Affected Party (I&AP), as well as to raise any issues and concerns for inclusion in the Scoping/EIA Reports, you are kindly requested to register your interest in the projects and submit any comments you may have to the CSIR (at the details indicated below).

CSIR juwi

Ms Kelly Stroebel
PO Box 320, Stellenbosch, 7599
Tel: 021 888 2432
Fax: 021 888 2693
Email: kstrobel@csir.co.za

Figure: Locality Map depicting the location of the proposed three Solar Photovoltaic Facilities, and associated electrical infrastructure, near Kenhardt in Northern Cape

GEKOMBINEERDE KENNISGEWING VAN OMGEWINGSIMPAKSTUDIE (OIS) EN BASIESE BESTEKOPNAME PROSESSE

GEINTEGREERDE PUBLIEKE DEELNAME PROSES VIR DIE VOORGESTELDE DRIE FOTOVOLTAÏSE SONKRAGAANLEGTE VAN 100 MW ELK EN MEEGAANDE ELEKTRIESE INFRASTRUKTUUR VIR JUWI NABY KENHARDT IN DIE NOORD-KAAP PROVINSIE

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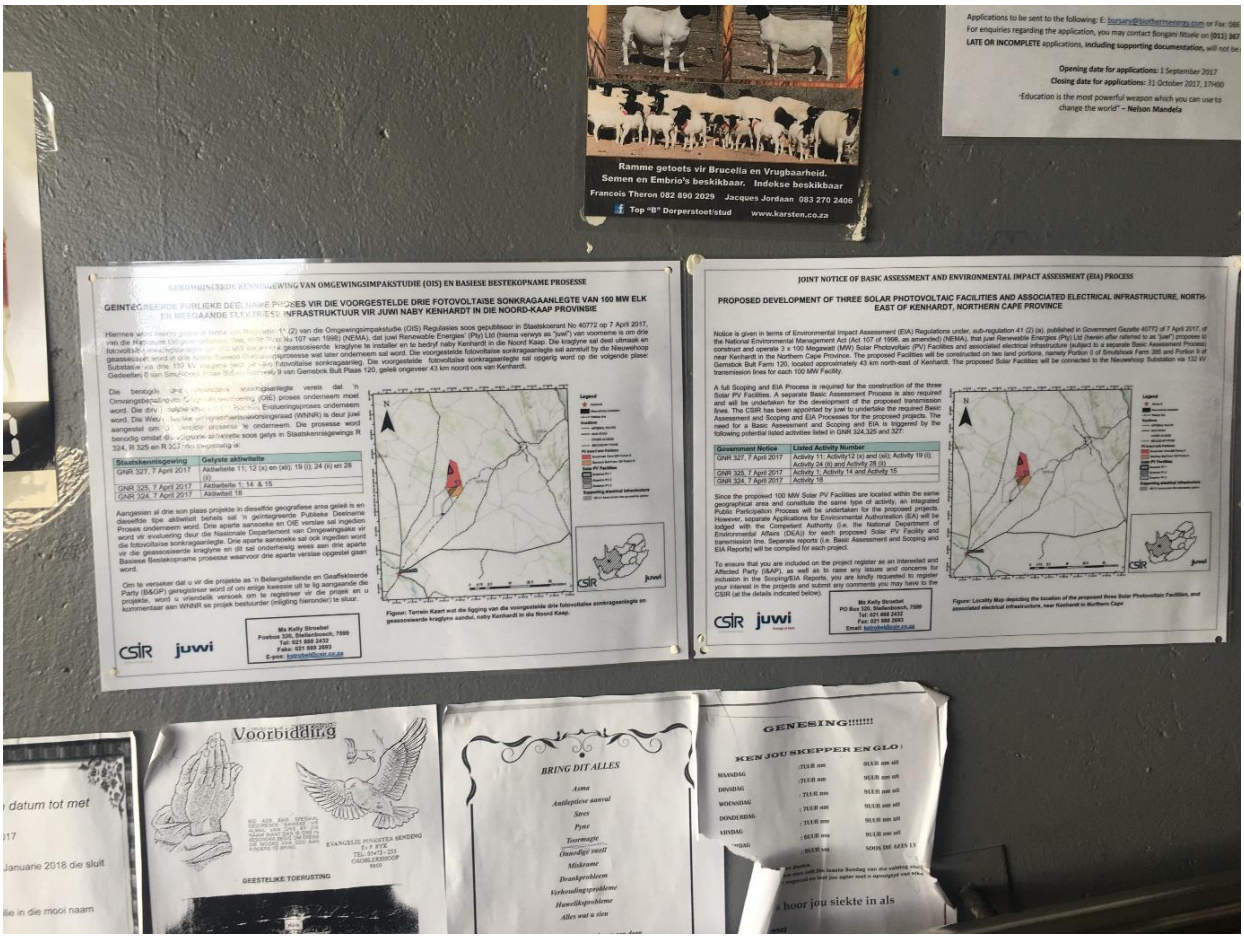
CSIR juwi

Ms Kelly Stroebel
Posbus 320, Stellenbosch, 7599
Tel: 021 888 2432
Faks: 021 888 2693
E-pos: kstrobel@csir.co.za

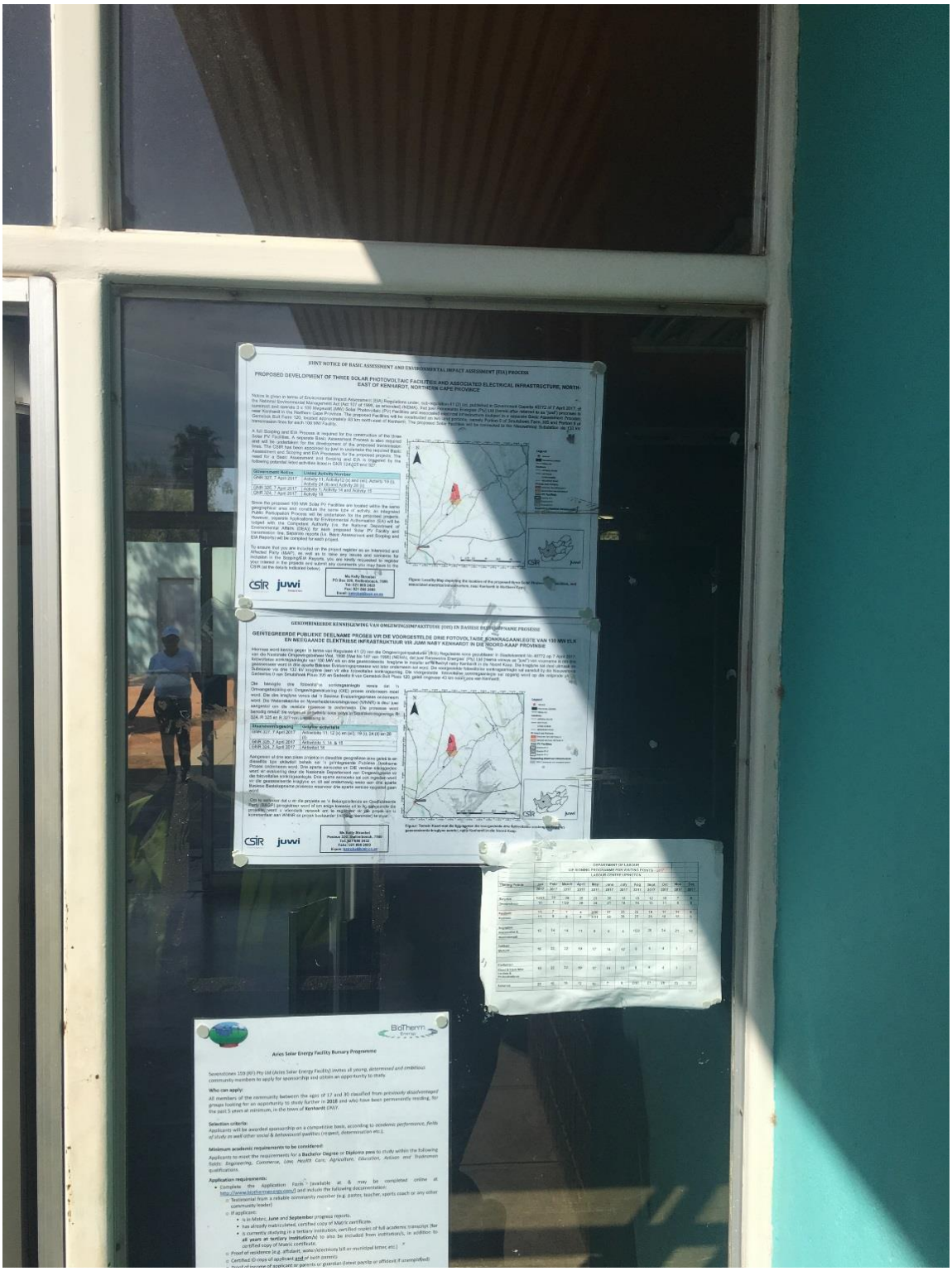
Figuur: Terrein Kaart wat die ligging van die voorgestelde drie fotovoltaïse sonkragaanlegte en geassosieerde kraglyne aandui, naby Kenhardt in die Noord Kaap.

Site Notice Board (English and Afrikaans) placed at the entrance to the site, which serves as one of the access routes. GPS Co-ordinates of the site notice: 29º4'3"S; 21º25'35"E

Additional Locations of the site notices placed on 19th September 2017



Site Notice Board (English and Afrikaans) placed at the Kenhardt Petrol Station.



Close up image of the Site Notice Board (English and Afrikaans) placed at the Kai !Garib Municipality Offices in Kenhardt.

Site Notice Board (English and Afrikaans) placed at the entrance to the Transet road (alongside the railway line), which serves as one of the access routes to the project sites.

FINAL SCOPING REPORT

Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

APPENDIX G:

Comments from I&APs

From: Elsabe Swart <elsabe.dtec@gmail.com>
To: <kstroebel@csir.co.za>
CC: Conrad Geldenhuys <c.geldenhuys@hotmail.com>, Louise Geldenhuys <geldenhuys.louise1@gmail.com>, Marnus Smit <zmsmit.denc@gmail.com>, Natalie Uys <nuys.denc@gmail.com>, Peter Cloete <peter.denc87@gmail.com>, Peter Ramollo <ramollopp@gmail.com>, Samantha De la Fontaine <sdelafontaine@gmail.com>
Date: 20/09/2017 12:13
Subject: Fwd: juwi Skeerhok PV projects; release of DSR's for public comment
Attachments: CSIR Letter to I&APs_juwi Skeerhok PV projects.pdf

Dear Kelly

Due to short notice, there is not enough time to go through the documentation.

However, I would like to highlight some aspects that must be considered and responded to:
1. Should any impact occur within a CBA area (2017 version) within the Northern Cape, it will trigger a biodiversity offset. Accordingly, a biodiversity status assessment report must be prepared as well for consideration.
2. Confirmation must be obtained from SKA that the development planned will not negatively effect SKA activities or plans, nor will it be within their declared spatial area declared in Government Gazette.

Thank you

From: Claude Bosman <claude@veroniva.co.za>
To: Kelly Stroebel <KStroebel@csir.co.za>
CC: Surina Laurie <SLaurie@csir.co.za>
Date: 21/09/2017 10:19
Subject: Re: juwi Skeerhok PV projects; release of DSR's for public comment

[The e-mail server of the sender could not be verified (SPF Record)]

Hi Kelly,

Can you please send me the KMZ links for the 3x proposed project sites and power corridor to the sub station ?

Thanks
Claude

Claude Bosman (CA) SA
Veroniva (Pty) Ltd - Energy | Property
Tel +27 (0)82 331 4098
www.veroniva.co.za

From: Lizelle Stroh <StrohL@caa.co.za>
To: Kelly Stroebel <KStroebel@csir.co.za>
Date: 21/09/2017 13:19
Subject: RE: juwi Skeerhok PV projects; release of DSR's for public comment
Attachments: Solar Park footprint corners.xls; Pylon Geographic co ordinates.xls

Your enquiry regarding approval from the SACAA with regard to PV farms refers.
There is a SACAA process whereby permission is applied for wrt obstacles which could pose an aviation hazard. More information can be obtained at http://www.caa.co.za. Click on information for industry 'Obstacles' on the LHS. Forms, Part 139-27 and submit on the form itself.

· Kindly provide a .kml (Google Earth) file reflecting the footprint of the proposed development site including the proposed overhead electric power line route that will evacuate the generated power to the national grid.

· Also indicate the highest structure of the project & the Overhead electric power transmission line.

· Note that there may be other wind farms and PV farms in the area. Unique names are preferable.

· Please always use the proposed PV farm name in the Subject box when corresponding via email with this office and indicate the name & address which should appear on the CAA approval/decline letter.

· There is an assessment fee of R820 per application.
· For billing purposes: company name VAT nr. and postal details.
· Kindly ensure that all the above data is forwarded. Incomplete data causes unnecessary delays.

Kind regards

Lizell Stroh
Obstacle Inspector
PANS-OPS (Procedures for Air Navigation Services-Aircraft Operations)
Air Navigation Services
Tel: 011 545 1232 | Fax: 011 545 1451 | Email: strohl@caa.co.za<mailto:strohl@caa.co.za> | www.caa.co.za

From: "Marina Lourens Transnet Freight Rail" <Marina.Lourens@transnet.net>
To: Kelly Stroebel <KStroebel@csir.co.za>
Date: 22/09/2017 08:38
Subject: FW: juwi Skeerhok PV projects; release of DSR's for public comment
Attachments: Scoping Locality Map_PV AREA 1 (new corridor).tif

[The e-mail server of the sender could not be verified (SPF Record)]

Hi Kelly

Please see mail below from Johannes Hanekom

Thanks

From: Johannes Hanekom *Transnet Property CPT
Sent: 21 September 2017 10:48 AM
To: Marina Lourens Transnet Freight Rail <Marina.Lourens@transnet.net>
Cc: Burton Siljeur *Transnet Property CPT <Burton.Siljeur@transnet.net>
Subject: FW: juwi Skeerhok PV projects; release of DSR's for public comment

Hi Marina

It seems that the Sishen - Saldanha Iron Ore line (between Kenhardt – Rugseer) will not be directly affected by this proposal.

This office in principle has no objection to the proposed application.

With thanks.

Regards

[Jaco Hanekom]

From: John Geeringh <GeerinJH@eskom.co.za>
To: Kelly Stroebel <KStroebel@csir.co.za>
Date: 28/09/2017 13:20
Subject: RE: juwi Skeerhok PV projects; release of DSR's for public comment
Attachments: Eskom requirements for work in or near Eskom servitudes SOLAR (3).doc; Renewable Energy Generation Plant Setbacks to Eskom Infrastructure - Signed.pdf

[The e-mail server of the sender could not be verified (SPF Record)]

Please find attached Eskom requirements for works at or near Eskom infrastructure. Please send me

KMZ files of the development and proposed grid connection when available.

Regards
John Geeringh (Pr Sci Nat)
Senior Consultant Environmental Management
Eskom: GC Land Development
D1 Y39
Megawatt Park
P O Box 1091
Johannesburg
2000

Tel: 011 516 7233
Fax: 086 661 4064
Cell: 083 632 7663
E-mail: john.geeringh@eskom.co.za

Eskom requirements for work in or near Eskom servitudes.

1. Eskom's rights and services must be acknowledged and respected at all times.

2. Eskom shall at all times retain unobstructed access to and egress from its servitudes.

3. Eskom's consent does not relieve the developer from obtaining the necessary statutory, land owner or municipal approvals.

4. Any cost incurred by Eskom as a result of non-compliance to any relevant environmental legislation will be charged to the developer.

5. If Eskom has to incur any expenditure in order to comply with statutory clearances or other regulations as a result of the developer's activities or because of the presence of his equipment or installation within the servitude restriction area, the developer shall pay such costs to Eskom on demand.

6. The use of explosives of any type within 500 metres of Eskom's services shall only occur with Eskom's previous written permission. If such permission is granted the developer must give at least fourteen working days prior notice of the commencement of blasting. This allows time for arrangements to be made for supervision and/or precautionary instructions to be issued in terms of the blasting process. It is advisable to make application separately in this regard.

7. Changes in ground level may not infringe statutory ground to conductor clearances or statutory visibility clearances. After any changes in ground level, the surface shall be rehabilitated and stabilised so as to prevent erosion. The measures taken shall be to Eskom's satisfaction.

8. Eskom shall not be liable for the death of or injury to any person or for the loss of or damage to any property whether as a result of the encroachment or of the use of the servitude area by the developer, his/her agent, contractors, employees, successors in title, and assignees. The developer indemnifies Eskom against loss, claims or damages including claims pertaining to consequential damages by third parties and whether as a result of damage to or interruption of or interference with Eskom's services or apparatus or otherwise. Eskom will not be held responsible for damage to the developer's equipment.

9. No mechanical equipment, including mechanical excavators or high lifting machinery, shall be used in the vicinity of Eskom's apparatus and/or services, without prior written permission having been granted by Eskom. If such permission is granted the developer must give at least seven working days' notice prior to the commencement of work. This allows time for arrangements to be made for supervision and/or precautionary instructions to be issued by the relevant Eskom Manager

   Note: Where and electrical outage is required, at least fourteen work days are required to arrange it.

10. Eskom's rights and duties in the servitude shall be accepted as having prior right at all times and shall not be obstructed or interfered with.

11. Under no circumstances shall rubble, earth or other material be dumped within the servitude restriction area. The developer shall maintain the area concerned to Eskom's satisfaction. The developer shall be liable to Eskom for the cost of any remedial action which has to be carried out by Eskom.

12. The clearances between Eskom's live electrical equipment and the proposed construction work shall be observed as stipulated by *Regulation 15* of the *Electrical Machinery Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).*

13. Equipment shall be regarded electrically live and therefore dangerous at all times.

14. In spite of the restrictions stipulated by Regulation 15 of the Electrical Machinery Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), as an additional safety precaution, Eskom will not approve the erection of houses, or structures occupied or frequented by human beings, under the power lines or within the servitude restriction area.

15. Eskom may stipulate any additional requirements to highlight any possible exposure to Customers or Public to coming into contact or be exposed to any dangers of Eskom plant.

16. It is required of the developer to familiarise himself with all safety hazards related to Electrical plant.

17. Any third party servitudes encroaching on Eskom servitudes shall be registered against Eskom's title deed at the developer's own cost. If such a servitude is brought into being, its

existence should be endorsed on the Eskom servitude deed concerned, while the third party's servitude deed must also include the rights of the affected Eskom servitude.

John Geeringh (Pr Sci Nat)
Senior Consultant Environmental Management
*Eskom GC: Land Developmen*t

Eskom	SCOT	Technology

Title: **Renewable Energy Generation Plant Setbacks to Eskom Infrastructure**	Unique Identifier:	**240-65559775**
	Alternative Reference Number:	**N/A**
	Area of Applicability:	**Power Line Engineering**
	Documentation Type:	**Guideline**
	Revision:	**0**
	Total Pages:	**8**
	Next Review Date:	**N/A**
	Disclosure Classification:	**CONTROLLED DISCLOSURE**

Compiled by	Approved by	Authorised by
J W Chetty	**V Naidoo**	**R A Vajeth**
Mechanical Engineer	**Chief Engineer (Lines)**	**Acting Snr Manager (Lines)**
Date: 20/02/2014	Date: 24/02/2014	Date: 27/2/2014

Supported by SCOT/SC

R Vajeth

SCOT/SC/ Chairperson

Date: 27/2/2014

PCM Reference: 240-65132732 **LINE ENGINEERING SERVICES**
SCOT Study Committee Number/Name : **OVERHEAD LINES**

CONTENTS

FIGURES

EXECUTIVE SUMMARY

In recent decades, the use of wind turbines, concentrated solar plants and photovoltaic plants have been on the increase as it serves as an abundant source of energy. This document specifies setbacks for wind turbines and the reasons for these setbacks from infrastructure as well as setbacks for concentrated solar plants and photovoltaic plants. Setbacks for wind turbines employed in other countries were compared and a general setback to be used by Eskom was suggested for use with wind turbines and other renewable energy generation plants.

1. INTRODUCTION

During the last few decades, a large amount of wind turbines have been installed in wind farms to accommodate for the large demand of energy and depleting fossil fuels. Wind is one of the most abundant sources of renewable energy. Wind turbines harness the energy of this renewable resource for integration in electricity networks. The extraction of wind energy is its primary function and thus the aerodynamics of the wind turbine is important. There are many different types of wind turbines which will all exhibit different wind flow characteristics. The most common wind turbine used commercially is the Horizontal Axis Wind Turbine. Wind flow characteristics of this turbine are important to analyse as it may have an effect on surrounding infrastructure.

Wind turbines also cause large turbulence downwind that may affect existing infrastructure. Debris or parts of the turbine blade, in the case of a failure, may be tossed behind the turbine and may lead to damage of infrastructure in the wake path.

This document outlines the minimum distances that need to be introduced between a wind turbine and Eskom infrastructure to ensure that debris and / or turbulence would not negatively impact on the infrastructure.

Safety distances of wind turbines from other structures as implemented by other countries were also considered and the reasons for their selection were noted.

Concentrated solar plants and photovoltaic plants setbacks away from substations were also to be considered to prevent restricting possible power line access routes to the substation.

2. SUPPORTING CLAUSES

2.1 SCOPE

This document provides guidance on the safe distance that a wind turbine should be located from any Eskom power line or substation. The document specifies setback distances for transmission lines (220 kV to 765 kV), distribution lines (6.6 kV to 132 kV) and all Eskom substations. Setbacks for concentrated solar plants and photovoltaic plants are also specified away from substations.

2.1.1 Purpose

Setbacks for wind turbines and power lines / substations are required for various reasons. These include possible catastrophic failure of the turbine blade that may release fragments and which may be thrown onto nearby power lines that may result in damage with associated unplanned outages. Turbulence behind the turbine may affect helicopter flight during routine Eskom live line maintenance and

inspections that may lead to safety risk of the aircraft / personnel. Concentrated solar plants and photovoltaic plants setback away from substations were required to prevent substations from being boxed in by these renewable generation plants limiting line route access to the substations.

2.1.2 Applicability

This document is applicable to the siting of all new and existing wind turbines, concentrated solar plants and photovoltaic plants near power lines and substations.

2.2 NORMATIVE/INFORMATIVE REFERENCES

2.2.1 Normative

1. http://www.envir.ee/orb.aw/class=file/action=preview/id=1170403/Hiiumaa+turbulence+impact+EMD.pdf.
2. http://www.energy.ca.gov/2005publications/CEC-500-2005-184/CEC-500-2005-184.PDF
3. http://www.adamscountywind.com/Revised%20Site/Windmills/Adams%20County%20Ordinance/Adams%20County%20Wind%20Ord.htm
4. http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=PA11R&RE=1&EE=1
5. http://www.wind-watch.org/documents/european-setbacks-minimum-distance-between-wind-turbines-and-habitations/
6. http://www.publications.parliament.uk/pa/ld201011/ldbills/017/11017.1-i.html
7. http://www.caw.ca/assets/pdf/Turbine_Safety_Report.pdf
8. Rogers J, Slegers N, Costello M. (2011) A method for defining wind turbine setback standards. Wind energy 10.1002/we.468

2.2.2 Informative

None

2.3 DEFINITIONS

Definition	Description
Setback	The minimum distance between a wind turbine and boundary line/dwelling/road/infrastructure/servitude etc.
Flicker	Effect caused when rotating wind turbine blades periodically cast shadows
Tip Height	The total height of the wind turbine ie. Hub height plus half rotor diameter (see Figure1)

2.3.1 Disclosure Classification

Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

2.4 ABBREVIATIONS

Abbreviation	Description
None	

2.5 ROLES AND RESPONSIBILITIES

All personnel involved in the positioning wind turbines, concentrated solar plants and photovoltaic plants near power lines/substations must follow the setbacks outlined in this guideline.

2.6 PROCESS FOR MONITORING

Approval by Eskom in writing.

2.7 RELATED/SUPPORTING DOCUMENTS

None

3. DOCUMENT CONTENT

3.1 INTERNATIONAL SETBACK COMPARISON

Wind Turbine setbacks employed by various countries were considered. It was found that setbacks were determined for various reasons that include noise, flicker, turbine blade failure and wind effects. The distances (setbacks) varied based on these factors and were influenced by the type of infrastructure

Wind turbine setbacks varied for roads, power lines, dwellings, buildings and property and it was noted that the largest setbacks were employed for reasons of noise and flicker related issues [1-7]. Very few countries specified setbacks for power lines.

The literature survey [1-7], yielded information about studies and experiments were conducted to determine the distance that a broken fragment from a wind turbine might be thrown. Even though of low probability of hitting a power line [5.0×10^{-5} [8]], the distances recorded were significant [750m [8]]

Setbacks were thus introduced to prevent any damage to Eskom infrastructure.

Wind turbines may also cause changes in wind patterns with turbulent effects behind the hub. These actors dictate the wind turbine setbacks specified in this document.

Concentrated solar plants and photovoltaic plants also can limit access into the substation for power lines of all voltages. A setback distance must therefore be employed to prevent the substation from being boxed in by these generation plants. These setback distances are specified in this document.

3.2 ESKOM REQUIRED SETBACKS

- Eskom requires a setback distance of 3 times the tip height of the wind turbine from the edge of the closest Eskom servitude (including vacant servitudes) for transmission lines.
- Eskom requires a setback distance of 1 times the tip height of the wind turbine from the edge of the closest Eskom servitude (including vacant servitudes) for distribution Lines.
- Eskom must be informed of any proposed wind turbine, concentrated solar plants and photovoltaic activity within a 5 km radius of a substation. No wind turbine structure shall be built within a 2 km radius of the closest point of the substation. Where concentrated solar plants and photovoltaic structures fall within a 2 km radius of the closest point of a substation, Eskom should be informed in writing during the planning phase of the construction of such plant or structure.
- Applicants must show that Eskom radio telecommunication systems (mainly microwave systems) will not be affected in any way by wind turbines.

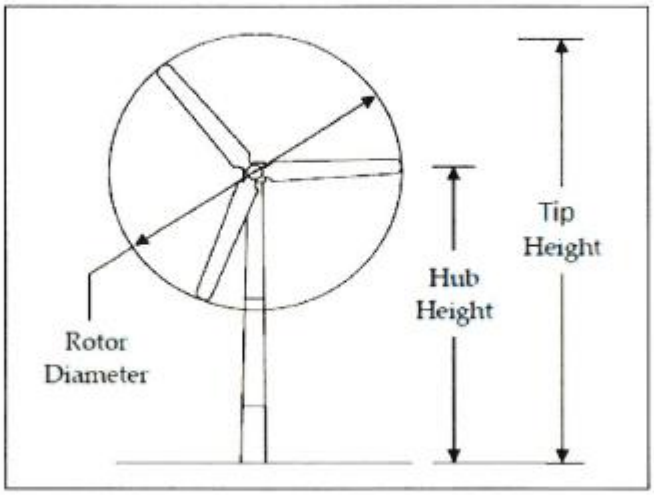


Figure 1: Horizontal Axis Wind Turbine [2]

4. AUTHORISATION

This document has been seen and accepted by:

Name & Surname	Designation
V Naidoo	Chief Engineer
Dr P H Pretorius	Electrical Specialist
J Geeringh	Snr Consultant Environ Mngt
B Haridass	Snr Consultant Engineer
R A Vajeth	Acting Snr Manager (Lines)

5. REVISIONS

Date	Rev.	Compiler	Remarks
November 2013	0	J W Chetty	First Publication - No renewable energy generation plant setback specification in existence

6. DEVELOPMENT TEAM

The following people were involved in the development of this document:

Jonathan W Chetty (Mechanical Engineer)

Vivendhra Naidoo (Chief Engineer)

Dr Pieter H Pretorius (Electrical Specialist)

John Geeringh (Snr Consultant Environ Mngt)

Bharat Haridass (Snr Consultant Engineer)

Riaz A Vajeth (Acting Snr Manager (Lines))

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Ms Kelly Stroebel
Council for Scientific and Industrial Research (CSIR)
PO Box 320
STELLENBOSCH
7599

Telephone Number: (021) 888 2432
Email Address: kstroebel@csir.co.za

PER E-MAIL / MAIL

Dear Ms Stroebel

COMMENTS ON THE DRAFT SCOPING REPORT FOR THE PROPOSED 100MW SKEERHOK 3 PHOTOVOLTAIC SOLAR ENERGY FACILITY ON PORTION 0 OF THE FARM SMUTSHOEK NO. 395 NORTH-EAST OF THE TOWN OF KENHARDT WITHIN THE IKHEIS LOCAL MUNICIPALITY IN THE NORTHERN CAPE PROVINCE

The draft Scoping Report (SR) dated September 2017 and received by this Department on 19 September 2017 refers.

This Department has the following comments on the abovementioned application:

i. Please ensure that all relevant listed activities are applied for, are specific and that it can be linked to the development activity or infrastructure as described in the project description.
ii. If the activities applied for in the application form differ from those mentioned in the final SR, an amended application form must be submitted. Please note that the Department's application form template has been amended and can be downloaded from the following link https://www.environment.gov.za/documents/forms.
iii. The final SR must provide evidence that all relevant and identified competent authorities have been given an opportunity to comment on the proposed development.
iv. Please ensure that all issues raised and comments received during the circulation of the SR from registered I&APs and organs of state which have jurisdiction (including this Department's Biodiversity Section) in respect of the proposed activity are adequately addressed in the final SR. Proof of correspondence with the various stakeholders must be included in the final SR. Should you be unable to obtain comments, proof should be submitted to the Department of the attempts that were made to obtain comments. The Public Participation Process must be conducted in terms of Regulation 39, 40 41, 42, 43 and 44 of the EIA Regulations 2014, as amended.
v. Please provide a description of any identified alternatives for the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives will have on the environment and on the community that may be affected by the activity as per Appendix 2 of the EIA Regulations, 2014, as amended. Alternatively, you should submit written proof of an investigation and motivation if no reasonable or feasible alternatives exist in terms of Appendix 2.

vi. It is noted that the following activities that occur within watercourses have been applied for: G.NR. 983 Activities 12(x) and (xii); and 19(i). A separate hydrological assessment to assess the impacts on the surface hydrology of the proposed development area is required. The hydrological assessment to be conducted must assess, *inter alia* the following:
- Identification and sensitivity rating of all surface water courses for the impact phase of the proposed development;
- Identification, assessment of all potential impacts to the water courses and suggestion of mitigation measures; and,
- Recommendations on the preferred placement of the facility and all associated infrastructure and preference must be provided to the avoidance of the watercourses on the property.

vii. The study area falls within the ambit of the Square Kilometre Array - South Africa. The impacts associated with radio frequency interference on the SKA must form part of the environmental impact assessment. The Department notes that the EAP and applicant have initiated engagements with the SKA-SA on this matter. The Department urges the EAP to ensure that the ToR for the study, should there be one necessary, be included in the final scoping report.

viii. The Department notes that the EAP recommends that full specialist studies not be conducted during the EIA process for impacts associated with: palaeontology, agriculture, social and traffic. The Department requires that a suitably qualified specialist provide an environmental impact statement in this regard. The impact statement must also advise on cumulative impacts as a result of the above-mentioned impacts.

ix. You are hereby advised that the final SR must provide the names of the specialists that will conduct the various studies as outlined in the PoSEIA.

x. The EAP must ensure that the terms of reference for all the identified specialist studies must include the following:
- A detailed description of the study's methodology; indication of the locations and descriptions of the development footprint, and all other associated infrastructures that they have assessed and are recommending for authorisations.
- Provide a detailed description of all limitations to the studies. All specialist studies must be conducted in the right season and providing that as a limitation will not be allowed.
- Please note that the Department considers a 'no-go' area, as an area where no development of any infrastructure is allowed; therefore, no development of associated infrastructure including access roads and internal cables is allowed in the 'no-go' areas.
- Should the specialist definition of 'no-go' area differ from the Department's definition; this must be clearly indicated. The specialist must also indicate the 'no-go' areas buffer if applicable.
- All specialist studies must be final, and provide detailed/practical mitigation measures and recommendations, and must not recommend further studies to be completed post EA.
- Clearly defined cumulative impacts and where possible the size of the identified impact must be quantified and indicated, i.e. hectares of cumulatively transformed land.
- A detailed process flow to indicate how the specialist's recommendations, mitigation measures and conclusions from the various similar developments in the area were taken into consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project.
- Identified cumulative impacts associated with the proposed development must be rated with the significance rating methodology approved with the acceptance of the scoping report.
- The significance rating must also inform the need and desirability of the proposed development.
- A cumulative impact environmental statement on whether the proposed development must proceed.

xi. Should the appointed specialists specify contradicting recommendations, the EAP must clearly indicate the most reasonable recommendation and substantiate this with defendable reasons; and were necessary, include further expertise advice.

xii. Where specialist studies are conducted in-house or by a specialist other than a suitably qualified specialist in the relevant field, such specialist reports must be peer reviewed by a suitably qualified external specialist in the relevant field. The terms of reference for the peer review must include:
- A CV clearly showing expertise of the peer reviewer;

- Acceptability of the terms of reference;
- Is the methodology clearly explained and acceptable;
- Evaluate the validity of the findings (review data evidence);
- Discuss the suitability of the mitigation measures and recommendations;
- Identify any short comings and mitigation measures to address the short comings;
- Evaluate the appropriateness of the reference literature;
- Indicate whether a site-inspection was carried out as part of the peer review; and
- Indicate whether the article is well-written and easy to understand.

xiii. In terms of Appendix 2 of the EIA Regulations, 2014, as amended, the report must include an undertaking under oath or affirmation by the EAP in relation to:
- the correctness of the information provided in the reports;
- the inclusion of comments and inputs from stakeholders and I&APs;
- the inclusion of inputs and recommendations from the specialist reports where relevant;
- any information provided by the EAP to I&APs; and
- responses by the EAP to comments or inputs made by I&APs.

xiv. The affirmation of oath by the EAP must be witnessed and signed by a commissioner of oath.

xv. In accordance with Appendix 2 of the EIA Regulations 2014, as amended, the details of—
(i) the EAP who prepared the report; and
(ii) the expertise of the EAP to carry out Scoping and Environmental Impact assessment procedures;
must be submitted.

xvi. You are further reminded that the final SR to be submitted to this Department must comply with all the requirements in terms of the scope of assessment and content of scoping reports in accordance with Appendix 2 and Regulation 21(1) of the EIA Regulations, 2014, as amended.

Further note that in terms of Regulation 45 of the EIA Regulations 2014, as amended, this application will lapse if the applicant fails to meet any of the timeframes prescribed in terms of the these Regulations, unless an extension has been granted in terms of Regulation 3(7).

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No 107 of 1998, as amended, that no activity may commence prior to an environmental authorisation being granted by the Department.

Yours faithfully

Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Signed by: Mr Coenrad Agenbach
Designation: Deputy Director: Strategic Infrastructure Developments
Date: 19/10/2017

cc:	C Forster	Juwi Renewable Energies (Pty) Ltd	Email: cleo.forster@juwi.co.za

Note: No comments for Skeerhok PV3 were sent to the EAPs from DEA's Biodiversity Directorate

FINAL SCOPING REPORT

Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

APPENDIX H:

Comments and Responses

COMMENTS AND RESPONSES

This chapter presents the approach to evaluating the issues raised during the Scoping Phase and provides a summary of all issues which have been raised by I&APs and Organs of State.

IDENTIFICATION OF ISSUES

An important element of the Scoping Process is to evaluate the issues raised through the Scoping interactions with authorities, the public, the specialists on the EIA team and the project proponent. In accordance with the philosophy of Integrated Environmental Management, it is important to focus the EIA on the key issues, such as those issues that are considered critical for decision-making on the EA.

To assist in the identification of key issues, a decision-making process is applied to the issues raised, based on the following criteria:

- Whether or not the issue falls within the scope and responsibility of the proposed project; and
- Whether or not sufficient information is available to respond to the issue raised without further specialist investigation.

Issues were sourced by the EIA team from the following Scoping interactions:

- **Newspaper Advertisement** - In order to inform the public of the proposed project and invite members of the public to register as I&APs, and to inform the EIA consultant about specific issues or interests in the proposed project, the proposed Solar PV projects and EIA Processes were advertised in one local newspaper (i.e. "Gemsbok") on the 4th October 2017 (the newspaper is dated 6th October, but was distributed on 4th October 2017) during the Scoping Phase. A copy of the newspaper advertisement is included in Appendix D of this Scoping Report.
- **Site Notices** – site notices describing the project as well as the contact details of the EAP were placed at several locations on site and nearby, as seen in Appendix F.
- **Email** - Issues were sent to the CSIR via email correspondence during the 30-day review of the Scoping Report.

All comments received during the 30-day review of the Scoping Report for I&AP review are included in the Comments and Responses Table below, as well as in Appendix G of the Scoping Report.
Section 7.2 below provides a summary of the comments received following the release of the Scoping Report for the 30-day review period

The tables below summarise the comments and/or issues raised following the release of the Draft Scoping Report for I&AP review, together with a response from the EIA team. Copies of the comments received are included in **Appendix G** of this Scoping Report. A synthesis of issues to be addressed in the Specialist Studies is provided in the Plan of Study for EIA (Chapter 7). The results of the Specialist Studies will be made available to I&APs for comment as part of the PPP undertaken for the EIA Report.

Table: Comments received following the release of the Scoping Report for the 30-day review period, together with the response from the EIA team

*Please note that the comments are taken verbatim from the comments provided by Interested and Affected Parties

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
1.	Due to short notice, there is not enough time to go through the documentation. However, I would like to highlight some aspects that must be considered and responded to: 1. Should any impact occur within a CBA area (2017 version) within the Northern Cape, it will trigger a biodiversity offset. Accordingly, a biodiversity status assessment report must be prepared as well for consideration. 2. Confirmation must be obtained from SKA that the development planned will not negatively effect SKA activities or plans, nor will it be within their declared spatial area declared in Government Gazette.	Elsabe Swart, Northern Cape Department of Tourism, Environment and Conservation	20 September 2017, Email	**CSIR:** **Thank you for your comments.** Please see responses below numbered according to your comment: **1.** Thank you for noting this, however, the project does not fall within a CBA. The full ecological impact assessment will be included in the EIAR and will include any biodiversity impacts, should there be any. **2.** Please see **Chapter 7, Section 7.8.6** for the Terms of Reference for the SKA RFI study that has been undertaken. The full results of which will be included in the EIAR and a comment from the SKA on the development included. *Note: Comment was also responded to by the EAP via email on 27/10/2017*
2.	Please note that the applications for EA as well as the Draft Scoping Report will only be acknowledged upon receipt and after the application was screened and a reference number is allocated.	EIA Admin, National Department of Environmental Affairs	20 September 2017, Email	**CSIR:** This has been noted, thank you.

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
	Note that applications will only be accepted at Reception during DEA official office hours. The documents was however received by the Department.			
3.	The Department confirms having received the application for Environmental Authorisation and Draft Scoping Report for the abovementioned project on 19 September 2017. You have submitted these documents to comply with the Environmental Impact Assessment (EIA) Regulations, 2014, as amended. Please take note of Regulation 40(30) of the EIA Regulations, 2014, as amended, which states that potential Interested & Affected Parties, including the Competent Authority, may be provided with an opportunity to comment on reports and plans contemplated in Regulation 40(1) of the EIA Regulations, 2014, as amended, prior to the submission of an application but must be provided an opportunity to comment on such reports once an application has been submitted to the Competent Authority. Note that in terms of Regulation 45 of the EIA Regulations, 2014, as amended, this application will lapse if the applicant fails to meet any of the time-frames prescribed in terms of these Regulations, unless an extension has been granted by the Department in terms of Regulation 3(7) of the EIA Regulations, 2014, as amended.	Mr Sabelo Malaza, National Department of Environmental Affairs	21 September 2017, Email	**CSIR:** Thank you for taking the time to acknowledge the application and the recommended actions will be undertaken accordingly.

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
	You are hereby reminded of Section 24F of the National Environmental Management Act, Act No. 107 of 1998, as amended, that no activity may commence prior to an Environmental Authorisation being granted by the Department.			
4.	Can you please send me the KMZ links for the 3x proposed project sites and power corridor to the sub station.	Claude Bosman, Veroniva (Pty) Ltd - Energy	21 September 2017, Email	**CSIR:** The KMZ links were sent through to the commentator on 21/09/2017 via email and receipt acknowledged.
	Your enquiry regarding approval from the SACAA with regard to PV farms refers. There is a SACAA process whereby permission is applied for wrt obstacles which could pose an aviation hazard. More information can be obtained at http://www.caa.co.za. Click on information for industry 'Obstacles' on the LHS. Forms, Part 139-27 and submit on the form itself. • Kindly provide a .kml (Google Earth) file reflecting the footprint of the proposed development site including the proposed overhead electric power line route that will evacuate the generated power to the national grid. • Also indicate the highest structure of the project & the Overhead electric power transmission line. • Note that there may be other wind farms and PV farms in the area. Unique names are	Lizell Stroh, South African Civil Aviation Authority	21 September 2017, Email	**CSIR:** Thank you for this comment. An application to SACAA and proof thereof will be done in the EIA phase. *Note: Comment was also responded to by the EAP via email on 27/10/2017*

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
	preferable. • Please always use the proposed PV farm name in the Subject box when corresponding via email with this office and indicate the name & address which should appear on the CAA approval/decline letter. • There is an assessment fee of R820 per application. • For billing purposes: company name VAT nr. and postal details. • Kindly ensure that all the above data is forwarded. Incomplete data causes unnecessary delays.			
5.	It seems that the Sishen – Saldanha Iron Ore line (between Kenhardt – Rugseer) will not be directly affected by this proposal. This office in principle has no objection to the proposed application.	Jaco Hanekom, Transnet	22 September 2017, Email	**CSIR:** Thank you for this comment it is noted. *Note: Comment was also responded to by the EAP via email on 27/10/2017*
6.	Please find attached Eskom requirements for works at or near Eskom infrastructure. Please send me KMZ files of the development and proposed grid connection when available.	John Geeringh, Eskom	28 September 2017, Email	**CSIR:** Thank you for these requirements, they will be incorporated into the project design as well as the impact assessment. *Note: Comment was also responded to by the EAP via email on 27/10/2017*

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
				KMZ files were sent to the commentator on 10/10/2017 and acknowledgement of receipt email was received by CSIR.
7.	This Department has the following comments on the abovementioned application: **i.** Please ensure that all relevant listed activities are applied for, are specific and that it can be linked to the development activity or infrastructure as described in the project description. **ii.** If the activities applied for in the application form differ from those mentioned in the final SR, an amended application form must be submitted. Please note that the Department's application form template has been amended and can be downloaded from the following link https://www.environment.gov.za/documents/forms. **iii.** The final SR must provide evidence that all relevant and identified competent authorities have been given an opportunity to comment on the proposed development. iv. Please ensure that all issues raised and comments received during the circulation of the SR from registered I&APs and organs of state which have jurisdiction (including this Department's Biodiversity Section) in respect of the proposed activity are adequately addressed in the final SR. Proof of correspondence with the various stakeholders must be	Sabelo Malaza, National Department of Environmental Affairs	19 October 2017, Email and Post	**CSIR:** Thank you for your comments, please see responses below as per your corresponding numbering: i. This is noted and agreed. ii. This is noted and agreed. iii. Please see Appendix E for proof of correspondence to I&APs, Appendix C for the I&AP database and Appendix G for copies of the comments from I&APs. Please note that an application for this project has been created on SAHRIS (including the report attached as Appendix K), with the **Case ID: 11818.** No comments had been received by SAHRA at the date of submission of the FSR. iv. Please see response above. All comments have been responded to in this Appendix. v. Please see Chapter 5 for a description of any identified alternatives for the proposed activity that are feasible and reasonable, as per Appendix 2 of the EIA Regulations, 2014, as amended.

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
	included in the final SR. Should you be unable to obtain comments, proof should be submitted to the Department of the attempts that were made to obtain comments. The Public Participation Process must be conducted in terms of Regulation 39, 40 41, 42, 43 and 44 of the EIA Regulations 2014, as amended. **v.** Please provide a description of any identified alternatives for the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives will have on the environment and on the community that may be affected by the activity as per Appendix 2 of the EIA Regulations, 2014, as amended. Alternatively, you should submit written proof of an investigation and motivation if no reasonable or feasible alternatives exist in terms of Appendix 2. **vi.** It is noted that the following activities that occur within watercourses have been applied for: G.NR. 983 Activities 12(x) and (xii); and 19(i). A separate hydrological assessment to assess the impacts on the surface hydrology of the proposed development area is required. The hydrological assessment to be conducted must assess, inter alia the following: ➢ Identification and sensitivity rating of all surface water courses for the impact phase of the proposed development; ➢ Identification, assessment of all potential impacts to the water courses and suggestion of mitigation measures; and,			vi. A hydrological comment has been included in Chapter 3, Section 3.3.8 Aquatic Environment (Surface Water, Drainage, and Wetland Ecosystems). A full hydrological study will be included in the EIAR. vii. Please see **Chapter 7, Section 7.8.6** for the ToR's of the SKA RFI Study. The full study and SKA engagement will be included in the EAIR. viii. Please see **Chapter 6** for confirmation that impact statements will be done in the EIAR using existing information in the area for the following: social, agricultural, traffic. With regards to palaeontology, this will be assessed as part of the Heritage/Archaeology study in the EIA phase. Chapter 6 has been updated to reflect this information. ix. Please see **Chapter 1- EIA Team** for the inclusion of the names of the specialists. x. Please see **Chapter 7, section 7.8** for the updated ToR's as per this comment. xi. This is noted and agreed. xii. This is noted and will be abided to if applicable. xiii. Please see **Appendix B** for the EAP

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
	➢ Recommendations on the preferred placement of the facility and all associated infrastructure and preference must be provided to the avoidance of the watercourses on the property. **vii.** The study area falls within the ambit of the Square Kilometre Array - South Africa. The impacts associated with radio frequency interference on the SKA must form part of the environmental impact assessment. The Department notes that the EAP and applicant have initiated engagements with the SKA-SA on this matter. The Department urges the EAP to ensure that the ToR for the study, should there be one necessary, be included in the final scoping report. **viii.** <u>The Department notes that the EAP recommends that full specialist studies not be conducted during the EIA process for impacts associated with: palaeontology, agriculture, social and traffic. The Department requires that a suitably qualified specialist provide an environmental impact statement in this regard. The impact statement must also advise on cumulative impacts as a result of the above-mentioned impacts.</u> **ix.** You are hereby advised that the final SR must provide the names of the specialists that will conduct the various studies as outlined in the PoSEIA. **x.** The EAP must ensure that the terms of reference for all the identified specialist studies must include the following:			declaration under oath. xiv. Please see **Chapter 1, Section 1.6** and **Appendix A.** xv. Please see **Chapter 1, Table 1.6** for a checklist of requirements of a Scoping Report as defined in terms of Appendix 2 of GN R326. xvi. This is noted. *Note: Comment was also responded to by the EAP via email on 27/10/2017*

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
	➢ A detailed description of the study's methodology; indication of the locations and descriptions of the development footprint, and all other associated infrastructures that they have assessed and are recommending for authorisations. ➢ Provide a detailed description of all limitations to the studies. All specialist studies must be conducted in the right season and providing that as a limitation will not be allowed. ➢ Please note that the Department considers a 'no-go' area, as an area where no development of any infrastructure is allowed; therefore, no development of associated infrastructure including access roads and internal cables is allowed in the 'no-go' areas. ➢ Should the specialist definition of 'no-go' area differ from the Department's definition; this must be clearly indicated. The specialist must also indicate the 'no-go' areas buffer if applicable. ➢ All specialist studies must be final, and provide detailed/practical mitigation measures and recommendations, and must not recommend further studies to be completed post EA. ➢ Clearly defined cumulative impacts and where possible the size of the identified impact must be quantified and indicated, i.e. hectares of cumulatively transformed land. ➢ A detailed process flow to indicate how the specialist's recommendations, mitigation measures and conclusions from the various similar developments in the area were taken into			

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
	consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project. ➢ Identified cumulative impacts associated with the proposed development must be rated with the significance rating methodology approved with the acceptance of the scoping report. ➢ The significance rating must also inform the need and desirability of the proposed development. ➢ A cumulative impact environmental statement on whether the proposed development must proceed. **xi.** Should the appointed specialists specify contradicting recommendations, the EAP must clearly indicate the most reasonable recommendation and substantiate this with defendable reasons; and where necessary, include further expertise advice. **xii.** Where specialist studies are conducted in-house or by a specialist other than a suitably qualified specialist in the relevant field, such specialist reports must be peer reviewed by a suitably qualified external specialist in the relevant field. The terms of reference for the peer review must include: ➢ A CV clearly showing expertise of the peer reviewer; ➢ Acceptability of the terms of reference; ➢ Is the methodology clearly explained and acceptable; ➢ Evaluate the validity of the findings (review data			

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
	evidence); ➢ Discuss the suitability of the mitigation measures and recommendations; ➢ Identify any short comings and mitigation measures to address the short comings; ➢ Evaluate the appropriateness of the reference literature; ➢ Indicate whether a site-inspection was carried out as part of the peer review; and ➢ Indicate whether the article is well-written and easy to understand. **xiii.** In terms of Appendix 2 of the EIA Regulations, 2014, as amended, the report must include an undertaking under oath or affirmation-by the EAP in relation to: - the correctness of the information provided in the reports; - the inclusion of comments and inputs from stakeholders and I&APs; - the inclusion of inputs and recommendations from the specialist reports where relevant; - any information provided by the EAP to I&APs; and - responses by the EAP to comments or inputs made by I&APs. **xiv.** The affirmation of oath by the EAP must be witnessed and signed by a commissioner of oath. **xv.** In accordance with Appendix 2 of the EIA			

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
	Regulations 2014, as amended, the details of- *(i) the EAP who prepared the report; and* *(ii) the expertise of the EAP to carry out Scoping and Environmental impact assessment procedures;* must be submitted. **xvi.** You are further reminded that the final SR to be submitted to this Department must comply with all the requirements in terms of the scope of assessment and content of scoping reports in accordance with Appendix 2 and Regulation 21(1) of the EIA Regulations, 2014, as amended. Further note that in terms of Regulation 45 of the EIA Regulations 2014, as amended, this application will lapse if the applicant fails to meet any of the timeframes prescribed in terms of the these Regulations, unless an extension has been granted in terms of Regulation 3(7). You are hereby reminded of Section 24F of the National Environmental Management Act, Act No 107 of 1998, as amended, that no activity may commence prior to an environmental authorisation being granted by the Department.			
	2. BACKGROUND AND COMMENTS ON DRAFT SCOPING REPORT The directorate: Biodiversity Conservation received and evaluated the DSR for the above mentioned project and based on the information provided, the project will	Wilma Lutsch Director: Biodiversity Conservation Department of Environmental Affairs	13 October 2017, Email	**CSIR:** **Thank you for taking the time to comment.** Please see below responses to your recommendations:

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
	have more terrestrial and aquatic ecological impacts, both during construction and operational phases. <u>Construction Phase</u> ➢ The proposed development will cause more disturbance on fauna, refugia and general change in habitat. ➢ The increased electrical light pollution will lead to changes in nocturnal behavioural patterns amongst faunal activities. ➢ Alteration in surface drainage patterns on account of construction activities will lead to rapid change in plant communities and general habitat structure both within the site and immediately adjacent to site. ➢ Alteration of surface water quality on account of construction activities will lead to changes in water chemistry. <u>Operational Phase</u> ➢ Increased shading of vegetation as a consequence of the PV arrays, will lead to changes in plant water relations and possible changes in plant community structures within the site. ➢ The fencing of the site, possibly with electric fencing, is likely to impact upon faunal behaviour, leading to the exclusion of certain species and possible mortalities. ➢ Abstraction of ground water for the cleaning of modules will alter the state of sub-surface water resources.			➢ Please see Chapter 3, Section 3.3.7 and Section 3.4 for a scoping assessment of the biodiversity concerns of the site. A full biodiversity Specialist Impact assessment will be included in the EIAR. ➢ Please see Chapter 3, Section 3.3.7 and Section 3.4 for a scoping assessment of the aquatic concerns of the site. A full biodiversity Specialist Impact assessment will be included in the EIAR. **Please see the specialist response below** **Mr. Simon Bundy:** "After site reconnaissance, the proposed development area(s) will not encroach on to any wetlands, streams or rivers. Shallow dendritic drainage features, common to the region have been identified that are related to the prevailing geology and in some cases the movement of livestock. These features lack the edaphics, morphology and botanical habitat that would identify them as riparian or aquatic in function, however they will be considered from an ecological perspective within that report during the EIA process" ➢ Please see **Chapter 7, Section 7.5** for the approach to impact assessment which follows hierarchy: (1) avoidance, (2) minimization, (3) restoration and (4) offsets. ➢ Please note that the project does not fall within a Critical Biodiversity Area. More detailed information on this can be seen in **Chapter 3, Section 3.2.**

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
	3. RECOMMENDATIONS After reviewing and evaluating the potential impacts of the project on flora and faunal species, it is recommended that the following be included in the final Scoping Report (FSR). ➢ Biodiversity Specialist Impact Assessment is recommended to be included in the FSR in order to validate the predicted impacts and significance of the Skeerhok PV 1, as well as to propose any relevant mitigation measures. ➢ Aquatic Specialist impact Assessment must be compiled and submitted during the FSR. ➢ Mitigation options must be considered in terms of the following hierarchy: (1) avoidance, (2) minimization, (3) restoration and (4) offsets. ➢ The Critical Biodiversity Areas map must be submitted indicating all efficient selection and classification of land portions requiring protection and maintenance. ➢ The cumulative impacts of the area must be assessed and included in the final Scoping phase. ➢ An EMPr with full Operational Plan as well as any additional information that is outstanding as stated in the draft scoping report should be provided. **4. CONCLUSION** The Directorate: Biodiversity Conservation has reviewed the submitted DSR and recommends that the			➢ Please note that the specialists reports which will form part of the EIAR will assess cumulative impacts. ➢ Please note EMPr with full Operational Plan will be provided in the Draft EIA report. *Note: Comment was also responded to by the EAP via email on 27/10/2017*

NO.	COMMENTS	COMMENTATOR	DATE	RESPONSE
	above mentioned recommendations be included on the final scoping phase.			

FINAL SCOPING REPORT

Scoping and Environmental Impact Assessment for the Proposed Development of a 100 MW Solar Photovoltaic Facility (SKEERHOK PV 3) on Portion 0 of the farm Smutshoek 395, north-east of Kenhardt, Northern Cape Province

APPENDIX I:

Other

Acknowledgement of Application from DEA

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447· PRETORIA · 0001· Environment House · 473 Steve Biko Road, Arcadia · PRETORIA

DEA Reference: 14/12/16/3/3/2/1035
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PER EMAIL / MAIL

Dear Sir/Madam

ACKNOWLEDGEMENT OF RECEIPT OF THE NEW APPLICATION FOR ENVIRONMENTAL AUTHORISATION (ENVIRONMENTAL IMPACT ASSESSMENT PROCESS) AND SCOPING REPORT FOR THE PROPOSED DEVELOPMENT OF A 100 MW SOLAR PHOTOVOLTAIC FACILITY (SKEERHOK PV 3) ON PORTION 0 SMUTSHOEK FARM 395, NORTH-EAST OF KENHARDT, NORTHERN CAPE PROVINCE

The Department confirms having received the Application for Environmental Authorisation and Draft Scoping Report for the abovementioned project on 19 September 2017. You have submitted these documents to comply with the Environmental Impact Assessment (EIA) Regulations, 2014, as amended.

Please take note of Regulation 40(3) of the EIA Regulations, 2014, as amended, which states that potential Interested & Affected Parties, including the Competent Authority, may be provided with an opportunity to comment on reports and plans contemplated in Regulation 40(1) of the EIA Regulations, 2014, as amended, prior to the submission of an application but must be provided an opportunity to comment on such reports once an application has been submitted to the Competent Authority.

Note that in terms of Regulation 45 of the EIA Regulations, 2014, as amended, this application will lapse if the applicant fails to meet any of the time-frames prescribed in terms of these Regulations, unless an extension has been granted by the Department in terms of Regulation 3(7) of the EIA Regulations, 2014, as amended.

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No. 107 of 1998, as amended, that no activity may commence prior to an Environmental Authorisation being granted by the Department.

Kindly quote the abovementioned reference number in any future correspondence in respect of the application.

Yours sincerely

Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Letter signed by: Ms Toinette van der Merwe
Designation: Environmental Officer: EIA Coordination, Strategic Planning and Support
Date: 21/09/2017

CC:	Cleo Forster	Juwi Renewable Energies (Pty) Ltd	Email: cleo.forster@juwi.co.za
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