# DRAFT SCOPING REPORT

**for**

## SUNVELD SOLAR PV FACILITY AND BESS

**On**

**Remaining Extent of the Farm Kruispad 120 and Remaining Extent of the Farm Doornfontein A 118**

In terms of the

National Environmental Management Act (Act No. 107 of 1998, as amended) & 2014 Environmental Impact Regulations

Prepared for Applicant: Sunveld Energy (Pty) Ltd.

Date: 15 September 2023


**Author of Report:** Dale Holder

**Author Email:** dale@cape-eaprac.co.za


**Report Reference:** BER799/03

**Department Reference:** 2023-06-0016 (Pre-Application Reference)

**Case Officer:** Mr Lunga Dlova


Cape EAPrac

Cape Environmental Assessment Practitioners

Tel: +27 44 874 0365 PO Box 2070, George 6530

Fax: +27 44 874 0432 17 Progress Street, George

www.cape-eaprac.co.za

# DOCUMENT TRACKING

## DOCUMENT HISTORY

| REVISION | DATE | AUTHOR |
|---|---|---|
| Draft Scoping Report | 15 September 2023 | Dale Holder |
| Final Scoping Report | Pending | |
| Draft Environmental Impact Report | Pending | |
| Draft Environmental Management Programme | Pending | |
| Final Environmental Impact Report | Pending | |
| Final Environmental Management Programme | Pending | |

## APPROVAL FOR RELEASE

| NAME | TITLE | SIGNATURE |
|---|---|---|
| Dale Holder | Senior Environmental Practitioner |  |

## DISTRIBUTION

| DISTRIBUTION LIST |
|---|
| Department of Forestry, Fisheries and the Environment |
| Sunveld Energy (Pty) Ltd |
| Registered and Potential Interested and Affected Parties |

## SUBMISSION AND CORRESPONDENCE WITH COMPETENT AUTHORITY

| SUBMISSION / CORRESPONDENCE | DATE |
|---|---|
| Pre Application meeting request submitted | 21 June 2023 |
| Pre Application meeting held | 03 July 2023 |
| Application form submitted | 15 September 2023 |
| Application form acknowledged | Pending |
| Draft Scoping Report submitted | 15 September 2023 |
| Draft Scoping Report acknowledged | Pending |
| Competent Authority comment on Draft Scoping Report | Pending |
| Final Scoping Report submitted | Pending |
| Final Scoping Report acknowledged | Pending |
| Competent Authority acceptance of Final Scoping Report | Pending |
| Draft Environmental Impact Report submitted | Pending |
| Draft Environmental Impact Report acknowledged | Pending |
| Competent Authority comment on Draft Environmental Report | Pending |
| Final Environmental Impact Report Submitted | Pending |

| APPOINTED ENVIRONMENTAL ASSESSMENT PRACTITIONER: |
| --- |
| Cape EAPrac Environmental Assessment Practitioners<br>PO Box 2070<br>George<br>6530<br>Tel: 044-874 0365<br>Fax: 044-874 0432<br>**Report written & compiled by:** Dale Holder (Ndip Nature Conservation), who has over 20 years' experience as an environmental practitioner.<br><br>**Registrations:** Registered Environmental Assessment Practitioner, EAPASA (2019/301) |

| PURPOSE OF THIS REPORT: |
| --- |
| I&AP Review and Comment |

| APPLICANT: |
| --- |
| Sunveld Energy (Pty) Ltd |

| CAPE EAPRAC REFERENCE NO: |
| --- |
| BER799/03 |

| DEPARTMENT REFERENCE: |
| --- |
| 2023-06-0016 (Pre-Application Reference) |

| SUBMISSION DATE: |
| --- |
| 15 September 2023 |

# DRAFT SCOPING REPORT

in terms of the

National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended) & Environmental Impact Regulations2014 (as amended)

# Sunveld Solar PV Facility and BESS

Remaining Extent of the Farm Kruispad 120 and Remaining Extent of the Farm Doornfontein A 118

Submitted for:

## Stakeholder Review & Comment




Report Issued by:

Cape Environmental Assessment Practitioners

Tel: 044 874 0365 PO Box 2070

17 Progress Street, George 6530

Web: www.cape-eaprac.co.za

# REPORT DETAILS

| | |
|---|---|
| **Title:** | Draft Scoping Report – Sunveld Solar PV Facility and BESS |
| **Purpose of this report:** | This Draft Scoping Report (DSR) is made available to all registered and potential Interested and Affected Parties (I&APs) for review and comment and all comments received will be incorporated into the Final Scoping Report that will be submitted to the competent authority for decision making / acceptance.<br><br>This DSR forms part of a series of reports and information sources that are being provided during the Scoping and Environmental Impact Reporting Process for the proposed Sunveld Solar PV Facility and BESS project near Velddrif in the Western Cape Province.<br><br>Registered I&APs will be given an opportunity to comment on the following reports as part of this environmental process:<br>- Draft Scoping Report,<br>- Draft Environmental Impact Report;<br>- All Specialist Studies, and<br>- Draft Environmental Management Programme.<br><br>In accordance with the regulations, the objectives of an environmental process are to, through a consultative process:<br>(a)identify the relevant policies and legislation relevant to the activity;<br>(b) motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;<br>(c) identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;<br>(d) 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;<br>(e) identify the key issues to be addressed in the assessment phase;<br>(f) agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and<br>(g) identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.<br><br>The Draft Scoping Report is available to all registered and potential interested and affected parties for a 30-day review and comment period extending from 15 September 2023 – 16 October 2023.<br><br>All comments received during this comment period will be incorporated into the Final Scoping Report that will be submitted to the DFFE for Decision making. |
| **Prepared for:** | Sunveld Energy (Pty) Ltd |
| **Published by:** | Cape Environmental Assessment Practitioners (Pty) Ltd. (Cape EAPrac) |
| **Authors:** | Mr Dale Holder |
| **Cape EAPrac Ref:** | BER799/03 |
| **DEA Case officer & Ref. No:** | Mr Lunga Dlova - 2023-06-0016 (Pre-application reference number) |
| **Date:** | 15 September 2023. |
| **To be cited as:** | *Cape EAPrac,* 2023. Draft Scoping Report for Sunveld Solar PV Facility and BESS. Report Reference: BER799/03. George. |

# TECHNICAL CHECKLIST

The following technical checklist is included as a quick reference roadmap for the proposed project.

| | | |
|---|---|---|
| **Administrative Details** | | |
| **Project Name** | | **Sunveld Solar PV and BESS** |
| **Applicant Details** | Applicant Name: | Sunveld Energy (Pty) Ltd<br><br>Sunveld Energy (Pty) Ltd is a Special Purpose Vehicle (SPV) incorporated for the sole purpose of developing, constructing, and operating an up to 600 MW solar PV facility including a Battery Energy Storage System (BESS) facility located on the farm Kruispad 120 and on the farm Doornfontein A 118 situated approximately 7.5 km East of Velddrif in the Western Cape Province. |
| | Company Registration Number: | 2023 / 657613 / 07 |
| | BBBEE Status: | Level 4 |
| **Site Details** | | |
| **Size of the property** | Description and Size in hectares of the affected property (Size as per the Deed is in brackets). | PV/BESS Site:<br><br>Remaining Extent of the farm Kruispad 120 : size 2684.71ha (2586.32ha)<br>Remaining Extent of the farm Doornfontein A 118: size 3801.30ha (3807.04ha)<br><br>TOTAL hectares of optioned properties = 6486.01 (6393.36ha) |
| **Size of the study area** | Size in ha of initial study area. | 2360 ha |
| **Development Footprint** | This includes the total footprint of PV panels, BESS auxiliary buildings, On-site Substation, Mini-Substations, Inverter stations and internal roads. | The Total Development area is 709 ha including:<br>- PV 666ha,<br>- BESS 29ha,<br>- 2 On-Site Substations 9ha and<br>- permanent auxiliary structures (buildings, lay-down areas and access roads) 5ha.<br>- (Mini Subs, Inverters and internal roads are distributed within the PV footprint)<br>- internal roads 4m wide total 13.5ha))<br><br>Total Fenced Area is 887 ha.<br><br>(Note: The 2 On-site Substations (these are 2 Collector and Switching Substations of 300MVA each, collecting many inputs (from PV or BESS) of 33kV, transforming to 132kV outputs) footprints are included here although they are part of the EGI too. The input of 33kV is the project-side until it is transformed to 132kV which will be part of the EGI-side. The EGI will be transferred to ESKOM. The On-site Substations will be in areas of overlap of the project development footprint and the EGI.) |
| **PV Technology Details** | | |
| **Capacity of the facility** | Capacity of the PV facility (in MW) | Net generation (contracted) capacity of up to 600 $MW_{AC}$, which will consist of 12 sites or projects that may be developed singly or in groups in a phased-development approach. Each of the 12 x 50MW sites will be self-sufficient up to the point of an On-site substation or a Collective BESS. |
| **Solar Technology selection** | Type of technology | Solar photovoltaic (PV) technology (mono-facial or bifacial) with fixed, single or double axis tracking mounting structures, as well as associated infrastructure, which will include:<br>- Laydown area;<br>- Access and Internal road network;<br>- Auxiliary buildings (33kV switch room, gate-house and security, control centre, office, warehouse, canteen & visitors centre, staff lockers etc.);<br>- Facility (IPP) substation; |

| | | |
|---|---|---|
| | | - Inverter-station, transformers and internal electrical reticulation (underground cabling);<br>- Rainwater Tanks; and<br>- Perimeter fencing and security infrastructure. |
| | Structure height | PV panels with a maximum height of ± 3m above the ground |
| | Surface area to be covered (including associated infrastructure such as roads) | 666 ha |
| | Structure orientation | Preferred technology - single axis track used in portrait orientation with strings of 1x ±30 panels. Mounting using hammered in uprights (as a worst case there will be 400mm diameter holes and some may need lateral support using pegged out cables, depending on soil type/profile).<br><br>Alternative technologies: fixed-tilt: north-facing at a defined angle of tilt, single or double axis tracking: mounted in a north-south orientation, tracking from east to west. |
| | Laydown area dimensions | Approximately 2 ha temporary laydown area will be required for each 50MW site and will be situated within the assessed footprint.<br><br>Temporary lay down area total at any one time will not exceed 10 ha due to development in stages |
| **BESS Technology Details** | | |
| **BESS technology section** | Capacity of BESS facility (in MWh) | 2400 MWh |
| | Type of technology (preferred) | Redox Flow, -Vanadium Redox Flow Battery (VRB) |
| | Type of technology (alternatives) | Solid State including Lithium-Ion, Sodium-Ion and others, Liquid Metal. Other technology types may be considered |
| | Structure height | Containerised batteries less than 5m high except for lightening conductors and vent pipes. Storage tanks may be required for the VRB and could be 6m high, if the non-containerised type of VRB battery is installed. |
| | Surface area to be covered (including associated infrastructure such as roads) | 28 ha<br>(including electrolyte storage tanks of 18 ha for redox flow battery) |
| | Structure locations | 2 sites each ± 14 ha, near the On-Site Substations- refer to Sub 1 and Sub 2 in the kmz |

The Applicant, Sunveld Energy (Pty) Ltd, is proposing the construction of a photovoltaic (PV), and Battery Energy Storage System (BESS) energy facility (known as Sunveld Solar PV Facility and BESS) located on the Remaining Extent of the Farm Kruispad 120 and Remaining Extent of the Farm Doornfontein A 118 situated approximately 7.5km East of Velddrif in the Western Cape Province.

A study site of approximately 2360 ha is being assessed as part of this Environmental Process and the infrastructure associated with the up to 600MW PV facility includes:

- PV modules and mounting structures;
- Inverters and transformers;
- Cabling;
- Battery Energy Storage System (BESS);
- Site and internal access roads;

- Auxiliary buildings (33 kV switch room, gatehouse and security, control centre, office, warehouse, canteen & visitors centre, staff lockers etc.);
- Perimeter fencing and security infrastructure;
- Rainwater tanks;
- Temporary and permanent laydown areas;
- Facility substation.
- Own-build grid connection solution, including on-site substations.

The Sunveld Solar PV Facility intends to connect to the National Grid via the existing Aurora Main Transmission Substation (MTS), located approximately 23km South of the proposed facility, by means of two double circuit 132kV conductor lines/powerlines, capable of evacuating or exporting the electricity output of both the 300MVA On-Site Substations.

The proposed connection will include an Electrical Grid Infrastructure (EGI) corridor for the two 132kV powerlines, from the On-Site Substations to the Aurora MTS.

It must be noted that this application only includes the IPP Portion of the EGI (i.e. the on site substations) the remainder of the EGI (i.e. those components that will be transferred to Eskom – namely, the Eskom Side of the on-site substations and the Overhead powerlines to the Aurora MTS) is being assessed as part of a separate Basic Assessment Process that will run in parallel with the Environmental Impact Assessment phase of this Environmental Process.

# LOCATION OF PREFFERED ALTERNATIVE[1]

The following description provides the summary of the currently preferred footprint that forms part of this scoping process. The current footprint has been informed by specialist input, but will be further refined in the Impact Assessment Phase of this Environmental Process.

The co-ordinates of the preferred alternative[2] are reflected in the table below.[3]

| Layout Alternative 3 (Preferred) | Latitude | Longitude |
|---|---|---|
| Area 1 | 018° 17' 23.83" E | 32° 47' 47.49" S |
| Area 1 | 018° 17' 32.70" E | 32° 47' 28.47" S |
| Area 1 | 018° 18' 03.42" E | 32° 47' 27.17" S |
| Area 1 | 018° 18' 03.12" E | 32° 47' 35.93" S |
| Area 1 | 018° 17' 54.99" E | 32° 47' 47.54" S |
| Area 1 | 018° 17' 23.83" E | 32° 47' 47.49" S |
| Area 2 | 018° 18' 35.63" E | 32° 48' 13.29" S |
| Area 2 | 018° 18' 49.37" E | 32° 48' 14.78" S |
| Area 2 | 018° 18' 49.94" E | 32° 48' 17.31" S |
| Area 2 | 018° 19' 03.13" E | 32° 48' 17.38" S |

[1] The footprint of Sunveld Energy is not rectangular. The co-ordinates reflected in this table indicate the bend points of the PV Footprint for each of the spatially separated areas.

[2] The Preferred alternative will be refined further in the Environmental Impact Reporting Phase of the Environmental Process.

[3] This Environmental Assessment Process includes consideration and assessment of the IPP portion of the on-site substations only. The powerline and remainder of infrastructure needed to connect this facility to the national grid is being considered as part of a separate Basic Assessment Process that will run in parallel with the environmental impact assessment phase of this environmental process.

| Layout Alternative 3 (Preferred) | Latitude | Longitude |
|---|---|---|
| Area 2 | 018° 19' 03.15" E | 32° 48' 20.45" S |
| Area 2 | 018° 19' 04.00" E | 32° 48' 22.57" S |
| Area 2 | 018° 19' 06.90" E | 32° 48' 23.69" S |
| Area 2 | 018° 19' 24.55" E | 32° 48' 23.64" S |
| Area 2 | 018° 19' 26.91" E | 32° 48' 31.23" S |
| Area 2 | 018° 18' 56.82" E | 32° 48' 38.08" S |
| Area 2 | 018° 18' 56.74" E | 32° 48' 36.16" S |
| Area 2 | 018° 18' 55.15" E | 32° 48' 33.65" S |
| Area 2 | 018° 18' 51.28" E | 32° 48' 31.38" S |
| Area 2 | 018° 18' 48.09" E | 32° 48' 30.69" S |
| Area 2 | 018° 18' 45.19" E | 32° 48' 32.98" S |
| Area 2 | 018° 18' 40.35" E | 32° 48' 33.20" S |
| Area 2 | 018° 18' 37.84" E | 32° 48' 31.83" S |
| Area 2 | 018° 18' 35.63" E | 32° 48' 13.29" S |
| Area 3 | 018° 17' 16.63" E | 32° 49' 00.99" S |
| Area 3 | 018° 17' 13.63" E | 32° 48' 48.93" S |
| Area 3 | 018° 17' 13.83" E | 32° 48' 43.81" S |
| Area 3 | 018° 17' 11.54" E | 32° 48' 40.50" S |
| Area 3 | 018° 17' 09.87" E | 32° 48' 33.55" S |
| Area 3 | 018° 17' 06.27" E | 32° 48' 24.09" S |
| Area 3 | 018° 17' 15.33" E | 32° 48' 05.62" S |
| Area 3 | 018° 17' 34.44" E | 32° 48' 08.06" S |
| Area 3 | 018° 17' 26.83" E | 32° 48' 15.33" S |
| Area 3 | 018° 17' 51.35" E | 32° 48' 18.13" S |
| Area 3 | 018° 17' 52.67" E | 32° 48' 10.31" S |
| Area 3 | 018° 18' 18.77" E | 32° 48' 12.81" S |
| Area 3 | 018° 18' 18.80" E | 32° 48' 18.91" S |
| Area 3 | 018° 18' 08.77" E | 32° 48' 18.76" S |
| Area 3 | 018° 18' 02.65" E | 32° 48' 21.43" S |
| Area 3 | 018° 18' 01.62" E | 32° 48' 22.90" S |
| Area 3 | 018° 17' 54.07" E | 32° 48' 22.82" S |
| Area 3 | 018° 17' 52.92" E | 32° 48' 27.28" S |
| Area 3 | 018° 17' 52.98" E | 32° 48' 34.92" S |
| Area 3 | 018° 17' 49.16" E | 32° 48' 34.88" S |
| Area 3 | 018° 17' 49.18" E | 32° 48' 42.49" S |
| Area 3 | 018° 17' 53.51" E | 32° 48' 48.90" S |
| Area 3 | 018° 17' 53.53" E | 32° 48' 52.53" S |
| Area 3 | 018° 17' 16.63" E | 32° 49' 00.99" S |
| Area 4 | 018° 17' 15.75" E | 32° 47' 51.03" S |
| Area 4 | 018° 16' 50.96" E | 32° 47' 48.44" S |
| Area 4 | 018° 16' 49.41" E | 32° 47' 41.18" S |
| Area 4 | 018° 16' 27.22" E | 32° 47' 41.47" S |
| Area 4 | 018° 16' 12.30" E | 32° 47' 40.66" S |
| Area 4 | 018° 16' 01.21" E | 32° 47' 32.23" S |
| Area 4 | 018° 16' 28.95" E | 32° 47' 31.02" S |
| Area 4 | 018° 17' 26.46" E | 32° 47' 28.62" S |

| Layout Alternative 3 (Preferred) | Latitude | Longitude |
|---|---|---|
| Area 4 | 018° 17' 15.75" E | 32° 47' 51.03" S |
| Area 4 | 018° 15' 49.95" E | 32° 49' 26.02" S |
| Area 4 | 018° 15' 06.27" E | 32° 49' 38.62" S |
| Area 5 | 018° 15' 06.43" E | 32° 49' 30.43" S |
| Area 5 | 018° 15' 13.66" E | 32° 49' 21.15" S |
| Area 5 | 018° 15' 13.62" E | 32° 48' 53.38" S |
| Area 5 | 018° 15' 12.96" E | 32° 48' 53.35" S |
| Area 5 | 018° 15' 12.83" E | 32° 48' 50.50" S |
| Area 5 | 018° 15' 14.50" E | 32° 48' 48.97" S |
| Area 5 | 018° 15' 14.53" E | 32° 48' 46.63" S |
| Area 5 | 018° 15' 10.88" E | 32° 48' 43.22" S |
| Area 5 | 018° 15' 09.97" E | 32° 48' 39.80" S |
| Area 5 | 018° 15' 12.02" E | 32° 48' 35.31" S |
| Area 5 | 018° 15' 33.17" E | 32° 48' 35.18" S |
| Area 5 | 018° 15' 35.70" E | 32° 48' 33.43" S |
| Area 5 | 018° 15' 41.62" E | 32° 48' 33.65" S |
| Area 5 | 018° 15' 46.40" E | 32° 48' 37.07" S |
| Area 5 | 018° 15' 45.04" E | 32° 48' 41.17" S |
| Area 5 | 018° 15' 39.33" E | 32° 48' 46.30" S |
| Area 5 | 018° 15' 39.28" E | 32° 48' 55.59" S |
| Area 5 | 018° 15' 50.30" E | 32° 49' 10.39" S |
| Area 5 | 018° 15' 49.95" E | 32° 49' 26.02" S |
| Area 6 | 018° 15' 37.72" E | 32° 48' 19.80" S |
| Area 6 | 018° 15' 31.58" E | 32° 48' 19.60" S |
| Area 6 | 018° 15' 12.14" E | 32° 48' 25.69" S |
| Area 6 | 018° 15' 10.11" E | 32° 48' 27.78" S |
| Area 6 | 018° 14' 59.27" E | 32° 48' 27.96" S |
| Area 6 | 018° 14' 48.49" E | 32° 48' 33.80" S |
| Area 6 | 018° 14' 42.47" E | 32° 48' 33.77" S |
| Area 6 | 018° 14' 41.06" E | 32° 48' 31.83" S |
| Area 6 | 018° 14' 37.56" E | 32° 48' 30.12" S |
| Area 6 | 018° 14' 37.64" E | 32° 48' 27.05" S |
| Area 6 | 018° 14' 40.15" E | 32° 48' 24.32" S |
| Area 6 | 018° 14' 46.21" E | 32° 48' 22.57" S |
| Area 6 | 018° 14' 47.48" E | 32° 48' 19.75" S |
| Area 6 | 018° 14' 47.03" E | 32° 48' 13.85" S |
| Area 6 | 018° 14' 47.04" E | 32° 48' 09.63" S |
| Area 6 | 018° 14' 50.26" E | 32° 48' 06.63" S |
| Area 6 | 018° 15' 17.85" E | 32° 48' 06.69" S |
| Area 6 | 018° 15' 17.86" E | 32° 48' 05.21" S |
| Area 6 | 018° 15' 15.99" E | 32° 48' 01.52" S |
| Area 6 | 018° 15' 35.51" E | 32° 48' 03.61" S |
| Area 6 | 018° 15' 37.81" E | 32° 48' 12.44" S |
| Area 6 | 018° 15' 37.72" E | 32° 48' 19.80" S |
| Area 7 | 018° 16' 08.00" E | 32° 48' 12.83" S |
| Area 7 | 018° 16' 07.98" E | 32° 48' 24.81" S |

| Layout Alternative 3 (Preferred) | Latitude | Longitude |
|---|---|---|
| Area 7 | 018° 15' 57.73" E | 32° 48' 24.29" S |
| Area 7 | 018° 15' 56.98" E | 32° 48' 31.53" S |
| Area 7 | 018° 15' 49.89" E | 32° 48' 29.47" S |
| Area 7 | 018° 15' 38.45" E | 32° 48' 21.86" S |
| Area 7 | 018° 15' 38.45" E | 32° 48' 16.51" S |
| Area 7 | 018° 15' 44.35" E | 32° 48' 16.53" S |
| Area 7 | 018° 15' 50.96" E | 32° 48' 11.15" S |
| Area 7 | 018° 15' 51.45" E | 32° 48' 05.31" S |
| Area 7 | 018° 16' 23.03" E | 32° 48' 08.78" S |
| Area 7 | 018° 16' 24.54" E | 32° 47' 59.22" S |
| Area 7 | 018° 16' 44.68" E | 32° 48' 01.37" S |
| Area 7 | 018° 16' 44.68" E | 32° 48' 10.05" S |
| Area 7 | 018° 16' 20.71" E | 32° 48' 12.82" S |
| Area 7 | 018° 16' 08.00" E | 32° 48' 12.83" S |

| Access Road[4] | Latitude | Longitude |
|---|---|---|
| Access 1[5] | 018° 13' 37.88" E | 32° 47' 47.58" S |
| Access 2[6] | 018° 16' 51.29" E | 32° 47' 55.30" S |
| Access 3[7] | 018° 18' 23.92" E | 32° 48' 05.28" S |

| IPP Substation[8] | Latitude | Longitude |
|---|---|---|
| Substation 1 | 018° 16' 01.32" E | 32° 48' 22.55" S |
| Substation 2 | 018° 16' 49.83" E | 32° 48' 05.36" S |

| BESS Area | Latitude | Longitude |
|---|---|---|
| BESS 1 | 018° 16' 15.36" E | 32° 48' 20.71" S |
| BESS 2 | 018° 16' 30.82" E | 32° 48' 17.80" S |

# CONTENTS OF A SCOPING REPORT.

Section 2 in Appendix 2 of regulation 982 details the information that is necessary for a proper understanding of the process, informing all preferred alternatives, including location alternatives, the scope of the assessment, and the consultation process to be undertaken through the environmental impact assessment process. The table below lists the minimal contents of a scoping report in terms of these regulations;

| Requirement | Details |
|---|---|
| (a) details of -<br>(i) the EAP who prepared the report; and<br>(ii) the expertise of the EAP, including a curriculum vitae; | This was compiled by Dale Holder of Cape Environmental Assessment Practitioners (Pty) Ltd (Cape EAPrac). Details of the EAP are included at the beginning of this report. A CV of the |

[4] This table depicts the position of the proposed access points from the R399.

[5] This Access point provides access sections of the proposed development that are situated south of the R399.

[6] This access point provides access sections of the proposed development that are situated both north and south of the R399.

[7] This access point provides access sections of the proposed development that are situated south of the R399.

[8] This table depicts the approximate center point of the IPP portion of the on site substations.

| Requirement | Details |
|---|---|
| | author as well as a company profile of the EAP company, Cape EAPrac, is attached in Appendix G3. |
| (b) the location of the activity, including -<br>(i) the 21 digit Surveyor General code of each cadastral land parcel;<br>(ii) where available, the physical address and farm name;<br>(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties; | The proposed facility is to be situated on the farm Kruispad 120 and on the farm Doornfontein 118 situated approximately 7.5 km East Velddrif in the Western Cape Province.<br>.<br>21 digit Surveyor General codes:<br>- Kruispad: 0/120 : C05800000000012000000<br>- Doornfontein A 0/118 : C05800000000011800000 |
| (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<br>(ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken; | A location plan including co-ordinates of the proposed activity is attached in Appendix A.<br><br>The PV Facility, BESS, Substations and Access Roads are included in the sections above. |
| (d) a description of the scope of the proposed activity, including -<br>(i) all listed and specified activities triggered;<br>(ii) a description of the activities to be undertaken, including associated structures and infrastructure; | The description of the proposed activity is detailed in section 2 of this report.<br><br>Listed and specified activities triggered are detailed in section 3.1.2 of this report. |
| (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; | The legislative and policy context is included in section 3 of this report. |
| (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; | The need and desirability of the project is included in section 2.9 of this report. |
| (h) a full description of the process followed to reach the proposed preferred activity, site and location within the site, including -<br>(i) details of all the alternatives considered;<br>(ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;<br>(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;<br>(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;<br>(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts -<br>(aa) can be reversed;<br>(bb) may cause irreplaceable loss of resources; and<br>(cc) can be avoided, managed or mitigated;<br>(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;<br>(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;<br>(viii) the possible mitigation measures that could be applied and level of residual risk;<br>(ix) the outcome of the site selection matrix; | The details of all alternatives considered, is included in section 2.11.<br><br>The details of the public participation already undertaken as well as the details of the public participation for the remainder of the environmental process, is detailed in section 7 of this report.<br><br>An issues and responses will be included in Annexure F2 on completion of the initial Public Participation Process.<br><br>Detailed site description and attributes is included in section 5of this report.<br><br>A description of potential impacts identified by the EAP as well as participating specialists is included in section 6.2 of this report.<br><br>The methodology used for the determination and ranking of significance is included in section 6.4 of this report. Please also refer to the specific methodologies in the specialist reports attached in Annexures E1 – E8.<br><br>This scoping report identifies the potential positive and negative impacts associated with the proposed project. These are summarised in section 6.2 of this report. An assessment of the significance of these identified impacts will take place in the impact assessment phase of this environmental process.<br><br>The potential mitigation measures will only be identified once the detailed impact assessment has been completed. |

| Requirement | Details |
|---|---|
| (x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and<br>(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity; | Details regarding the criteria for the selection of the preferred site selection is included in section 2.10of this report.<br><br>Alternatives have been discussed in section 2.11 of this report.<br><br>The preferred alternative has been determined based on the outcome of the specialist Site Sensitivity Verifications. The preferred alternative may be mitigated further based on the outcome of the scoping process. This Preferred Mitigated alternative will be presented and assessed in the Draft Environmental Impact Report. |
| (i) a plan of study for undertaking the environmental impact assessment process to be undertaken, including -<br>(i) a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;<br>(ii) a description of the aspects to be assessed as part of the environmental impact assessment process;<br>(iii) aspects to be assessed by specialists;<br>(iv) a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;<br>(v) a description of the proposed method of assessing duration and significance;<br>(vi) an indication of the stages at which the competent authority will be consulted;<br>(vii) particulars of the public participation process that will be conducted during the environmental impact assessment process; and<br>(viii) a description of the tasks that will be undertaken as part of the environmental impact assessment process;<br>(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. | The plan of study for Environmental Impact Assessment phase of the environmental process is included in section 6 of this report. |
| (j) an undertaking under oath or affirmation by the EAP in relation to -<br>(i) the correctness of the information provided in the report;<br>(ii) the inclusion of comments and inputs from stakeholders and interested and affected parties; and<br>(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; | The signed EAP declaration is included in the application form submitted simultaneously with this Draft Scoping Report. |
| (k) 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; | Please refer to the plan of Study for EIA included in section 6 of this report. |
| (l) where applicable, any specific information required by the competent authority; | The submission of this draft scoping report to the competent authority, allows the competent authority to advise the EAP on any specific additional requirements. |
| (m) any other matter required in terms of section 24(4)(a) and (b) of the Act. | Compliance with this section will be required at a later stage, once the competent authority has considered the contents of this Draft Scoping Report. |

# COMPETANT AUTHORITY COMMENT ON DRAFT SCOPING REPORT

This section will be updated once the DFFE provide comment on the Draft Scoping Report.

# ORDER OF REPORT

Report Summary

Draft Scoping Report – Main Report

| | | |
|---|---|---|
| Appendix A | : | Location, Topographical Plans |
| Appendix B | : | Biodiversity Overlays |
| Appendix C | : | Site Photographs |
| Appendix D | : | Solar Facility Layout Plans[9] |
| Appendix D1 | : | Cluster Map showing proximity of Sunveld Solar PV Energy Facility to other projects in the vicinity. |
| Appendix E | : | Supplementary Reports (Specialist Reports and Technical Reports) |
| Annexure E1 | : | Terrestrial Biodiversity[10] SSVR (Biodiversity Africa, 2023) |
| Annexure E2 | : | Invertebrate Species SSVR (Collville, 2023) |
| Annexure E3 | : | Avifaunal SSVR (Froneman & Colyn, 2023) |
| Annexure E4 | : | Aquatic Biodiversity SSVR (Belcher, 2023) |
| Annexure E5 | : | Heritage NID and Background information Document (Orton, 2023) |
| Annexure E6 | : | Agricultural SSVR (Lanz, 2023) |
| Annexure E7 | : | Visual SSVR (Stead, 2023) |
| Annexure E8 | : | Battery Energy Storage System preliminary Risk Assessment (Mitchell, 2023) |
| Appendix F | : | Public Participation Process |
| Annexure F1 | : | I&AP Register |
| Annexure F2 | : | Comments and Response Report (to be included with final Scoping Report) |
| Annexure F3 | : | Adverts & Site Notices |
| Annexure F4 | : | Draft Scoping Report Notifications (To be included with final Scoping Report) |
| Annexure F5 | : | Draft Scoping Report Notifications (To be included with final Scoping Report) |
| Appendix G | : | Other Information |
| Annexure G1 | : | Correspondence with Authorities |
| Annexure G2 | : | Landowner Consent |
| Annexure G3 | : | EAP Declaration & CV |

[9] This includes a general plan of the currently preferred layout alternative (Layout Alternative 3). A detailed SLP that will be prepared pending the outcome of the detailed specialist assessments will be included in the Draft EIR.

[10] This includes Terrestrial Biodiversity, Plant Species and Animal Species Themes but excludes Invertebrates and Avifauna which are reported separately.

| | | |
|---|---|---|
| Annexure G4 | : | Specialist Declarations |
| Annexure G5 | : | Title Deed / Windeed Report |
| Annexure G6 | : | Specialist CV's |
| Appendix H | : | Site Sensitivity Verification Report and DFFE Screening Tool |

# TABLE OF CONTENTS

# FIGURES

# TABLES

# NON TECHNICAL SUMMARY

## I. INTRODUCTION

*Cape EAPrac* has been appointed by Sunveld Energy (Pty) Ltd, hereafter referred to as the Applicant, as the independent Environmental Assessment Practitioner (EAP), to facilitate the Scoping and Environmental Impact Reporting process required in terms of the National Environmental Management Act (NEMA, Act 107 of 1998) for the proposed development of the Sunveld Solar PV Facility and BESS (hereafter referred to as Sunveld Solar PV) on the Remaining Extent of the farm Kruispad 120 and Remaining Extent of the farm Doornfontein A 118 in the Western Cape Province of South Africa.

The total generation capacity of the solar facility will be up to 600MW for input into the national Eskom grid.

The project will feed into the National Grid via the Eskom Aurora MTS. The grid connection to connect this project to the National Grid is being assessed as part of a separate environmental process to be initiated at Draft EIR stage of the current process. This current process only includes the IPP portion of the on-site substation.

The purpose of this **Draft Scoping Report** (DSR) is to describe the environment to be affected, the proposed project, to present the site constraints identified by the various specialist during their site assessments and identify impacts of this development on the receiving environment. This information is herewith presented to all registered and potential Interested and Affected Parties (I&AP's), organs of state, state departments and the competent authority for review and comment.

In compliance with Chapter 6 of the 2014 EIA regulations (as amended), Draft Scoping Report is available for a 30 - Day period extending from **Friday 15 September 2023 – Monday 16 October 2023.**

All comments received on the DSR will be incorporated into the Final Scoping Report (FSR) that will be submitted to the Department of Forestry, Fisheries and the Environment (DFFE) for consideration and decision making.

## II. RECOMMENDATION OF THIS SCOPING REPORT

The outcome of this scoping process has not identified any fatal flaws that would prevent the Sunveld Solar PV Facility from proceeding to the next phase of the Environmental process. It is the EAP's recommendation that, subject to the outcome of the initial public participation, that the project proceed with the activities outlined in the plan of study for EIR outlined in section 6 of this report.

## III. NEED AND DESIRABILITY

Need and desirability for this project has been considered in detail in this environmental process. The overall need and desirability in terms of developing renewable energy generation in South Africa in the Western Cape Province and globally is considered in section 1, while the project specific need and desirability is considered in section 2.8 of this report.

# IV. ENVIRONMENTAL LEGISLATIVE REQUIREMENTS

The current assessment is being undertaken in terms of the **National Environmental Management Act** (NEMA, Act 107 of 1998)[11]. This Act makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority (in this case, the national Department of Forestry, Fisheries and the Environment) based on the findings of an Environmental Assessment.

The proposed development entails a number of listed activities, which require a Scoping & Environmental Impact Reporting process to be followed. Such a process must be conducted by an independent registered EAP[12]. Cape EAPrac has been appointed to undertake this process.

The listed activities associated with the proposed development, as stipulation under 2014 Regulations **327, 325 and 324** are as follows:

**Table 1:** NEMA 2014 (As amended in April 2017) listed activities applicable to Sunveld Solar PV.

| Activity No(s): | Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1 of the EIA Regulations, 2014 as amended | Describe the portion of the proposed project to which the applicable listed activity relates. Ensure to include thresholds/area/footprint applicable. |
|---|---|---|
| 11(i) | The development of facilities or infrastructure for the transmission and distribution of electricity—<br>(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; | The two On-Site Substations will have a capacity of up to 300MVA.<br>Two 132kV powerlines will be routed in an EGI corridor/servitude from the two on-site substations to the grid connection |
| 12(ii)(c) | The development of—<br>(ii) infrastructure or structures with a physical footprint of 100 square metres or more;<br>where such development occurs—<br>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; | Some of the project infrastructure, such as internal cabling may be routed within 32m of the Pans identified by the aquatic specialist. The relevance of this activity will be determined in the Environmental Impact Reporting phase after layouts are finalised and assessments completed. |
| 14 | The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where<br>such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres. | The BESS proposed will include the storage of dangerous goods in excess of the threshold of this activity. |
| 28(ii) | Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:<br>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; | The proposed PV and BESS Development constitutes Commercial / Industrial use and will occur on a property currently used for agricultural purposes. |
| 48 | The expansion of— (i) infrastructure or structures where the physical footprint is expanded by 100 square metres or more; or<br>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; | Some of the project infrastructure, such as internal cabling may be routed within 32m of the Pans identified by the aquatic specialist. The relevance of this activity will be determined in the Environmental Impact Reporting phase after layouts are finalised and assessments completed. |

[11] The Minister of Water and Environmental Affairs promulgated new regulations in terms of Chapter 5 of the National Environmental Management Act (NEMA, Act 107 of 1998), viz, the Environmental Impact Assessment (EIA) Regulations 2014 (as amended). These regulations came into effect on 08 December 2014 and replace the EIA regulations promulgated in 2006 and 2010.

[12] The EAP in this regard is registered with EAPASA under registration number 2019/301

| Activity No(s): | Provide the relevant Scoping and EIA Activity(ies) as set out in Listing Notice 2 of the EIA Regulations, 2014 as amended | Describe the portion of the proposed project to which the applicable listed activity relates. Ensure to include thresholds/area/footprint applicable. |
|---|---|---|
| 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. | The proposed Sunveld Energy Project will have an Electricity Footprint of up to 600 megawatts. |
| 4 | The development and related operation of facilities or infrastructure, for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres. | The BESS proposed will include the storage of dangerous goods in excess of the threshold of this activity. |
| 15 | The clearance of an area of 20 hectares or more of indigenous vegetation. | The proposed Sunveld Energy project will require the clearance of more than 20ha of indigenous vegetation. |
| **Activity No(s):** | **Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3 of the EIA Regulations, 2014 as amended** | **Describe the portion of the proposed project to which the applicable listed activity relates. Ensure to include thresholds/area/footprint applicable.** |
| 4(i)(ii)(aa) | The development of a road wider than 4m with a reserve less than 13,5m.<br>(ii). Areas outside urban areas;<br>(aa) Areas containing indigenous vegetation; | The internal roads for Sunveld energy will have a maximum width of 4m and the main access roads will have a maximum width of 5m. |
| 10(i)(ii) | The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80m³<br>ii. All areas outside urban areas; | The BESS proposed will include the storage of dangerous goods in excess of the threshold of this activity. |
| 12(i)(i)&(ii) | The clearance of an area of 300m² or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.<br>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEM:BA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;<br>ii. Within critical biodiversity areas identified in bioregional plans; | The vegetation on site is mapped as the endangered Saldanha Flats Strandveld. Portions of the site fall within a Critical Biodiversity Area in terms of the Western Cape Biodiversity Sector Plan. More than 300 Square metres of vegetation will be removed in the endangered vegetation type and the critical biodiversity areas. |
| 14(i)(ii)(c)(i)(ff) | The development of<br>(ii) infrastructure or structures with a physical footprint of 10m² or more;<br>where such development occurs—<br>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;<br>i. Outside urban areas:<br>(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; | Some of the project infrastructure, such as internal cabling may be routed within 32m of the Pans identified by the aquatic specialist. The relevance of this activity will be determined in the Environmental Impact Reporting phase after layouts are finalised and assessments completed. |
| 18(i)(II)(aa) | The widening of a road by more than 4m, or the lengthening of a road by more than 1km.<br>ii. All areas outside urban areas:<br>(aa) Areas containing indigenous vegetation; | The main and internal access roads will require that existing farm tracks be widened by more than 4m in some areas. Existing Farm roads will be lengthened by more than 1km. |

**NOTE:** Basic Assessment as well as S&EIR Activities are being triggered by the proposed development, the Environmental Application Process will follow a Scoping and Environmental Impact Reporting Process.

Before any of the above-mentioned listed activities can be undertaken, authorisation must be obtained from the competent authority, in this case the DFFE. Should the Department approve the proposed activity, the Environmental Authorisation does not exclude the need for obtaining relevant approvals from other Authorities who have a legal mandate in respect of the activity.

# V. DEVELOPMENT PROPOSAL

The Applicant, Sunveld Energy (Pty) Ltd, is proposing the construction of a photovoltaic (PV), and Battery Energy Storage System (BESS) energy facility (known as Sunveld Solar PV Facility and BESS) located on the Remaining Extent of the Farm Kruispad 120 and Remaining Extent of the Farm Doornfontein A 118 situated approximately 7.5km East of Velddrif in the Western Cape Province.

A study site of approximately 2360 ha is being assessed as part of this Environmental Process and the infrastructure associated with the up to 600MW PV facility includes:

- PV modules and mounting structures;
- Inverters and transformers;
- Cabling;
- Battery Energy Storage System (BESS);
- Site and internal access roads;
- Auxiliary buildings (33 kV switch room, gatehouse and security, control centre, office, warehouse, canteen & visitors centre, staff lockers etc.);
- Perimeter fencing and security infrastructure;
- Rainwater tanks;
- Temporary and permanent laydown areas;
- Facility substation.
- Own-build grid connection solution, including on-site substations.

The Sunveld Solar PV Facility intends to connect to the National Grid via the existing Aurora Main Transmission Substation (MTS), located approximately 23km South of the proposed facility, by means of two double circuit 132kV conductor lines/powerlines capable of evacuating or exporting the electricity output of both the 300MVA On-Site Substations.

The proposed connection will include an Electrical Grid Infrastructure (EGI) corridor for the two 132kV powerlines, from the On-Site Substations to the Aurora MTS.

It must be noted that this application only includes the IPP Portion of the EGI (i.e. the on site substations) the remainder of the EGI (i.e. those components that will be transferred to Eskom – namely, the Eskom Side of the on-site substations and the Overhead powerlines to the Aurora MTS) is being assessed as part of a separate Basic Assessment Process that will run in parallel with the Environmental Impact Assessment phase of this Environmental Process.

# VI. PROFFESIONAL INPUT

The following professionals[13] have provided input into this environmental process:

1. Terrestrial Ecology - Biodiversity Africa
2. Plant Species - Biodiversity Africa

[13] Note that not all of these professionals are considered specialists as contemplated in chapter 3 of Regulation 326. Studies such as Engineering, Stormwater, Traffic, water consumption and planning constitute “technical” studies, rather than specialist studies and as such, the requirements in appendix 6 of R326 do not apply to all these professionals

| | | | |
|---|---|---|---|
| 3. | Animal Species | - | Biodiversity Africa |
| 4. | Invertebrates | - | Jonathan Colville |
| 5. | Avifaunal | - | Albert Froneman |
| 6. | Black Harrier Habitat Model | - | Robyn Colyn |
| 7. | Heritage | - | Dr Jayson Orton |
| 8. | Archaeology | - | Dr Jayson Orton |
| 9. | Agricultural | - | Mr Johann Lanz |
| 10. | Visual | - | Visual Resource Management Africa |
| 11. | Aquatic Biodiversity | - | Toni Belcher |
| 12. | Social | - | Tony Barbour |
| 13. | BESS Risk Assessment | - | ISHECON Ms Debbie Mitchell |

# V. CONCLUSIONS & RECOMMENDATIONS

This scoping exercise is currently being undertaken to present concept proposals to the public and potential Interested & Affected Parties and to identify environmental issues and concerns raised as a result of the proposed development alternatives to date.

This will allow Interested & Affected Parties (I&APs), authorities, the project team, as well as specialists to provide input and raise issues and concerns, based on baseline / scoping studies undertaken.

Sunveld Solar PV has been analysed from Ecological, Agricultural, Heritage, Avifaunal, Social and Visual perspectives, and site constraints and potential impacts identified.

This Draft Scoping report summarises the process to date, reports on the findings of relevant baseline studies and outlines the requirements for the remainder of the environmental process.

Cape EAPrac is of the opinion that the information contained in this Draft Scoping Report and the documentation attached hereto is sufficient to allow the general public and key stakeholders (including the competent authority) to apply their minds to the potential negative and/or positive impacts associated with the development, in respect of the activities applied for.

The outcome of this scoping report has not identified any fatal flaws associated with the development of the proposed Sunveld Solar PV Facility.

Subject to the outcome of the public participation process, it is Cape EAPrac's reasoned opinion that the project should proceed to the Environmental Impact Assessment phase of the environmental process as outlined in section 7 of this report.

All stakeholders are requested to review this Scoping Report and the associated appendices, and provide comment, or raise issues of concern, directly to Cape EAPrac within the specified 30-day comment period.

# DRAFT SCOPING REPORT

## 1 INTRODUCTION

*Cape EAPrac* has been appointed by Sunveld Energy (Pty) Ltd, hereafter referred to as the Applicant, as the independent Environmental Assessment Practitioner (EAP), to facilitate the Scoping and Environmental Impact Reporting process required in terms of the National Environmental Management Act (NEMA, Act 107 of 1998) for the proposed development of the Sunveld Solar PV Energy Facility and BESS (hereafter referred to as the Sunveld Solar PV Facility) on the Remaining Extent of the farm Kruispad 120 and Remaining Extent of the farm Doornfontein A 118 in the Western Cape Province of South Africa.

The total generation capacity of the solar facility will be up to 600MW for input into the national Eskom grid.

The project will feed into the National Grid via the Eskom Aurora MTS. The grid connection to connect this project to the National Grid is being assessed as part of a separate environmental process to be initiated in at Draft EIR stage of the current environmental process. This current process only includes the IPP portion of the on-site substation.

The purpose of this **Draft Scoping Report** (DSR) is to describe the environment to be affected, the proposed project, to present the site constraints identified by the various specialist during their site assessments and identify impacts of this development on the receiving environment. This information is herewith presented to all registered and potential Interested and Affected Parties (I&AP's), organs of state, state departments and the competent authority for review and comment.

In compliance with Chapter 6 of the 2014 EIA regulations (as amended), Draft Scoping Report is available for a 30 - Day period extending from **Friday 15 September 2023 – Monday 16 October 2023.**

All comments received on the DSR will be incorporated into the Final Scoping Report (FSR) that will be submitted to the Department of Forestry, Fisheries and the Environment (DFFE) for consideration and decision making.

### 1.1 RECOMMENDATION OF THE SCOPING REPORT

The outcome of this scoping process has not identified any fatal flaws that would prevent the Sunveld Solar PV Facility from proceeding to the next phase of the Environmental process. It is the EAP's recommendation that, subject to the outcome of the initial public participation, that the project proceed with the activities outlined in the plan of study for EIR outlined in section 6 of this report.

### 1.2 OVERVIEW OF ALTERNATIVE ENERGY IN SOUTH AFRICA AND THE WESTERN CAPE[14]

The section below provides an overview of the potential benefits associated with the renewable energy sector in South Africa. Given that South Africa supports the development of renewable energy at national level, the intention is not to provide a critical review of renewable energy. The focus is therefore on the contribution of renewable energy, specifically in terms of supporting economic development.

The Renewable Energy Independent Power Producers Procurement Programmes (REIPPPP)[15] primary mandate is to secure electrical energy from the private from renewable energy sources.

[14] This section has been prepared with input from the social specialist.

[15] The Sunveld Solar PV Facility may form part of the REIPPPP, or another State or Private Power Procurement process.

The programme is designed to reduce the country's reliance on fossil fuels, stimulate an indigenous renewable energy industry and contribute to socio-economic development and environmentally sustainable growth. The REIPPPP has been designed not only to procure energy but has also been structured to contribute to the broader national development objectives of job creation, social upliftment and broadening of economic ownership.

By the end of June 2020, the REIPPPP had made the following significant impacts in terms of energy supply:

- 6 422MW of electricity had been procured from 112 Renewable Energy Independent Power Producers (IPPs) in seven bid rounds.
- 4 276 MW of electricity generation capacity from 68 IPP projects has been connected to the national grid.
- 49 461GWh of energy has been generated by renewable energy sources procured under the REIPPPP since the first project became operational in November 2013.

Renewable energy IPPs have proved to be very reliable. Of the 68 projects that have reached COD, 64 projects have been operational for longer than a year. The energy generated over the past 12-month period for these 64 projects is 11 079GWh, which is 93% of their annual energy contribution projections (P50) of 11 882GWh over a 12-month delivery period. Twenty-eight (24) of the 64 projects (38%) have individually exceeded their P50 projections.

In line with international experience, the price of renewable energy is increasingly cost competitive when compared with conventional power sources. The REIPPPP has effectively captured this global downward trend with prices decreasing in every bid window. Energy procured by the REIPPPP is progressively more cost effective and has approached a point where the wholesale pricing for new coal- and renewable-generated energy intersect.

The document notes that the REIPPPP has attracted significant investment in the development of the REIPPs into the country. The total investment (total project costs [16]), including interest during construction, of projects under construction and projects in the process of closure is R209.7 billion (this includes total debt and equity of R209.2 billion, as well as early revenue and VAT facility of R0.5 billion).

To date, the REIPPPP has attracted R41.8 billion in foreign investment and financing in the seven bid windows.

The REIPPPP also contributes to Broad Based Black Economic Empowerment and the creation of black industrialists. In this regard, Black South Africans own, on average, 33% of projects that have reached financial close (BW1-BW4), which is 3% higher than the 30% target. This includes black people in local communities that have ownership in the IPP projects that operate in or near their communities and represents the majority share of total South African Entity Participation.

On average, black local communities own 9% of projects that have reached financial close. This is well above the 5% target. In addition, an average of 21% shareholding by black people in engineering, procurement, and construction (EPC) contractors has been attained for projects that have reached financial closure. This is higher than 20% target. The shareholding by black people in operating companies of IPPs has averaged 24% (against the targeted 20%) for the 68 projects in operation (i.e. in BW1–4).

[16] Total project costs means the total capital expenditure to be incurred up to the commercial operations date in the design, construction, development, installation, and or commissioning of the project)

To date, a total of 52 603 job years[17] have been created for South African citizens, of which 42 355 job years were in construction and 10 248 in operations. These job years should rise further past the planned target as more projects enter the construction phase. Employment opportunities across all five active bid windows are 126% of the planned number during the construction phase (i.e. 33 707 job years), with 23 projects still in construction and employing people. The number of employment opportunities is therefore likely to continue to grow beyond the original expectations. By the end of June 2020, 68 projects had successfully completed construction and moved into operation. These projects created 33 449 job years of employment, compared to the anticipated 23 619. This was 42% more than planned.

The emission reductions for the programme during the preceding 12 months (June 2019-June 2020) is calculated as 11.5 million tonnes CO2 (MtonCO2) based on the 11 313 GWh energy that has been generated and supplied to the grid over this period. This represents 56% of the total projected annual emission reductions (20.5MtonCO2) achieved with only partial operations. A total of 50.2 Mton CO2 equivalent reduction has been realised from programme inception to date.

The Green Jobs Study notes that South Africa has one of the most carbon-intensive economies in the world, therefore making the greening of the electricity mix a national imperative. Within this context the study notes that the green economy could be an extremely important trigger and lever for enhancing a country's growth potential and redirecting its development trajectory in the 21st century.

The REIPPPP introduced in 2011, has by all accounts been highly successful in quickly and efficiently delivering clean energy to the grid. Increasingly competitive bidding rounds have led to substantial price reductions.

A 20-year sovereign guarantee on the power purchase agreement (PPA) and, especially, ideal solar power conditions, have driven the investment case for Renewable Energy in South Africa. In this regard South Africa has been identified as one of the worlds' leading clean energy investment destinations

[17] The equivalent of a full-time employment opportunity for one person for one year

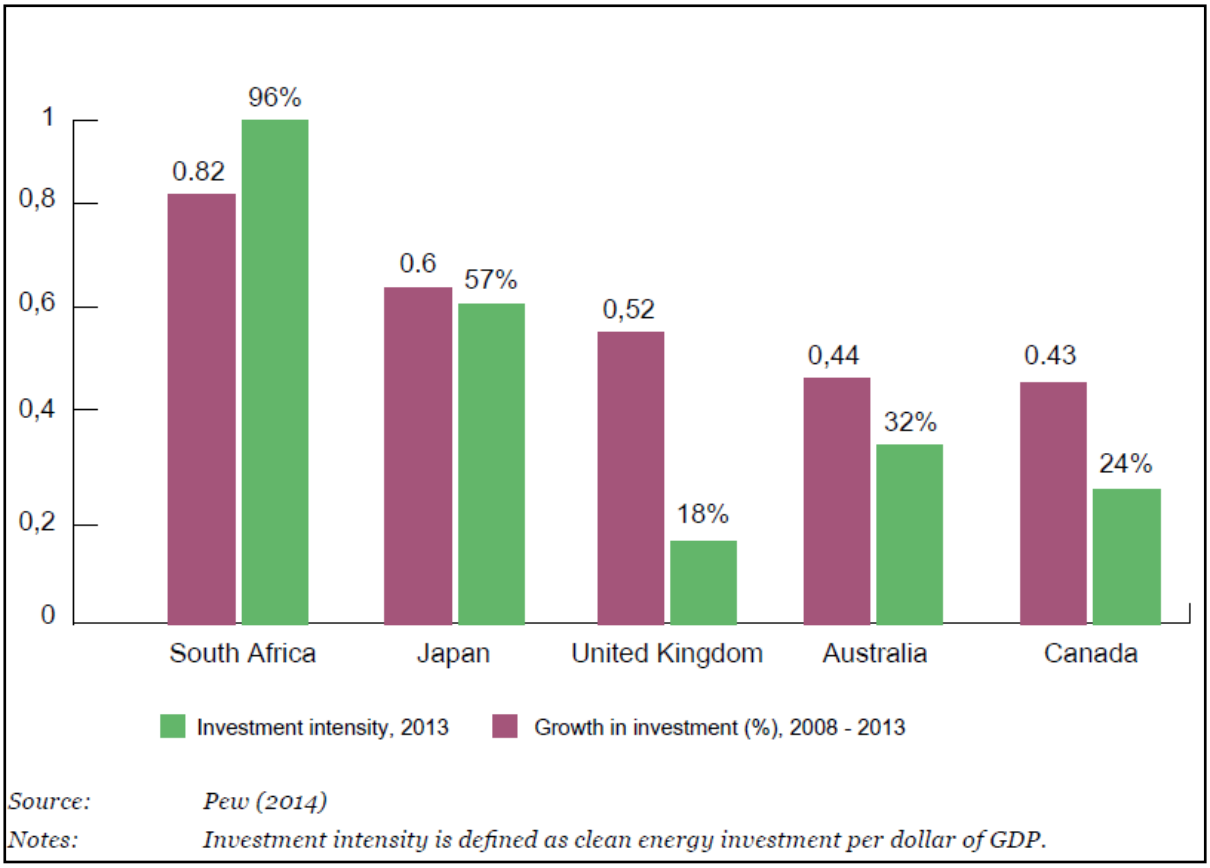


**Figure 1**: South Africa as a global lead clean energy investment destination

With regard to local economic development, the REIPPPP sets out various local economic development requirements with stipulated minimum threshold and aspirational targeted levels, which each bidder must comply with. Based on the Broad-Based Black Economic Empowerment Codes, this requirement comprises the following components which make up a scorecard:

- Ownership by black people and local communities,
- Job creation,
- Local content,
- Management control,
- Preferential procurement,
- Enterprise development, and
- Socio-economic development.

## 1.3 ASSUMPTIONS & LIMITATIONS

This section provides a brief overview of *specific assumptions and limitations* having an impact on this environmental application process:

- It is assumed that the information on which this report is based (specialist studies and project information, as well as existing information) is **correct, factual and truthful.**
- The proposed development is **in line** with the statutory planning vision for the area, most notably the local Spatial Development Plan, and thus it is assumed that issues such as the cumulative impact of development in terms of character of the area and it's resources, have been taken into account during the strategic planning for the area.
- It is assumed that all the relevant **mitigation and management measures** and agreements specified in this report will be implemented in order to ensure minimal negative impacts and maximum environmental benefits.

- It is assumed that due consideration will be given to the **discrepancies in the digital mapping** (PV panel array layouts against possible constraints), caused by differing software programs, and that it is understood that the ultimate/final positioning of solar array will only be confirmed on-site with the relevant specialist/s.
- The Department of Water and Sanitation / Catchment Management Agency **will consider the submission of a water use application** necessary for allowing the use of water from any water resource on site. The assumption at this stage is made that water provision for construction and operations is to be obtained from the local municipality.
- It is assumed that Stakeholders and Interested and Affected Parties notified of the availability of this will submit all relevant **comments within the designated 30-days** review and comment period, so that these can included in the Final Scoping Report to be timeously submitted to the competent authority, the Department of Forestry, Fisheries and the Environment, for consideration and decision making.

The assumptions and limitations of the various specialist studies are included in their respective reports attached in Appendix E.

# 2. PROPOSED ACTIVITY

The Applicant, Sunveld Energy (Pty) Ltd, is proposing the construction of a photovoltaic (PV), and Battery Energy Storage System (BESS) energy facility (known as Sunveld Solar PV Facility and BESS) located on the Remaining Extent of the Farm Kruispad 120 and Remaining Extent of the Farm Doornfontein A 118 situated approximately 7.5km East of Velddrif in the Western Cape Province.

A study site of approximately 2360 ha is being assessed as part of this Environmental Process and the infrastructure associated with the up to 600MW PV facility includes:

- PV modules and mounting structures;
- Inverters and transformers;
- Cabling;
- Battery Energy Storage System (BESS);
- Site and internal access roads;
- Auxiliary buildings (33 kV switch room, gatehouse and security, control centre, office, warehouse, canteen & visitors centre, staff lockers etc.);
- Perimeter fencing and security infrastructure;
- Rainwater tanks;
- Temporary and permanent laydown areas;
- Facility substation.
- Own-build grid connection solution, including on-site substations.

The Sunveld Solar PV Facility intends to connect to the National Grid via the existing Aurora Main Transmission Substation (MTS), located approximately 23km South of the proposed facility, by means of two double circuit 132kV conductor lines/powerlines capable of evacuating or exporting the electricity output of both the 300MVA On-Site Substations.

The proposed connection will include an Electrical Grid Infrastructure (EGI) corridor for the two 132kV powerlines, from the On-Site Substations to the Aurora MTS.

It must be noted that this application only includes the IPP Portion of the EGI (i.e. the on site substations) the remainder of the EGI (i.e. those components that will be transferred to Eskom – namely, the Eskom Side of the on-site substations and the Overhead powerlines to the Aurora MTS) is being assessed as part of a separate Basic Assessment Process that will run in parallel with the Environmental Impact Assessment phase of this Environmental Process.

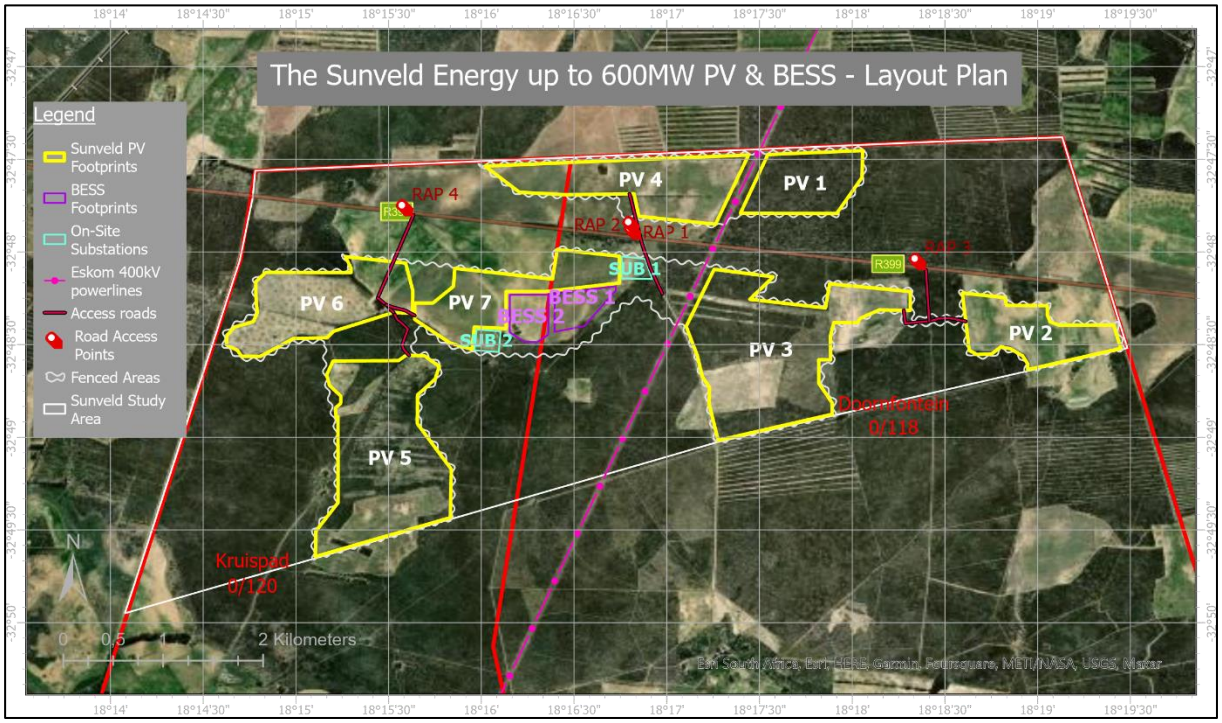


**Figure 2:** Plan depicting the key project infrastructure associated with the Sunveld Solar PV Facility (Please also refer to the full-scale plans attached in Appendix A).

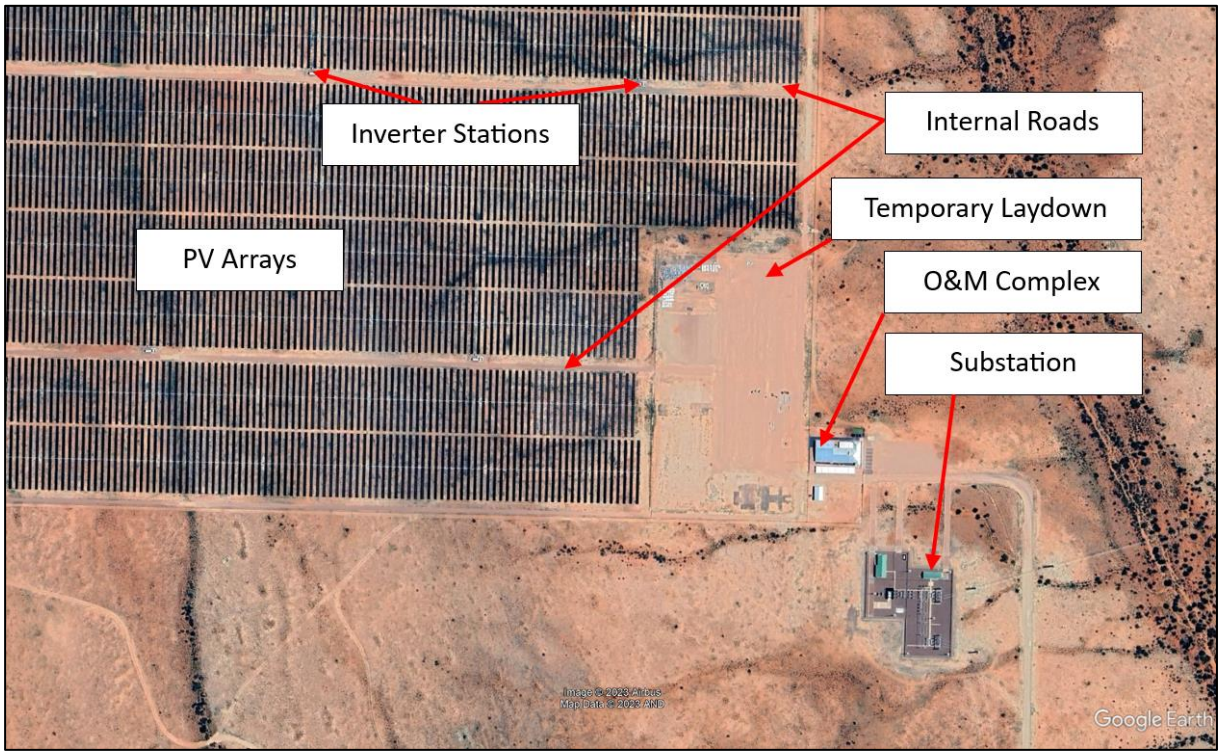


**Figure 3:** Typical configuration of a Solar PV Energy Facility.

The Sunveld Solar PV facility will have a net generating capacity of up to 600 MW with an estimated total maximum footprint of ± 709 ha.

The approximate area that each component of the Sunveld Solar PV Facility will occupy is summarised in the table below.

**Table 2:** Component Areas and % of Total Project Area

| SEF Component | Estimated Area | % of Study Area ( 2360 ha) | % of Total Property (6486ha) |
|---|---|---|---|
| PV Footprint – including inverters and internal roads. | ± 666 ha | 28.2% | 10% |
| Auxiliary Structures | ± 5 ha | 0.2% | 0.07% |
| Access roads | ± 8 ha | 0.3% | 0.12% |
| Substation | ± 9 ha | 0.4% | 0.12 % |
| BESS | ±29 ha | 1.2% | 0.44% |

## 2.1 SOLAR ARRAY

Solar PV modules are connected in series to form a string. A number of strings are then wired in parallel to form an array of modules. PV modules are mounted on structures that are either fixed, north-facing at a defined angle, or mounted to a single or double axis tracker to optimise electricity yield.

## 2.2 MOUNTING STRUCTURES

Various options exist for mounting structure foundations, which include cast/ pre-cast concrete, driven/ rammed piles, or ground/ earth screws mounting systems. Typical examples of these are shown in the images below .

**Figure 4:** Example of cast concrete mounting systems (BVI International 2023)

**Figure 5:** Example of Earth Screw Mounting Technology (HQ, Mount 2023)

The impact on of these options are considered to be similar, however concrete is least preferred due the extensive mitigation required during construction (in terms of run off and spillage prevention) and effort required at a decommissioning phase in order to remove the concrete from the soil.

Sunveld Solar PV will therefore aim to make the most use of predrilling and backfilling of holes prior to either driven/ rammed piles, or ground/ earth screws mounting systems, and only in certain instances resort to concrete foundations should geotechnical studies necessitate this.

The images below show typical examples of the preferred mounting technology during and after installations (Photos: Cape EAPrac).

**Figure 6:** Pre-drilling of holes prior to the ramming of steel piles.

Note that the vegetation is not completely removed prior to the drilling and installation of the piles.


**Figure 7:** pre-drilled holes are backfilled with a wet sand mixture and steel piles placed in position ready for ramming.

The predrilled holes are backfilled on a continuous basis to ensure that no fauna is trapped in the holes


**Figure 8:** Ramming of steel piles into the pre-drilled / backfilled holes.

Note that the ramming machines follow the same entry and exit routes as the drilling rigs in order to reduce the impacts of trampling and compaction.

**Figure 9:** Completed ramming and assembly showing vegetation remaining intact beneath the modules.

**Figure 10:** Showing vegetation re- establishing along the driplines of the arrays within weeks after installation.

## 2.3 AUXILIARY BUILDINGS

The auxiliary buildings will comprise of the following as a minimum:

- 33 kV switch room;
- Control building/ centre;
- Offices;
- Warehouses;
- Canteen & visitors centre;
- Staff lockers & ablution; and
- Gatehouse and security.

## 2.4 GRID CONNECTION AND CABLING

Sunveld Solar PV intends to connect to the Aurora MTS (400/132 kV) located ± 23km to the South of Solar PV.

The two proposed Sunveld Solar PV On-Site Substations will each be up to 4.5ha (IPP component) and feature a step-up transformer/s to transmit electricity via a 132 kV OHL between Eskom side of the substation/ switching station and onto the Aurora MTS.

The Eskom side of the Substation and the grid connection corridor to the Aurora MTS will be assessed as part of a Separate Environmental Process that will be initiated simultaneously with the Environmental Impact Reporting Phase of the current Environmental Process.

## 2.5 BATTERY ENERGY STORAGE SYSTEM

A BESS Health, Safety and Environment Risk Assessment has been compiled by ISHECON and is attached in **Appendix E8** of this Draft Scoping Report.

Renewable energy can currently achieve lower costs than fossil fuels. By incorporating energy storage systems (BESS) into renewable energy facilities, electricity can be stored during generation peaks and supplied during demand peaks.

The proposed Sunveld Solar PV BESS will have a maximum footprint of up to 29 ha and will be centrally situated adjacent to the on-site substations,

The table below outlines the BESS Technology Alternatives that will be considered and assessed as part of this Environmental Process.

**Table 3:** Details of the Proposed BESS that will be considered and assessed as part of the Sunveld Solar PV Facility.

| **BESS Components** | |
|---|---|
| Capacity of BESS facility (in MWh) | 2400 MWh |
| Type of technology (preferred) | Redox Flow, -Vanadium Redox Flow Battery (VRB) |
| Type of technology (alternatives) | Solid State including Lithium-Ion, Sodium-Ion and others, Liquid Metal or other technology types may be considered |
| Structure height | Containerised batteries less than 5m high except for lightening conductors and vent pipes. Storage tanks may be required for the VRB and could be 6m high, if the non-containerised type of VRB battery is installed. |
| Surface area to be covered (including associated infrastructure such as roads) | 28 ha<br>(including electrolyte storage tanks of 18 ha for redox flow battery) |
| Structure locations | 2 sites each ± 14 ha. |


**Figure 11:** Showing the proposed position of the BESS within the Study Site[18].

The Draft Environmental Impact Assessment Report will include further details of the BESS system once the Detailed Specialist BESS Risk Assessment is completed.

## 2.6 ACCESS ROUTES AND INTERNAL ROADS.

The proposed project site is accessible via the provincial R399 road which bisects the site.

The 4 existing access points from the R399 will be used to access the Sunveld Solar PV Facility[19].

The internal road network will follow existing farm tracks for the most part and will consist of gravelled roads, up to 5 m in width.

[18] This is the proposed position as per layout alternative 3 and is subject to change pending the outcome of the specialist studies, including the BESS risk assessment during the Environmental Impact Reporting Phase of the Environmental Process.

[19] It is proposed that only the central access road will be permanent. The east and west accessed will be used during construction only.


**Figure 12:** Showing the position of the main access roads within the Study Site.

A detailed transport and traffic impact study will form part of the Environmental Impact Reporting phase of this environmental process. Precautionary measures will be taken to mitigate the risk of ground disturbances where access roads will be constructed. Special attention will be given to drainage, water flow and erosion by applying appropriate building methods.

## 2.7 TRANSPORT OF COMPONENTS AND STAFF

A Traffic Impact and Transportation Assessment will form part of the Environmental Impact Reporting phase of this environmental process.

This section will be updated on receipt of this plan.

It is anticipated that the following vehicles will access the site during construction:

- Conventional trucks within the freight limitations to transport building material to the site;
- 40ft container trucks transporting solar panels, frames and the inverter, which are within freight limitations;
- Light Differential Vehicle (LDV) type vehicles transporting workers from surrounding areas to site;
- Drilling machines and other required construction machinery being transported by conventional trucks or via self-drive to site; and
- The transformers and BESS infrastructure will be transported as abnormal loads.

There are two viable options for the port of entry for imported components - the Port of Ngqura in the Eastern Cape and the Port of Saldanha in the Western Cape. A third option, the Port of Cape Town, could be considered for smaller components.

It is envisaged that most materials, water, plant, services and people will be procured within a 120km radius from the proposed site; however, this would be informed by the procurement requirements.

## 2.8 SERVICES REQUIRED

The services required for the construction and operation of the proposed Sunveld Solar PV Facility are outlined below.

### 2.8.1 Solid Waste

Solid waste during the construction phase will mainly be in the form of construction material, excavated substrate and domestic solid waste. All waste generated during construction will be separated into recyclable components and removed from site by a licenced recycling service provider. All non recyclable waste will be disposed of in scavenger proof bins and temporarily placed in a central location for removal by the contractor. Any other waste and excess material will be removed once construction is complete and disposed of at a registered waste facility. Excess excavation material will either be spoiled offsite at a registered facility or used for landscaping berms[20] within the overall PV footprint.

### 2.8.2 Sewerage.

During the construction phase, chemical ablution facilities will be utilised. These ablution facilities will be maintained, serviced and emptied by an appointed contractor, who will dispose of the effluent at a licensed facility off site.

Once construction is complete, the chemical ablution facilities will be removed from the site. A conservancy tank which will be regularly emptied by a registered service provider will be installed at the Operations & Maintenance building and on-site/ facility substation and the BESS control room.

### 2.8.3 Hazardous substances

During the construction phase, use of the following hazardous substances is anticipated:

- Cement associated with piling activities and construction of buildings and inverter station plinths;
- Petrol/ diesel for construction plant;
- Electrolytes associated with the BESS and
- Limited amounts of lubricants and transformer oils.

Temporary storage and disposal of hazardous waste will be done in compliance with relevant legislation (i.e., stored in covered containers with appropriate bunding). Refuelling areas to be in designated positions, with suitable mitigation to reduce the risk of hydrocarbon spills. In Terms of the EMPr, Spill kits will be available on site to clean up any minor spillages.

[20] If any landscaped berms are constructed around infrastructure, these must be done in such a way as to comply with the overall Stormwater design philosophy of maintaining sheet flow.


**Figure 13:** Hydrocarbon Spill Kits must be in place within the site camp and in the field within 500m of any drilling or ramming activity.

### 2.8.4 Water Supply

Water required during the construction and operation phases will be sourced from (in order of priority):

1. The Local Municipality - Specific arrangements will need to be agreed with the Berg River Local Municipality in a Service Level Agreement (SLA). Most likely the water will be either trucked in, or otherwise made available for collection at their Water Treatment Plant via a metered standpipe.
2. Investigation into a third-party water supplier which may include a private services company.
3. The investigation of drilling a borehole on site, which includes complete geohydrological testing, groundwater census and a Water Use License Application (WULA) in terms of section 21a of the National Water Act, 1998.

## 2.9 PROJECT NEED AND DESIRABILITY

In keeping with the requirements of an integrated Environmental Impact process, the DEA&DP *Guidelines on Need and Desirability (2010 & 2011)* were referenced to provide the following estimation of the activity in relation to the broader societal needs. The concept of need and desirability can be explained in terms of its two components, where *need* refers to *time,* and *desirability* refers to *place*. Questions pertaining to these components are answered in the Sections below.

The section above (overview to alternative energy in South Africa and the Western Cape) considers the overall need for alternative, so-called 'green energy' in light of the known environmental burdens associated with the impact of coal power generation through which most of our country's electricity is currently being generated. Associated aspects such as air pollution, water use and carbon tax are discussed in order to further explain the need and desirability for 'green energy' projects in general.

This section however considers the need and desirability of this specific project at this point in time.

### 2.9.1 Feasibility consideration

The commercial feasibility for the proposed up to 600MW$_{AC}$ Sunveld Solar PV to be built on private land near Velddrif, has been informed by its contextual location, and economic, social and environmental impacts and influence. The project will gather sufficient information and conduct studies of the site and the region to make qualified and reliable assumptions on the project's various impacts (This will take place during the Environmental Impact Reporting Phase of this Environmental process).

### 2.9.2 Solar Resource & Energy Production

The economic viability of a solar PV facility is directly dependent on the annual solar irradiation at the site.

Berg River receives relatively high Global Horizontal Irradiation (GHI). The GHI for the site is in the region of approximately 2,020 kWh/m$^2$/annum. The irradiation level is an important factor in a highly competitive bidding environment; the economic viability of a project is a critical success factor.

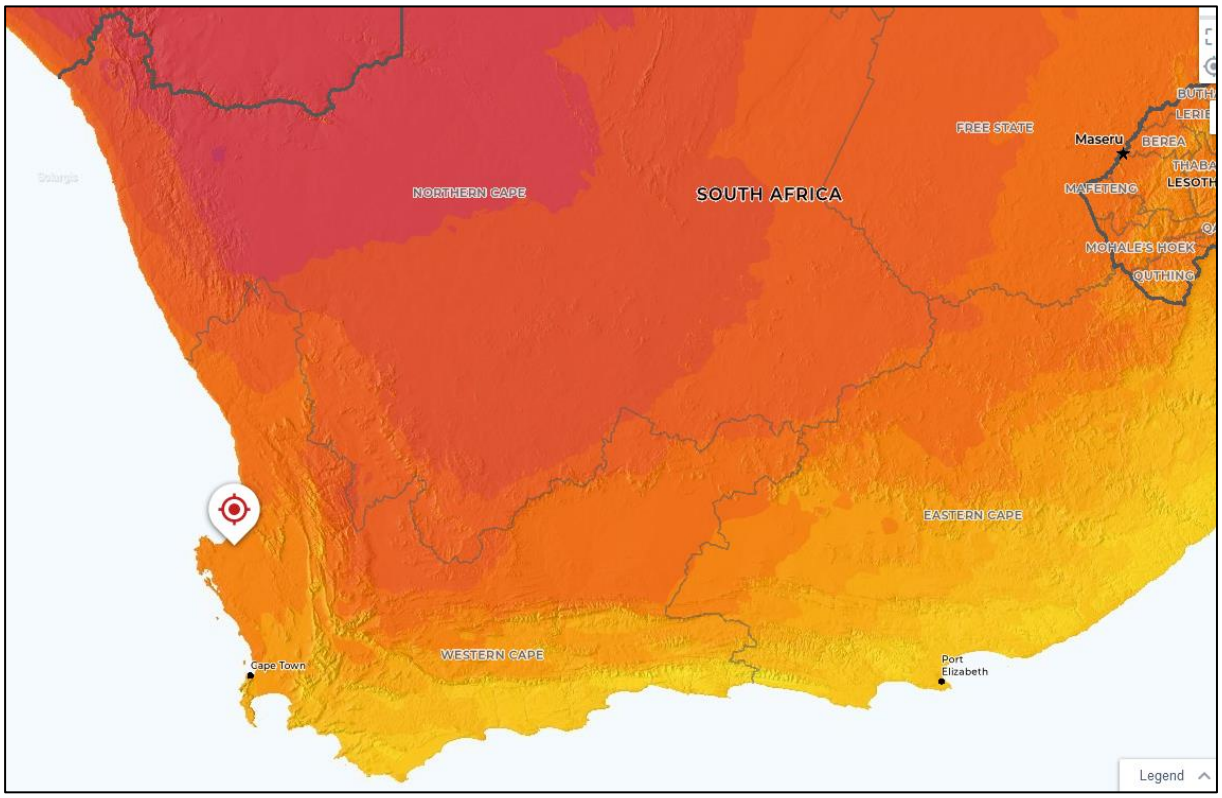


**Figure 14:** Global Horizontal Irradiation of the Sunveld Solar PV Facility (Solar Atlas.2023)

### 2.9.3 Access to Grid

The Aurora Main Transmission Substation (MTS) is located approximately 23 km south of the Sunveld Solar PV site[21]..

[21] The grid connection and associated infrastructure will be assessed as part of a separate environmental process

Ease of access into the Eskom electricity grid is vital to the viability of a solar PV facility. Projects which are in close proximity to a connection point and/or demand centre are favourable, and reduce the losses associated with power transmission.

In addition, Eskom's '2040 Transmission Network Study' has drawn on various scenarios to determine the grid's development requirements, as well as to identify critical power corridors for future strategic development, of which the Western corridor[22] is one of these.

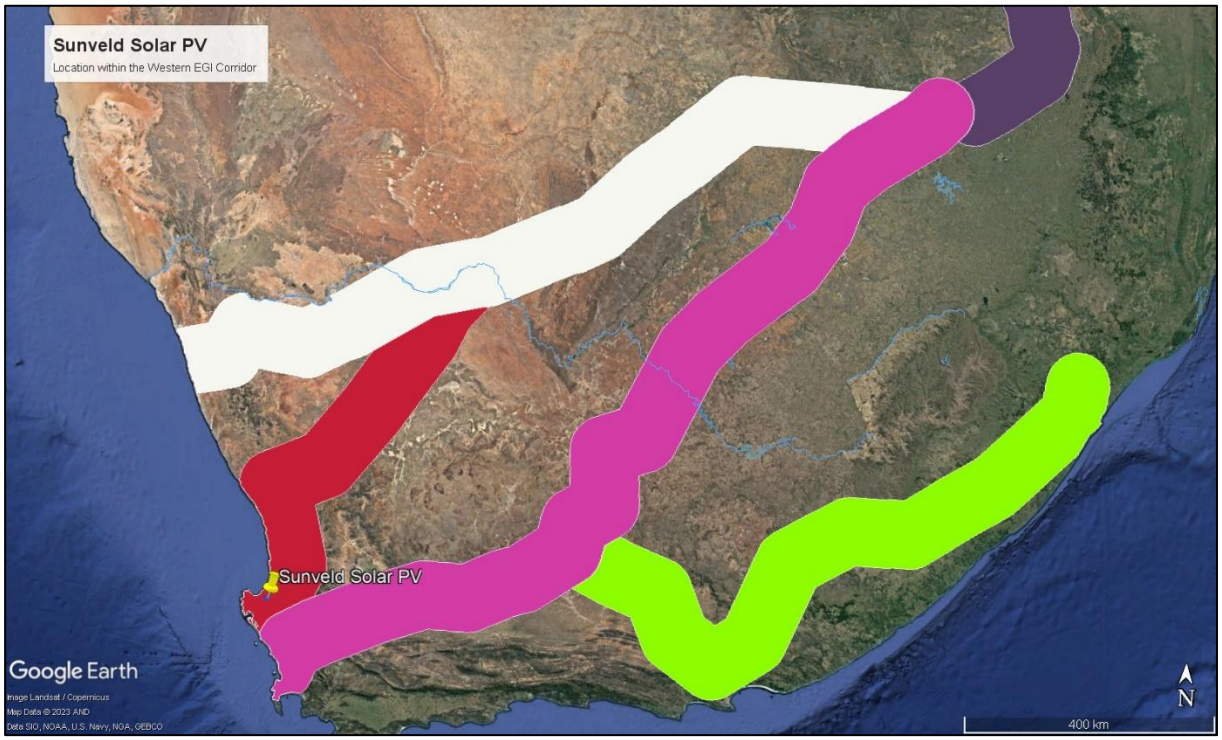


**Figure 15:** Plan showing Sunveld Solar PV within the Western Strategic Electrical Grid Corridor.

### 2.9.4 Site Suitability

Among the positive characteristics of the Sunveld Solar PV site is its flat nature, and accessible location, facilitating the delivery of infrastructure, and the construction and assembly process.

The proximity of the site to the R399 decreases the impact on secondary roads from the traffic going to and from Sunveld Solar PV during construction and operations.

The relatively close proximity of the existing Eskom Aurora MTS also allows for connection via a relatively short distribution line. As the site is not used for intensive agricultural purposes, Sunveld Solar PV will therefore not significantly interfere with the agricultural productivity of the area.

### 2.9.5 Social and Economic impact

A social impact assessment will be undertaken During the Environmental Impact Assessment Phase of the Environmental Process.

### 2.9.6 Employment & Skills Transfer

The benefits of renewable energy facilities to local regions are not confined to the initial investment in the project. They also provide a reliable and on-going income for landowners and municipality, creating

[22] The Sunveld Solar PV and the associated grid connection falls within this Western EGI Corridor.

direct employment opportunities for locals, as well as flow-on employment for local businesses through provision of products and services to the project and its employees.

Sunveld Solar PV will have a positive impact on local employment. During the construction phase, the project will employ approximately 350 individuals per 50 Megawatt Area of various qualifications. The majority will be provided by the local labour market.

During operations, Sunveld Solar PV is expected to have up to 30 employment opportunities per 50MW area ranging from security staff to administration and artisans[23].

### 2.9.7 Need (time)

In accordance with the guidelines on need and desirability, a project should be able to answer a series of questions to demonstrate need. These are highlighted in the table below:

Table 4: Project Need Analysis

| Need | Discussion | |
|---|---|---|
| Is the land use considered within the timeframe intended by the existing approved Spatial Development Framework (SDF)? (I.e., is the proposed development in line with the projects and programmes identified as priorities within the credible IDP? | Yes | One of the Key Transitions per sector as proposed by Western Cape Infrastructure Framework is to promote the development of renewable energy plants in the Province and associated manufacturing capability. |
| Should the development occur here at this point in time? | Yes | The proposed Sunveld Solar PV energy facility is to be located outside the Velddrif urban edge, but within a legislated EGI corridor, and would promote diversification to the local economy as well as serve as a catalyst for further expansion in the stream of sustainable renewable energy development within this Corridor. |
| Does the community / area need the activity and the associated land use concerned? | Yes | The Berg River Local Municipality identified the opportunity for renewable energy projects through their SDF and IDP processes, which include public participation.<br><br>The proposed Sunveld Solar PV development will allow for a diversification of employment, skills and contribute to the potential development of small business associated with its construction, operation and maintenance activities.<br><br>The proposed Sunveld Solar PV development will contribute electricity to the constrained Western Cape and National electrical network, contributing to a provincial and national need. |
| Are the necessary services with adequate capacity currently available? | partially | Sunveld Solar PV requires the installation of an overhead power line to connect to the existing Eskom Aurora Substation[24] (feed into the national grid system), as well as part of the access road to the development site from the R399 (following existing farm tracks for most part). |

[23] These estimated figures will be reviewed and confirmed by the Social Specialist during the EIR phase of the Environmental process.

[24] To be assessed as part of a separate environmental process.

| Need | Discussion | |
|---|---|---|
| | | The cost of supplying the new infrastructure will be covered by the Applicant, and the impacts thereof have been assessed in this environmental process and the additional process to be initiated.<br><br>The water required for the construction and operation of Sunveld Solar PV will be sourced from the Berg River Municipality (preferred option) and will be supplemented by stored rainwater.<br><br>The applicant may at a later stage consider the utilisation of groundwater to supplement this supply, this will however be subject to approval in terms of the National Water Act.<br><br>Construction waste (general waste) will be disposed of at the existing landfill sites. Defunct and damaged modules identified during construction will be returned to the supplier for recycling and/or disposal. |
| Is this development provided for in the infrastructure planning of the municipality? | Yes | Yes. Attracting private investment and the employment opportunities associated with renewable energy development are identified a strategy to create sustainable urban and rural settlements. |
| Is this project part of a national programme to address an issue of national concern or importance? | Yes | In order to meet the increasing power demand within South Africa, Eskom has set a target of 30% of all new power generation to be derived from independent power producers (IPPs). The Applicant is one such IPP which intends to generate up to 600MW of electricity from the proposed Sunveld Solar PV, for input into the national grid via the Aurora Substation). The proposed Sunveld Solar PV is also situated within a legislated strategic EGI Corridor. |

### 2.9.8 Desirability (place)

In accordance with the guidelines on need and desirability, a project should be able to answer a series of questions to demonstrate desirability. These are highlighted in the table below:

Table 5: Project Desirability Analysis

| Desirability | Discussion | |
|---|---|---|
| Is the development the best practicable environmental option for this land / site? | Yes | The target property is outside the Velddrif Urban Edge, within a legislated EGI Corridor. The property has a poor agricultural potential due to the arid climate and other limiting factors. These factors have rendered the property with limited land use option alternatives. Considering these factors, it is very unlikely to be considered for an alternative land use such as urban development. |
| Would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF? | No | The Berg River IDP aligns with the National Development Plan which states that at least 20 000 MW of renewable energy should be contracted by 2030.<br><br>The IDP states that the only alternative energy source at this stage is the installation of LED lights by the Municipality. The IDP also confirms Department of Energy has awarded a private company a license as a provider of solar energy to be fed into the Eskom grid for the provision of solar energy in the vicinity of Aurora, which provides corporate social beneficiation to this Community. The same corporate social beneficiation can be expected in the vicinity of the proposed Sunveld Solar PV. |

| Desirability | Discussion | |
|---|---|---|
| Would the approval of this application compromise the integrity of the existing approved environmental management priorities for the area? | unlikely | According to the national vegetation map (Mucina & Rutherford 2018, the solar development site lies within a vegetation type that is classified as Endangered. The proposed positioning of the facility to fall predominantly within the transformed areas of the property will reduce the impact on this endangered vegetation type. |
| Do location factors favour this land use at this place? | Yes | The region has been identified as being viable areas for solar energy generation due to the following factors:<br>• Good solar radiation (compared to other regions within the province);<br>• Close to existing main transport routes and access points;<br>• Relatively close to connection points to the local and national electrical grid; and<br><br>The proposed site is furthermore situated within a legislated Strategic EGI Corridor and as such has been subjected to a detailed Strategic Environmental Assessment in which highly sensitive landscapes were already excluded from these areas.<br><br>The ecological sensitive areas on and surrounding the solar site have informed the optimal location and layout for the proposed solar project, in order to minimise the impact on the receiving environment, subject to implementation of mitigation measures. |
| How will the activity or the land use associated with the activity applied for, impact on sensitive natural and cultural areas? | Yes | The alternatives considered for the solar development have been iteratively designed and informed by various investigations and assessments that considered both the natural and cultural landscapes. The natural and culturally sensitive areas have been identified and where possible, avoided to prevent negative impacts on such areas. |
| How will the development impact on people's health and wellbeing? | Yes | The site is located outside of the Velddrif Urban Edge and as a result is unlikely to impact negatively on the community's health and wellbeing.<br>The closest populated settlement is situated more than 1.5km from the site. |
| Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs? | Unlikely | The next best land use alternative to the solar facility is limited agriculture (the status-quo). However, the proposed development site does not have any significant agricultural value and has not been utilised for any intensive agricultural purposes.. The development of the proposed solar facility would constitute the loss of approximately 700ha of the overall property. The economic benefits and opportunities that the proposed solar development holds for the landowner and the local economy of the municipal area cannot be recovered from the current or potential agricultural activities.<br><br>The opportunity costs in terms of the water-use requirements of Sunveld Solar PV are within acceptable bounds if one considers the minimal demand on the resources. |
| Will the proposed land use result in unacceptable cumulative impacts? | Unlikely. | The sites are within the legislated Strategic EGI corridors which have been identified as an area with high potential for Electrical Grid Infrastructure.<br><br>The potential for further, renewable energy developments in the area cannot be discounted (as several have already been approved or are in progress). |

| Desirability | Discussion | |
|---|---|---|
| | | The significance of the cumulative impacts will be assessed in detail in the Environmental Impact reporting Phase of this environmental Process. |

## 2.10 SITE SELECTION PROCESS

The site selection process followed a two-stage approach; firstly, to select the property for the proposed development (farm Kruispad 120 and on the farm Doornfontein A 118) and secondly, to select the footprint of the proposed development within the farm portion.

### 2.10.1 Property Selection

The following criteria were taken into account by the applicant when selecting the property for the proposed development of the Sunveld Solar PV Facility.

#### 2.10.1.1 Proximity to towns with a need for socio-economic upliftment

The proposed Sunveld Solar PV facility is situated approximately 7 km southeast of Velddrif in the Western Cape Province.

According to the Berg River IDP, a clear stagnation trend is evident in the local economy, post 2015. The diversification of Economic opportunities is highlighted as a strategic objective within the municipality to address this.

To this extent the proposed Sunveld Solar PV Facility is situated in close proximity to the Velddrif town. Consequently, local labour would be easy to source, which fits in well with the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) economic development criteria for socio-economic upliftment.

#### 2.10.1.2 Access to grid

Eskom's 2040 Transmission Network Study' has drawn on various scenarios to determine the grid's development requirements, as well as to identify critical power corridors for future strategic development.

The National EGI corridors consisting of five transmission power corridors of 100 km in width have been gazetted by the DFFE following the outcome of the Strategic Environmental Assessment (SEA) which aimed to identify environmentally acceptable routes. The Sunveld Solar PV Facility falls into the Western Corridor (see figure 16 above)

#### 2.10.1.3 Current land use

The Agricultural specialist has confirmed that the cropping potential of the site is severely limited by the combination of climate and soil constraints. The rainfall is low and consequently very marginal for crop production. The soils are very sandy and consequently have very low water and nutrient holding capacity. The low water holding capacity, in combination with the rainfall, provides an insufficient moisture reservoir to reliably carry a crop through the season. The climate and soil constraints mean that the assessed area is not suitable for continuous, profitable crop production

#### 2.10.1.4 The solar irradiation

The economic viability of a solar PV facility is directly dependent on the annual solar irradiation at the site. As outlined in the above section the solar irradiation is favourable for commercial energy generation from PV..

2.10.1.5 Proximity to access road for transportation of material and components

The proximity of the site to the R399 decreases the impact on secondary roads from traffic during the construction and operation phases.

2.10.1.6 Landowner support

The selection of a site where the landowner is supportive of the development of renewable energy is essential for ensuring the success of the project. The landowners do not view the development as a conflict with their current land use practices as they will continue with Game Farming / Conservation activities on the Southern Portions of the properties. The landowners have provided written consent for the proposed Sunveld Solar PV.

### 2.10.2 Footprint selection

The selection of the proposed study area within the affected properties followed a risk adverse, bottom-up approach in order to ensure that the impacts of the proposed developments can be avoided as far as possible. This avoidance approach reduces the degree of mitigation required in order ensure that potential environmental impacts are within acceptable levels.

Please refer to the section below detailing the layout progression and the alternatives that were considered.

## 2.11 CONSIDERATION OF ALTERNATIVES

Sunveld Solar PV will consist of solar PV technology with fixed, single or double axis tracking mounting structures, with a net generation (contracted) capacity of up to 600MW$_{AC}$ as well as associated infrastructure including BESS.

In terms of the of the guidelines on consideration of alternatives, alternatives can include:

- Site Alternatives (please refer to the site selection process detailed in section 2.10).
- Technology Alternatives (please refer to section 2 where technology alternatives are discussed in further detail).
- Layout Alternatives (discussed below).

In compliance with the regulations, as a minimum, the No-Go Alternative must be considered and assessed.

### 2.11.1 Layout Alternatives

The following layout alternatives have been considered thus far in this environmental process. Further refinement of the Preferred Layout Alternative (Layout Alternative 3) will take place during the Environmental Impact Reporting Phase.

2.11.1.1 Initial Assessment Area / Study site

The farm Kruispad 120 and on the farm Doornfontein A 118 situated approximately 7.5 km East of Velddrif in the Western Cape Province, was identified for the development of the proposed Sunveld Solar PV (see the site selection process outlined in section 2.10).

The Northern Section of the properties with an extent of approximately 2360ha was selected as the initial assessment area / study site. This area was selected after discussions with the landowners and was positioned in an area where the landowners were not undertaking any extensive agricultural and game farming activities. It was also selected to be set back as far as possible from the Berg River.


**Figure 16:** Initial Assessment Area / Study Site

The initial study area did not consider any environmental sensitive areas and was driven primarily by its proximity to the R399 access road as well as reduced overhead powerline (OHL) distance to connect into the Aurora Main Transmission Substation (MTS), located ± 23 km to the South.

#### 2.11.1.2 Layout Alternative 2

Layout alternative 2 was developed, taking into account a desktop sensitivity screening of the study site and consideration of the previous environmental assessment process[25] that was undertaken on the properties in 2018 and 2019.

[25] It must be noted that this previous assessment was undertaken prior to the Specialist Protocols, which largely accounts for the difference in the spatial sensitivities.

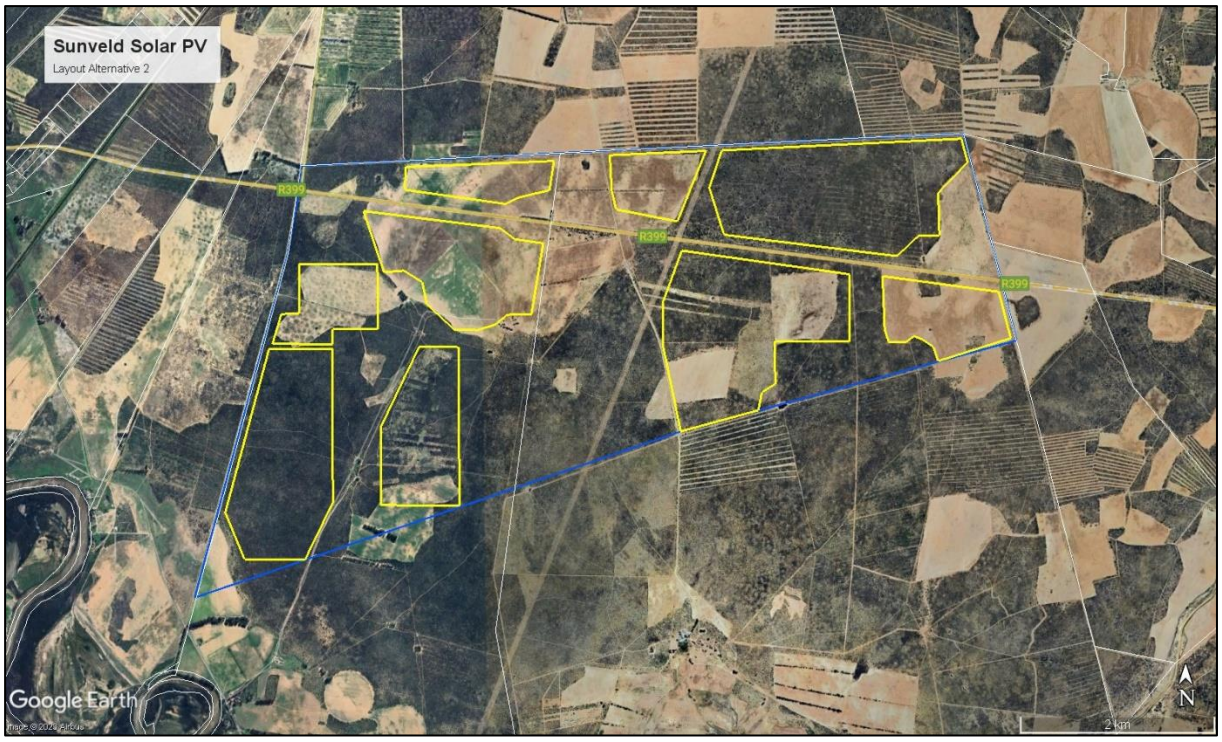


**Figure 17:** Layout Alternative 2.

Layout alternative 2 is approximately 1162.5ha in extent.

2.11.1.3 Site Sensitivity Assessment

Following the identification of the initial assessment area / study site and the development of Layout Alternative 2, the following specialists undertook Site sensitivity verifications of the of the Study Site[26]:

- Visual – Mr Stephen Stead of Visual Resource Management Africa (VRMA)
- Botanical – Ms Tarryn Martin of Biodiversity Africa
- Terrestrial Biodiversity – Mr Tarryn Martin and Ms Amber Jackson of Biodiversity Africa
- Animal Species (excluding Invertebrates and Avifauna) – Ms Amber Jackson of Biodiversity Africa
- Avifauna (including Black Harrier Habitat Modelling) – Mr Albert Froneman with Black Harrier habitat suitability modelling undertaken by Robin Colyn.
- Invertebrate – Dr Jonothan Colville.
- Aquatic Biodiversity – Ms Toni Belcher
- Heritage – Dr Jayson Orton.
- Agriculture – Mr Johann Lanz
- BESS Risk – Ms Debbie Mitchell of ISHECON

These participating specialists spatially mapped the sensitivities of the site according to their specific disciplines. These sensitivities are depicted in the maps below.

[26] It must be noted that the site sensitivity assessment was undertaken prior to the development of Layout Alternative 3 (Preferred Layout), which was developed specifically in response to the various sensitivities.


**Figure 18:** Delineated Aquatic Biodiversity Features and Buffers (Belcher, 2023)

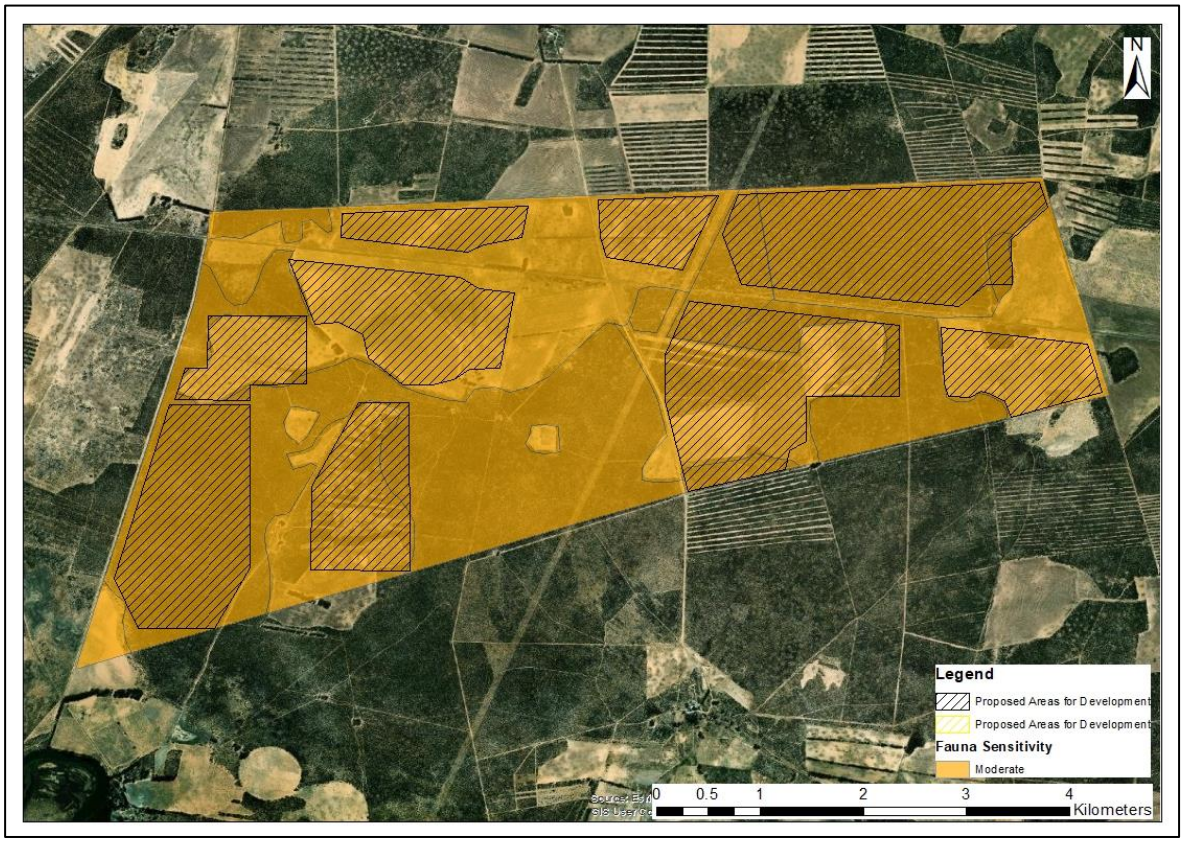


**Figure 19**[27]: Animal Species Site Sensitivity excluding invertebrates and Avifauna(Biodiversity Africa, 2023)

[27] The proposed development areas depicted in figures 22, 23 and 24 are those of Layout Alternative 2, prior to the development of Layout Alternative 3 (the preferred layout)

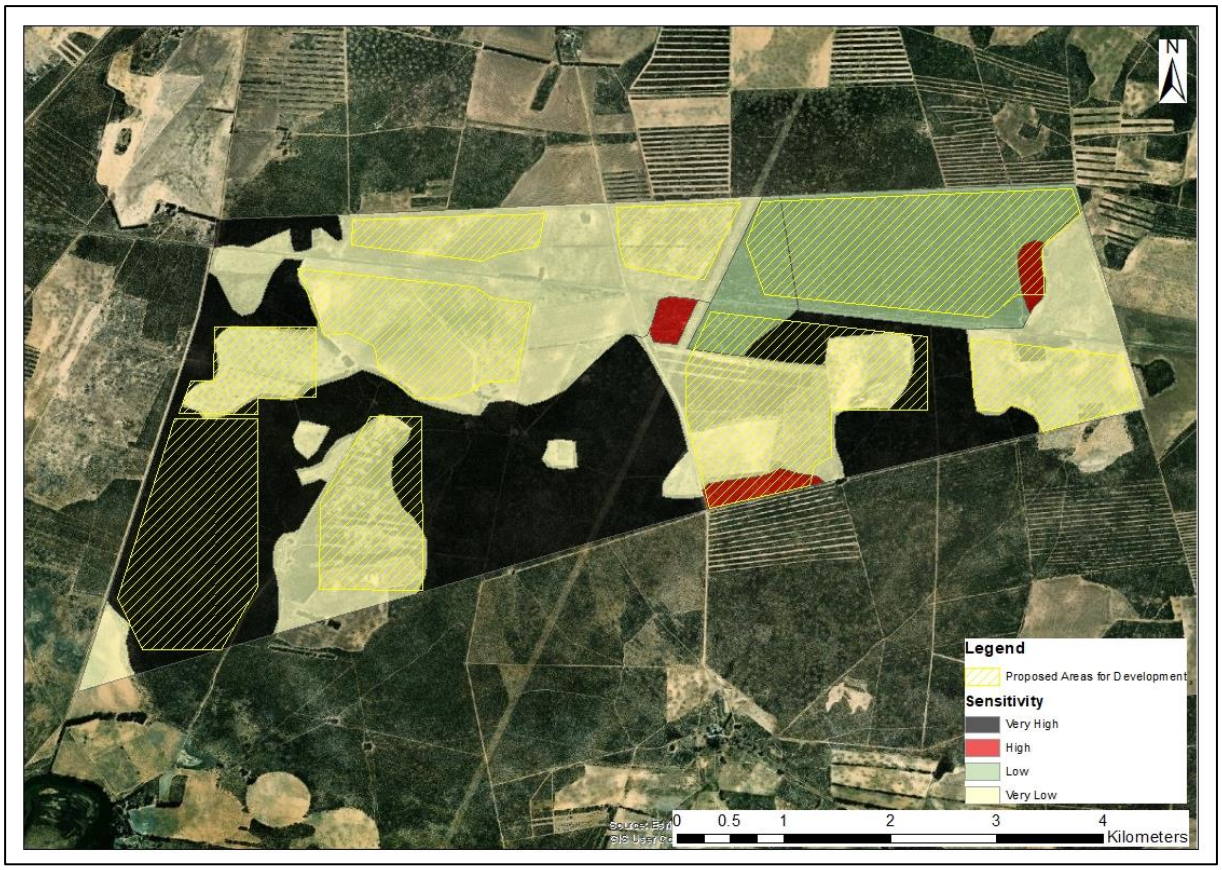


**Figure 20:** Botanical Site Sensitivity (Biodiversity Africa, 2023).

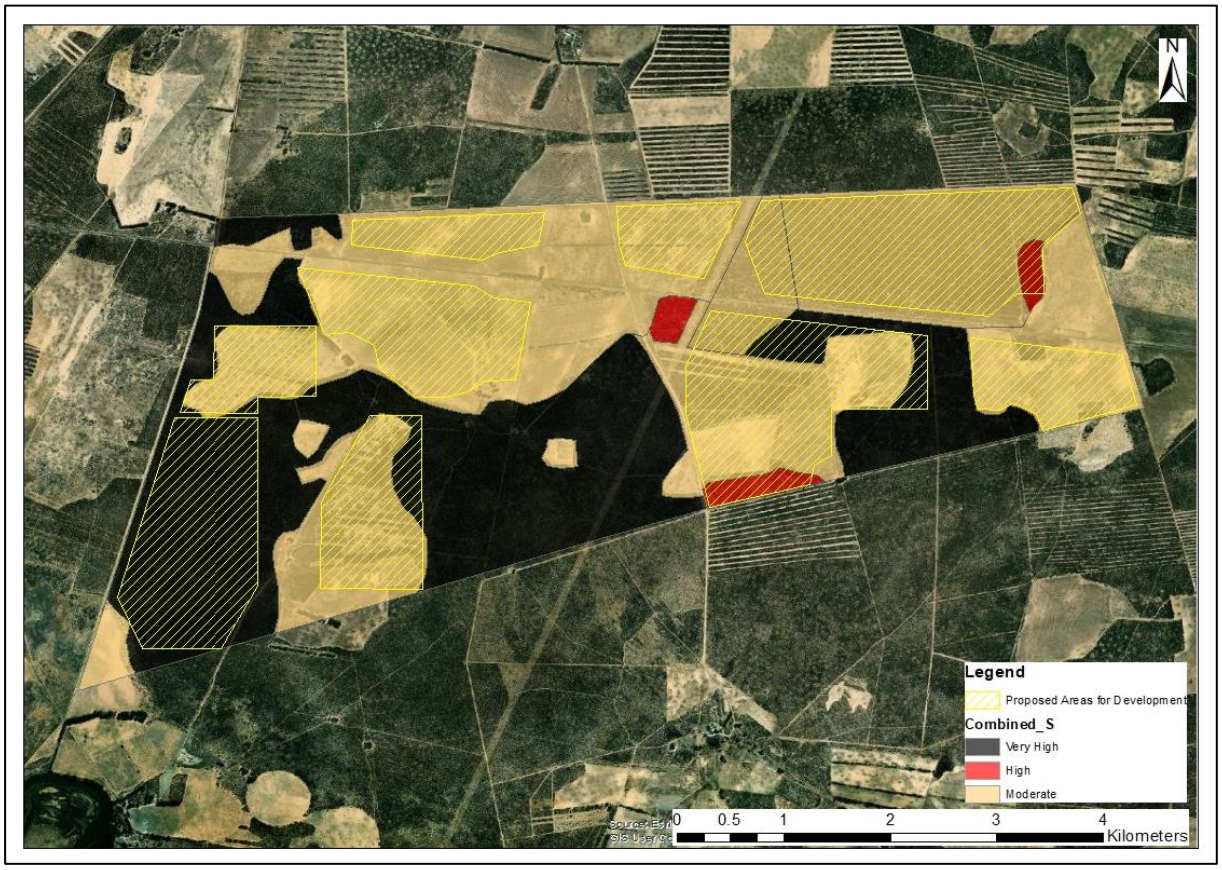


**Figure 21:** Combined Terrestrial Biodiversity Site Sensitivity (Biodiversity Africa, 2023)

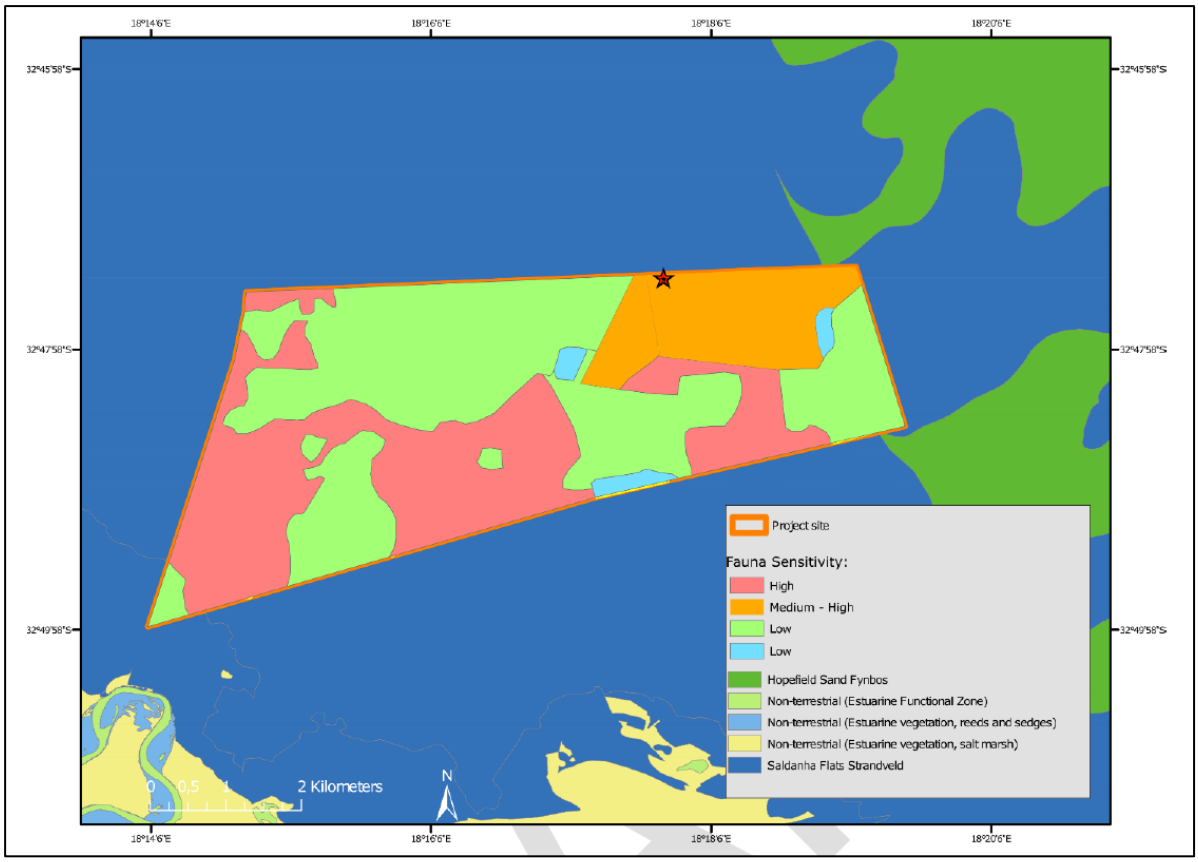


**Figure 22:** Invertebrate Site Sensitivity (Colville, 2023).

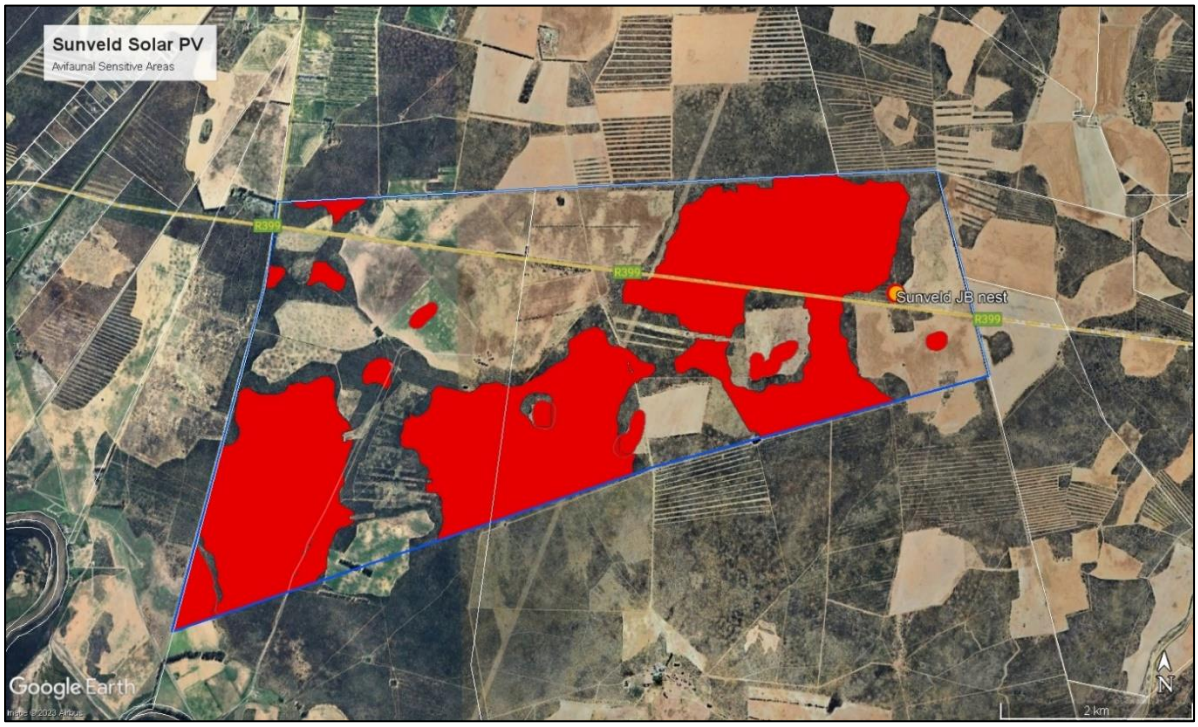


**Figure 23:** Avifaunal Site Sensitivity[28] - High Sensitivity Areas (Froneman, 2023)

[28] The sensitive Avifaunal Areas include, Suitable Black Harrier Habitat, Aquatic Features as well as a Jackal Buzzard Nest and Buffer.


**Figure 24:** Visually Sensitive Areas (Stead, 2023)

The Agricultural specialist confirmed the entire study site to be of medium sensitivity and did not identify any agricultural features or landscapes that would need to be avoided.

The Heritage Specialists did not identify any specific features that would need to be avoided by the proposed development. A detailed Heritage Impact Assessment will be undertaken in the next phase of the environmental process and the layout adapted where necessary.

These sensitive features were then utilised to inform the Preferred Layout alternative (Layout Alternative 3) as discussed below.

#### 2.11.1.4 Layout Alternative 3 (Preferred)

Based on the outcome of the site sensitivity assessment, the preferred layout alternative (Layout Alternative 3) as depicted below was developed. This is the preferred layout presented to stakeholders as part of the Scoping process and will be further refined in the next stage of the Environmental Process.

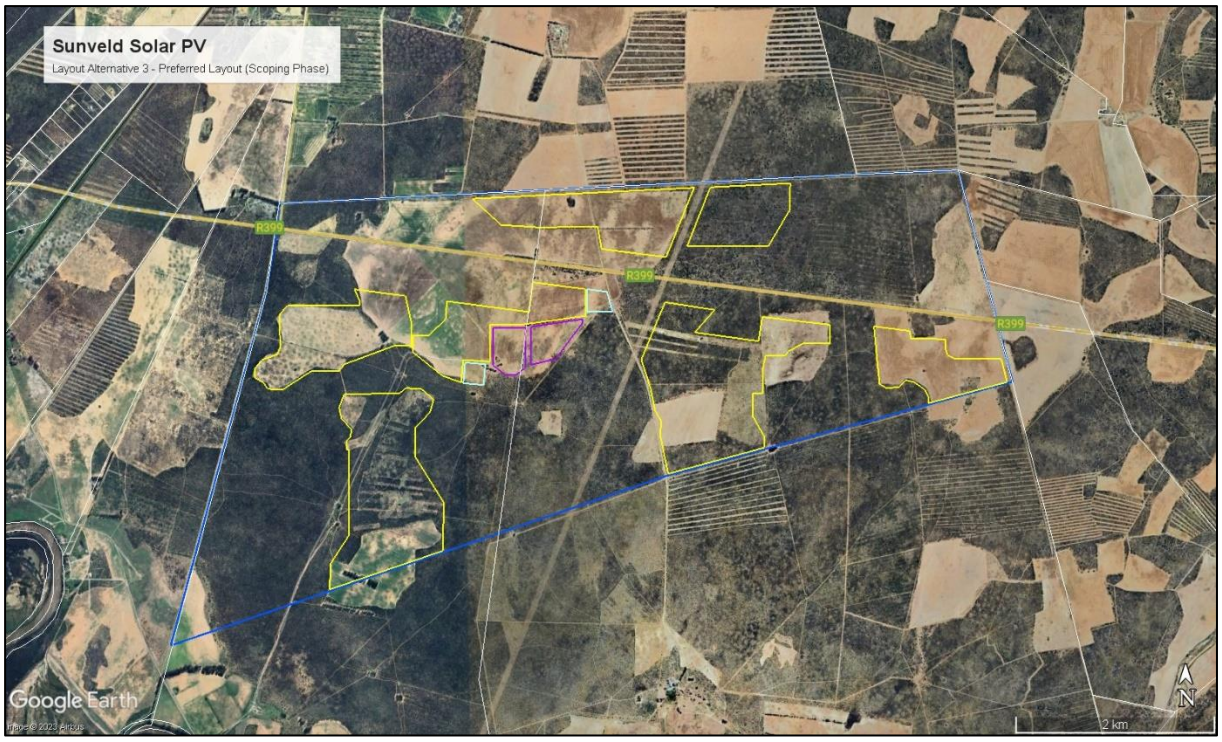


**Figure 25:** Layout Alternative 3 (preferred) for Sunveld Solar PV.

This Layout was developed to avoid as many of the highly sensitive features as possible, while allowing the proposed development to remain technically and economically feasible.

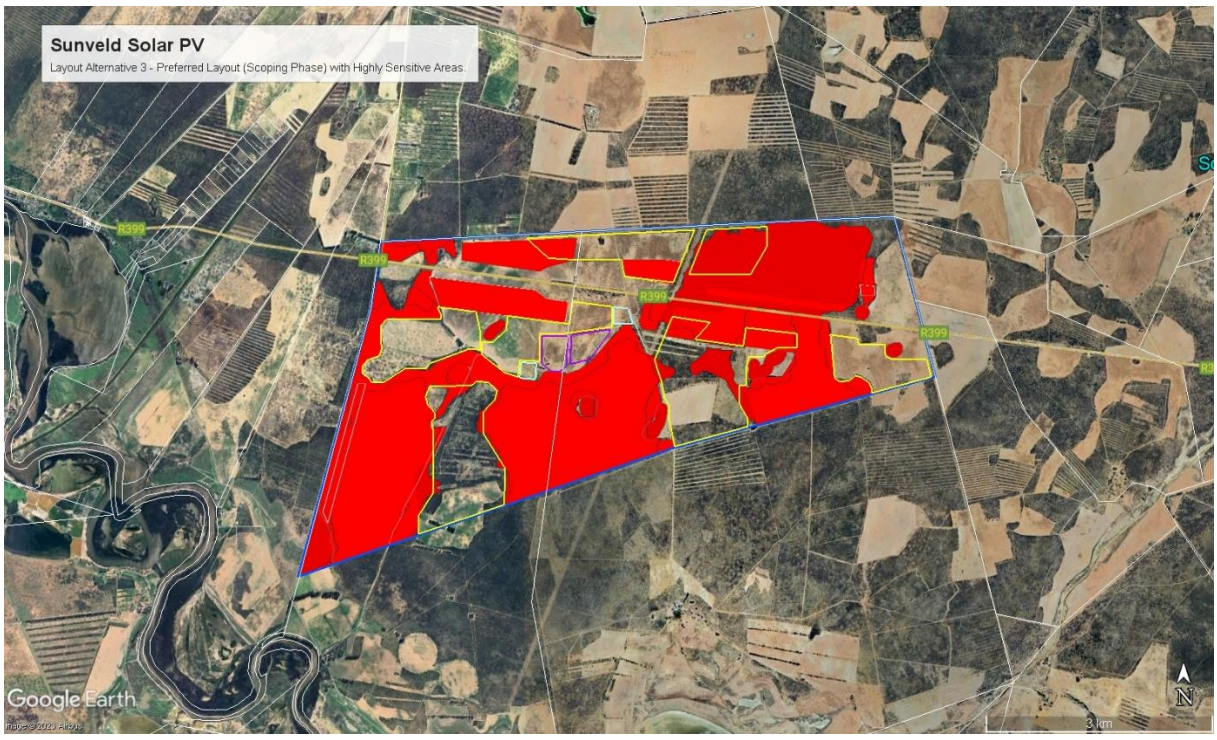


**Figure 26:** Layout Alternative 3 (Preferred Layout) – depicting the combined Very High and High sensitivity features from all specialist disciplines.

Further engagements have been had where proposed infrastructure intersects with sensitive features. This will be assessed in detail in the Environmental Impact Reporting phase of this Environmental Process and this currently preferred layout alternative will be adapted further where necessary.

### 2.11.2 Grid Connection Alternatives

The EGI (Eskom component) for Sunveld Solar PV is being assessed as part of a separate environmental process, the alternatives in respect of the EGI will be discussed in that environmental process.

### 2.11.3 Access Road Alternatives

As discussed in section 2.6 above, the proposed access intents to utilise the existing access points from the R399 and furthermore utilise existing farm roads to access each of the PV development areas.

Unless the Traffic Impact Assessment[29] or relevant transport authorities raise concerns with the existing access, no alternatives will be considered (as the utilisation and upgrading of existing road infrastructure will have a significantly lower physical impact than the development of new infrastructure).

### 2.11.4 The no-go alternative

The no-go Alternative (or status quo) proposes that Sunveld Solar PV facility does not go ahead and that the area in proximity to the Eskom Aurora MTS and within the Strategic EGI corridor will remain undeveloped as it is currently.

The land on which the Sunveld Solar PV is proposed is currently vacant and used for limited game and livestock grazing activities and dryland crops, however due to a combination of factors, it has no potential for irrigated crop cultivation (this has been confirmed by the Agricultural Specialist).

The solar-power generation potential of the Berg River Municipal area, particularly in proximity to the existing substations and within the strategic EGI is significant and will persist should the no-go alternative occur.

The no-go alternative will limit the potential associated with the land and the area as a whole for ensuring energy security locally, as well as the meeting of renewable energy targets on a provincial and national scale. Should the no-go alternative be approved, the positive impacts associated with Sunveld Solar PV (increased revenue for the farmer, economic investment, local employment and generation of electricity from a renewable resource) will not be realised.

The no-go alternative will be used as a baseline from which to determine the level and significance of potential impacts associated with the proposed Sunveld Solar PV Facility.

### 2.11.5 Comparison of alternatives

The table below reflects the key environmental advantages and disadvantages of the two layouts (i.e., the initial assessment area, layout alternative 2 and Layout Alternative 3 (Preferred Alternative)[30].

[29] The Traffic Impact Assessment will form part of the EIR phase of the Environmental Process.

[30] The comparative assessment of the EGI alternatives is not included in this report, as these are being assessed as part of a separate Basic Assessment Process.

**Table 6:** Comparison of Advantages and Disadvantages of Layout Alternatives described above.

| Alternative | Preference | Reasons (incl. potential issues) |
|---|---|---|
| **PV Layout Alternatives** | | |
| Layout Alternative 3 | Preferred | - Avoids the majority of high and very high sensitivity habitat.<br>- Topographically suitable.<br>- Avoids all hydrologically sensitive areas.<br>- Avoids the majority of very high avifaunal sensitive areas (namely the Black Harrier habitat, pans & their associated buffers and Jackal Buzzard Nest. |
| Layout Alternative 2 | Less preferred | - Significant encroachment into high and very high sensitivity habitat.<br>- Some encroachment into hydrologically sensitive areas.<br>- Significant encroachment into very high avifaunal sensitive areas (namely the Black Harrier habitat, pans & their associated buffers and Jackal Buzzard Nest.<br>- Concerns regarding visual massing. |
| Initial Assessment Area | Portions Less Preferred, eliminated from further assessment | - Portions of the initial assessment area are topographically unsuitable for the development of PV.<br>- Portions of the initial assessment area consist of high and very high ecologically sensitive areas.<br>- Portions of the initial assessment area high and very high hydrologically sensitive areas.<br>- Portions of the initial assessment area are within areas with a very high avifaunal sensitivity and their buffers. |

Layout alternative 3 will be assessed against the no-go alternative and further mitigation and or avoidance applied during the Environmental Impact Reporting Phase of this Environmental Process.

## 2.12 PROJECT PROGRAMME AND TIMELINES

As mentioned previously Sunveld Solar PV is intended to be bid into the REIPPPP or alternative private power procurement programme.

**Table 7:** Preliminary implementation schedule.

| | Description | Timeline |
|---|---|---|
| **1** | Finalisation of Environmental and other Pre Construction programmes | Second Quarter 2024 |
| **2** | Bidding process | Last Quarter 2024 |
| **3** | Finalisation of agreements | First Quarter 2025 |
| **4** | Procurement of infrastructure | First Quarter 2025 |
| **5** | Construction | 2025 |
| **6** | Commissioning | 2026 |

The table above clearly depicts the dependence of the project on the timelines of any particular procurement programme. Any delay or acceleration within the procurement programme will have a corresponding effect on the timelines of the projects.

Due to the uncertainty regarding the timing of the procurement programmes, the competent authority is herewith requested that the validity period of the environmental authorisation (if authorised) be granted as follows:

- Commencement of Construction Activities within 10 Year's from the date of the Environmental Authorisation.
- Completion of all non operational aspects of the Environmental Authorisation within 10 years of commencement of construction activities.

# 3. LEGISLATIVE AND POLICY FRAMEWORK

The legislation that is relevant to this study is briefly outlined below. These environmental requirements are not intended to be definitive or exhaustive but serve to highlight key environmental legislation and responsibilities only.

## 3.1 NATIONAL LEGISLATION

This section deals with nationally promulgated or nationally applicable legislation associated with the proposed Sunveld Solar PV.

### 3.1.1 The Constitution of the Republic of South Africa

The Constitution of the Republic of South Africa (Act 108 of 1996) states that, everyone has a right to a non-threatening environment and that reasonable measures are applied to protect the environment. This includes preventing pollution and promoting conservation and environmentally sustainable development, while promoting justifiable social and economic development.

The Constitution and Bill of Rights provides 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:
    - prevent pollution and ecological degradation
    - promote conservation; and
    - secure, ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development.

The National Environmental Management Act, NEMA (discussed below) is the enabling legislation to ensure this primary right is achieved.

### 3.1.2 National Environmental Management Act (NEMA)

The current assessment is being undertaken in terms of the **National Environmental Management Act** (NEMA, Act 107 of 1998)[31]. This Act makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority (in this case, the national Department of Forestry, Fisheries and the Environment) based on the findings of an Environmental Assessment.

The proposed development entails a number of listed activities, which require a Scoping & Environmental Impact Reporting process to be followed. Such a process must be conducted by an independent registered EAP[32]. Cape EAPrac has been appointed to undertake this process. The figure below depicts a summary of the Scoping and Environmental Impact Reporting Process.

[31] The Minister of Water and Environmental Affairs promulgated new regulations in terms of Chapter 5 of the National Environmental Management Act (NEMA, Act 107 of 1998), viz, the Environmental Impact Assessment (EIA) Regulations 2014 (as amended). These regulations came into effect on 08 December 2014 and replace the EIA regulations promulgated in 2006 and 2010.

[32] The EAP in this regard is registered with EAPASA under registration number 2019/301

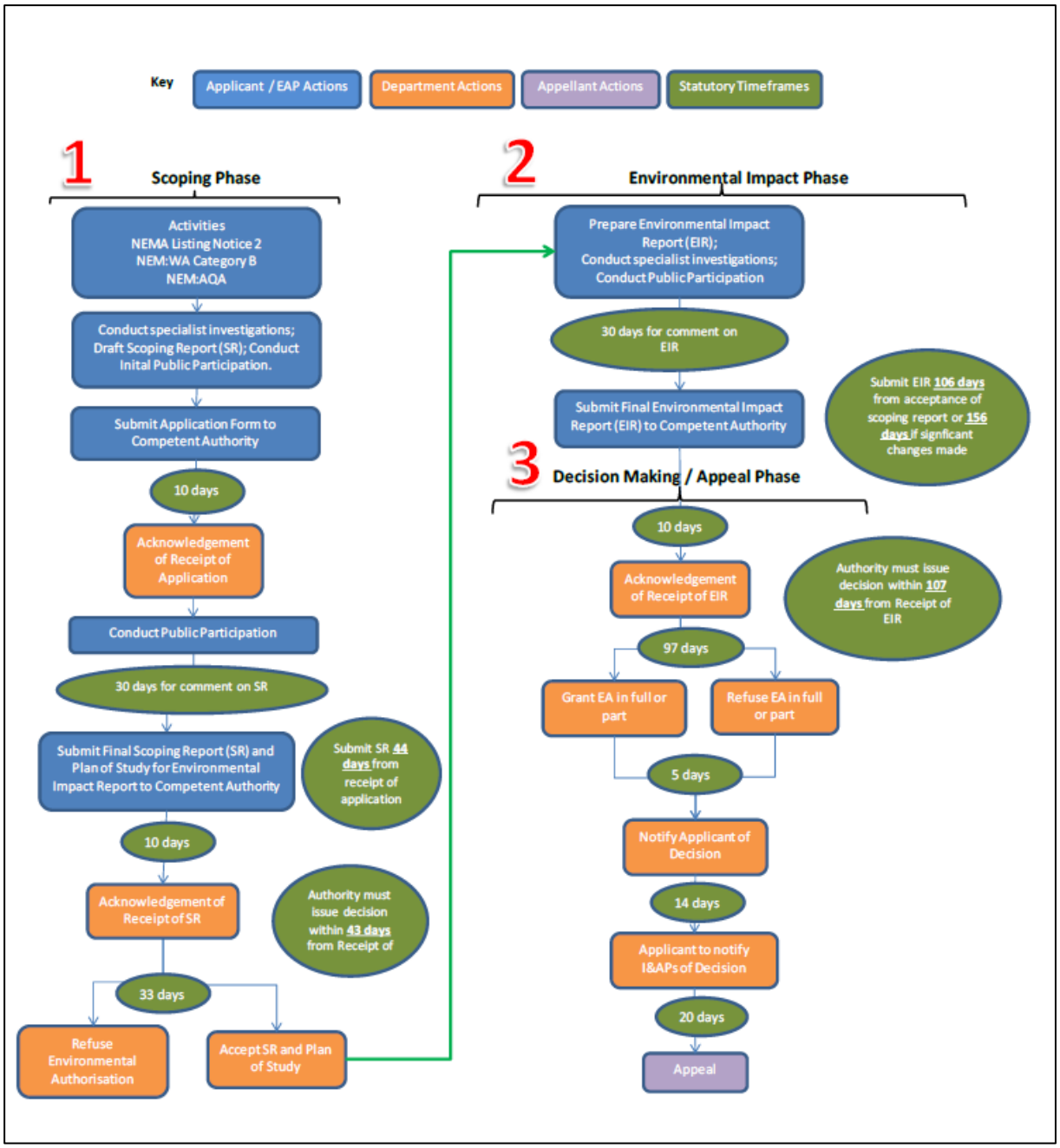


**Figure 27:** Summary of Scoping and Environmental Impact Reporting Process in terms of the 2014 EIA Regulations (as amended).

The listed activities associated with the proposed development, as stipulation under 2014 Regulations **327, 325 and 324** are as follows:

**Table 8:** NEMA 2014 (As amended in April 2017) listed activities applicable to Sunveld Solar PV.

| Activity No(s): | Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1 of the EIA Regulations, 2014 as amended | Describe the portion of the proposed project to which the applicable listed activity relates. Ensure to include thresholds/area/footprint applicable. |
|---|---|---|
| 11(i) | The development of facilities or infrastructure for the transmission and distribution of electricity—<br>(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; | The two on site substations will have a capacity of up to 300MVA. |

| | | |
|---|---|---|
| | | Two 132kV powerlines will be routed in an EGI corridor/servitude from the two on-site substations to the grid connection |
| 12(ii)(c) | The development of—<br>(ii) infrastructure or structures with a physical footprint of 100 square metres or more;<br>where such development occurs—<br>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; | Some of the project infrastructure, such as internal cabling may be routed within 32m of the Pans identified by the aquatic specialist. The relevance of this activity will be determined in the Environmental Impact Reporting phase after layouts are finalised and assessments completed. |
| 14 | The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where<br>such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres. | The BESS proposed will include the storage of dangerous goods in excess of the threshold of this activity. |
| 28(ii) | Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:<br>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; | The proposed PV and BESS Development constitutes Commercial / Industrial use and will occur on a property currently used for agricultural purposes. |
| 48 | The expansion of— (i) infrastructure or structures where the physical footprint is expanded by 100 square metres or more; or<br>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; | Some of the project infrastructure, such as internal cabling may be routed within 32m of the Pans identified by the aquatic specialist. The relevance of this activity will be determined in the Environmental Impact Reporting phase after layouts are finalised and assessments completed. |
| **Activity No(s):** | **Provide the relevant Scoping and EIA Activity(ies) as set out in Listing Notice 2 of the EIA Regulations, 2014 as amended** | **Describe the portion of the proposed project to which the applicable listed activity relates. Ensure to include thresholds/area/footprint applicable.** |
| 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. | The proposed Sunveld Energy Project will have an Electricity Footprint of up to 600 megawatts. |
| 4 | The development and related operation of facilities or infrastructure, for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres. | The BESS proposed will include the storage of dangerous goods in excess of the threshold of this activity. |
| 15 | The clearance of an area of 20 hectares or more of indigenous vegetation. | The proposed Sunveld Energy project will require the clearance of more than 20ha of indigenous vegetation. |
| **Activity No(s):** | **Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3 of the EIA Regulations, 2014 as amended** | **Describe the portion of the proposed project to which the applicable listed activity relates. Ensure to include thresholds/area/footprint applicable.** |
| 4(i)(ii)(aa) | The development of a road wider than 4m with a reserve less than 13,5m.<br>(ii). Areas outside urban areas;<br>(aa) Areas containing indigenous vegetation; | The internal roads for Sunveld energy will have a maximum width of 4m and the main access roads will have a maximum width of 5m. |
| 10(i)(ii) | The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80m³<br>ii. All areas outside urban areas; | The BESS proposed will include the storage of dangerous goods in excess of the threshold of this activity. |

| | | |
|---|---|---|
| 12(i)(i)&(ii) | The clearance of an area of 300m² or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.<br>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEM:BA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;<br>ii. Within critical biodiversity areas identified in bioregional plans; | The vegetation on site is mapped as the endangered Saldanha Flats Strandveld. Portions of the site fall within a Critical Biodiversity Area in terms of the Western Cape Biodiversity Sector Plan. More than 300 Square metres of vegetation will be removed in the endangered vegetation type and the critical biodiversity areas. |
| 14(i)(ii)(c)(i)(ff) | The development of<br>(ii) infrastructure or structures with a physical footprint of 10m² or more;<br>where such development occurs—<br>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;<br>i. Outside urban areas:<br>(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; | Some of the project infrastructure, such as internal cabling may be routed within 32m of the Pans identified by the aquatic specialist. The relevance of this activity will be determined in the Environmental Impact Reporting phase after layouts are finalised and assessments completed. |
| 18(i)(II)(aa) | The widening of a road by more than 4m, or the lengthening of a road by more than 1km.<br>ii. All areas outside urban areas:<br>(aa) Areas containing indigenous vegetation; | The main and internal access roads will require that existing farm tracks be widened by more than 4m in some areas. Existing Farm roads will be lengthened by more than 1km. |

**NOTE:** Basic Assessment as well as S&EIR Activities are being triggered by the proposed development, the Environmental Application Process will follow a Scoping and Environmental Impact Reporting Process.

Before any of the above-mentioned listed activities can be undertaken, authorisation must be obtained from the competent authority, in this case the DFFE. Should the Department approve the proposed activity, the Environmental Authorisation does not exclude the need for obtaining relevant approvals from other Authorities who have a legal mandate in respect of the activity.

### 3.1.3 National Environmental Management: Biodiversity (Act 10 of 2004)

The National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA) provides for listing threatened or protected ecosystems, in one of four categories: critically endangered (CR), endangered (EN), vulnerable (VU) or protected. The Draft National List of Threatened Ecosystems (Notice 1477 of 2009, Government Gazette No 32689, 6 November 2009) has been gazetted for public comment.

The list of threatened terrestrial ecosystems supersedes the information regarding terrestrial ecosystem status in the NSBA 2004. In terms of the EIA regulations, an environmental assessment and authorisation is required for the transformation or removal of indigenous vegetation in a critically endangered or endangered ecosystem if more than 300 square metres will be removed.

NEMBA also deals with endangered, threatened and otherwise controlled species. The Act provides for listing of species as threatened or protected, under one of the following categories:

- **Critically Endangered**: any indigenous species facing an extremely high risk of extinction in the wild in the immediate future.

- **Endangered**: any indigenous species facing a high risk of extinction in the wild in the near future, although it is not a critically endangered species.
- **Vulnerable**: any indigenous species facing an extremely high risk of extinction in the wild in the medium-term future; although it is not a critically endangered species or an endangered species.
- **Protected species**: any species which is of such high conservation value or national importance that it requires national protection. Species listed in this category include, among others, species listed in terms of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Certain activities, known as Restricted Activities, are regulated by a set of permit regulations published under the Act. These activities may not proceed without environmental authorization.

According to the national vegetation map, the project area falls within Saldanha Flats Strandveld. This was confirmed by the specialist in the field survey which identified patches of near-intact and degraded Saldanha Flats Strandveld**.**

Saldana Flats Strandveld is classified as Endangered (EN) (B1(i)) due to its narrow distribution and high rates of habitat loss in the past 28 years which has placed this ecosystem type at risk of collapse (DFFE, 2022). Only 36% (591.6 km2) of the historical extent remains and it is considered poorly protected. The conservation target for Saldanha Flats Strandveld is 24%.

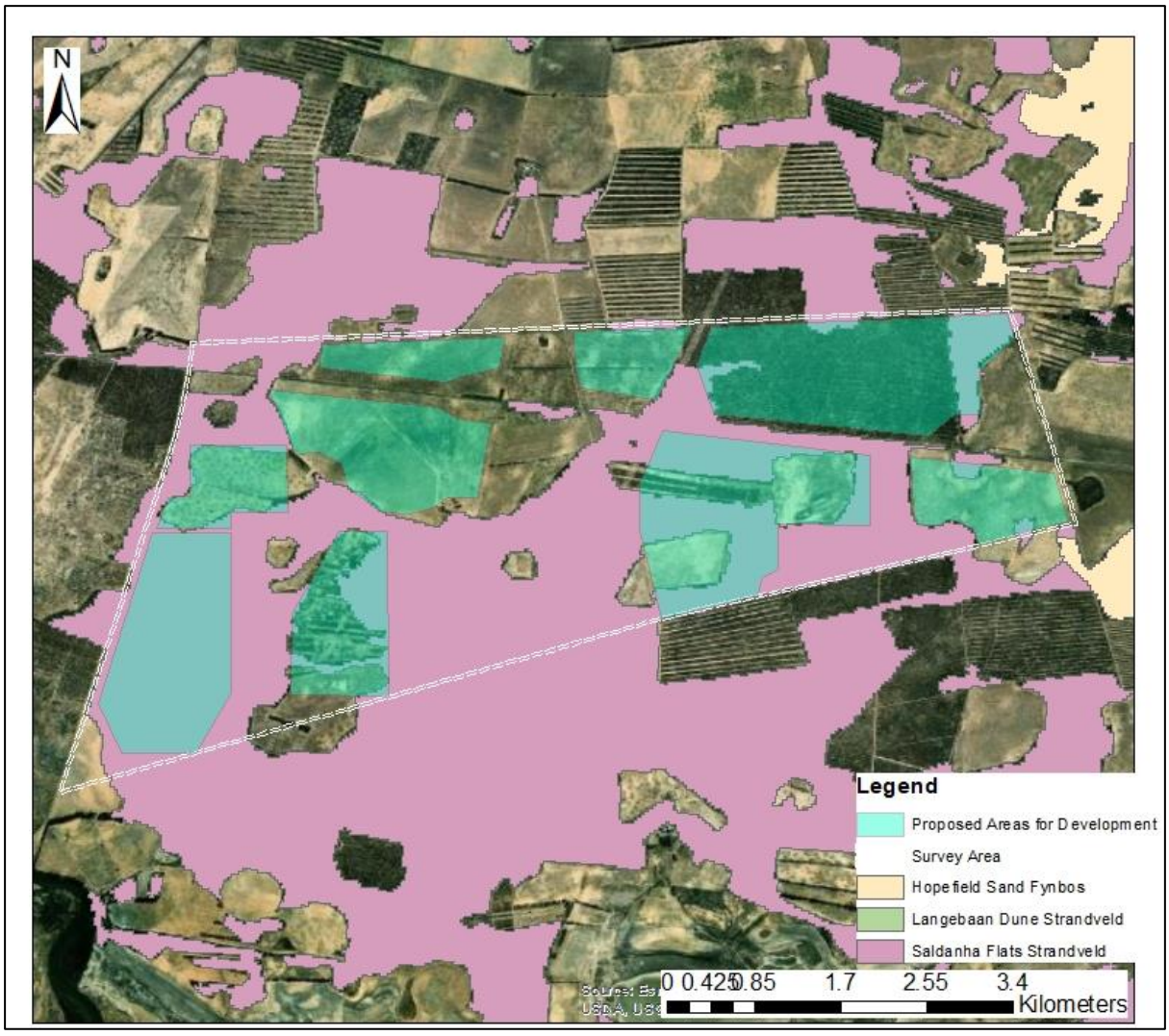


**Figure 28:** Remnant patches of Saldanha Flats Strandveld in relation to the Study Area and Layout Alternative 2.

According to the Terrestrial Biodiversity Specialist (Annexure E1\), Saldanha Flats Strandveld occurs on extensive coastal flats (altitudes of 0-120 m) from St Helena Bay and the southern banks of the Great Berg River near its mouth in the north, to Saldanha and Langebaan in the south, with the southernmost extension at the coast near Yzerfontein and Rietduin. This sclerophyllous shrubland is characterised by a sparse emergent and moderately tall shrub layer and an open succulent shrub layer forming the undergrowth. This vegetation type is known for its conspicuous displays of geophytes and herbaceous flora in spring.

### 3.1.4 Conservation of Agricultural Resources Act – CARA (Act 43 of 1983):

The Conservation of Agricultural Resources Act (CARA) provides for the regulation of control over the utilisation of the natural agricultural resources in order to promote the conservation of soil, water and vegetation and provides for combating weeds and invader plant species. CARA defines different categories of alien plants:

- Category 1 - prohibited and must be controlled;
- Category 2 – must be grown within a demarcated area under permit; and
- Category 3 - ornamental plants that may no longer be planted, but existing plants may remain provided that all reasonable steps are taken to prevent the spreading thereof, except within the flood lines of water courses and wetlands.

The abundance of alien plant species on the Sunveld Solar PV site is moderate and consists mainly of invasive Acacia species.

The Department of Agriculture, Land Reform and Rural Development is guided by Act 43 of 1983.

In order to comply with their mandate in terms of this legislation, the applicant is required to take note of the following:

Article 7.(3)b of Regulation 9238: Conservation of Agriculture Resources, 1983 (Act 43 of 1983) deals with the Utilisation and protection of vleis, marshes, water sponges and water courses

- 7.(1) “no land user shall utilize the vegetation in a vlei, marsh or water sponge or within the flood area of a water course or within 10 meters horizontally outside such flood area in a manner that causes or may cause the deterioration of or damage to the natural agriculture resources.”
- (3)(b) “cultivate any land on his farm unit within the flood area of a water course or within 10 meters horizontally outside the flood area of a water course”.

The Aquatic Biodiversity Impact Assessment in Appendix E4 has identified a number of pans within the assessment area. The preferred layout, layout alternative 3 has avoided these features along with the buffers suggested by the specialist.

### 3.1.5 The Subdivision of Agricultural Land, Act 70 Of 1970

The Subdivision of Agricultural Land Act 70 of 1970 (SALA”) came into operation on 2 January 1971. The Department of Agriculture administers the Subdivision of Agricultural Land Act No. 70 of 1970. Subdivision of agricultural land, therefore, requires consent from the Department of Agriculture.

The Department of Agriculture is considered a commenting authority on this environmental process, but will be a decision-making authority on the SALA application which will take place after the project receives an EA.

The National and Western Cape Department of Agriculture have been registered as a key stakeholder for this environmental process.

### 3.1.6 National Water Act, No 36 of 1998

Section 21c & i of the National Water Act (NWA) requires the Applicant to apply for authorisation from the Department of Water and Sanitation for an activity in, or in proximity to any watercourse. Such an application would be required for any access road or PV infrastructure that crosses any watercourse.

Section 21(a) of the National Water Act is related to the abstraction of water from a water resource (including abstraction of groundwater); a Water Use Licence (WUL) would be required for such abstraction.

Water required for the construction and operation of Sunveld Solar PV is to be sourced from the Berg River Local Municipality (who will be engaged with to provide confirmation of availability). Should the applicant in the future, wish to utilise groundwater for the purposes of construction or operation of the facility, such use will require a licence in terms of Section 21(a) of the NWA.

The freshwater specialist has identified a number of pans within the study site. Layout Alternative 3 avoids these features along with the buffer areas identified by the specialist. The proposal does however include infrastructure within the regulated zone of these features and as such will require a Water Use Licence / General Authorisation in terms of the NWA[33].

The Department of Water and Sanitation as well as the Catchment Management Agency have been registered as a key stakeholder to provide input into in this environmental process.

### 3.1.7 National Forests Act (No. 84 of 1998):

The National Forests Act (NFA) provides for the protection of forests as well as specific tree species, quoting directly from the Act: "*no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree, except under a licence or exemption granted by the Minister to an applicant and subject to such period and conditions as may be stipulated".*

The Terrestrial Biodiversity specialist has not identified any species protected in terms of the National Forest Act on site.

### 3.1.8 National Heritage Resources Act, 25 of 1998

The protection and management of South Africa's heritage resources are controlled by the National Heritage Resources Act (Act No. 25 of 1999). Heritage Western Cape (HWC) is the enforcing authority in the Western Cape and is registered as a Stakeholder for this environmental process.

In terms of Section 38 of the National Heritage Resources Act, Heritage Western Cape will comment on the detailed Heritage Impact Assessment (HIA) where certain categories of development are proposed. Section 38(8) also makes provision for the assessment of heritage impacts as part of an EIA process.

The National Heritage Resources Act requires relevant authorities to be notified regarding this proposed development, as the following activities are relevant:

- the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- any development or other activity which will change the character of a *site* exceeding 5 000 m² in extent; and
- the re-zoning of a site exceeding 10 000m$^2$ in extent.

[33] The Risk Assessment that will be undertaken in the Assessment phase of the Environmental Process will determine whether a General Authorisation or Water Use Licence Application will be appropriate.

Furthermore, in terms of Section 34(1), no person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the SAHRA, or the responsible resources authority (in this case, Heritage Western Cape).

- In terms of Section 36 (3), no person may destroy, damage, alter, exhume or 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, without a permit issued by the SAHRA, or a provincial heritage authority (in this case, Heritage Western Cape).
- In terms of Section 35 (4), no person may destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object, without a permit issued by the SAHRA, or the responsible resources authority (In this Case, Heritage Western Cape).

Dr Jayson Orton has compiled and submitted a NID to Heritage Western Cape. A copy of this NID is attached in Appendix E5.

In response to the NID, Heritage Western Cape will issue a case number. The Heritage Specialist will then undertake the Heritage Impact Assessment[34] as required.

### 3.1.9 National Energy Act (No. 34 of 2008)

The purpose of the National Energy Act (No. 34 of 2008) is to ensure that diverse energy resources are available, in sustainable quantities and at affordable prices, to the South African economy in support of economic growth and poverty alleviation; while taking environmental management requirements into account. In addition, the Act also provides for energy planning, and increased generation and consumption of Renewable Energies.

The objectives of the Act, are to amongst other things, to:

- Ensure uninterrupted supply of energy to the Republic.
- Promote diversity of supply of energy and its sources.
- Facilitate energy access for improvement of the quality of life of the people of the Republic.
- Contribute to the sustainable development of South Africa's economy.

The National Energy Act therefore recognises the significant role which electricity plays growing the economy while improving citizens' quality of life. The Act provides the legal framework which supports the development of Renewable Energy facilities for the greater environmental and social good and provides the backdrop against which South Africa's strategic planning regarding future electricity provision and supply takes place.

## 3.2 PROVINCIAL LEGISLATION

This section deals with provincially promulgated or provincially applicable legislation associated with the proposed Sunveld Solar PV.

### 3.2.1 Astronomy Geographic Advantage Act, 2007 (Act No 21 Of 2007)

The purpose of the Act is to preserve the geographic advantage areas that attract investment in astronomy. The entire Northern Cape Province, excluding the Tsantsabane Municipality, has been declared an astronomy advantage area. The Northern Cape optical and radio telescope sites were declared core astronomy advantage areas. The Act allowed for the declaration of the Southern Africa Large Telescope (SALT), Meerkat and Square Kilometre Array (SKA) as astronomy and related scientific endeavours that has to be protected.

[34] The Heritage Impact Assessment will be included in the Environmental Impact Reporting Phase of this Environmental Process.

Chapter 2 of the act allows for the declaration of astronomy advantage areas whilst Chapter 3 pertains to the management and control of astronomy advantage areas. Management and control of astronomy advantage areas include, amongst others, the following:

- Restrictions on use of radio frequency spectrum in astronomy advantage areas;
- Declared activities in core or central astronomy advantage area;
- Identified activities in coordinated astronomy advantage area; and
- Authorisation to undertake identified activities.

The Sunveld Solar PV facility is not within the Geographic Advantage Area, as it is situated outside of the Northern Cape. It was furthermore found to be situated more than 336km from the closest SKA station (SKA133).

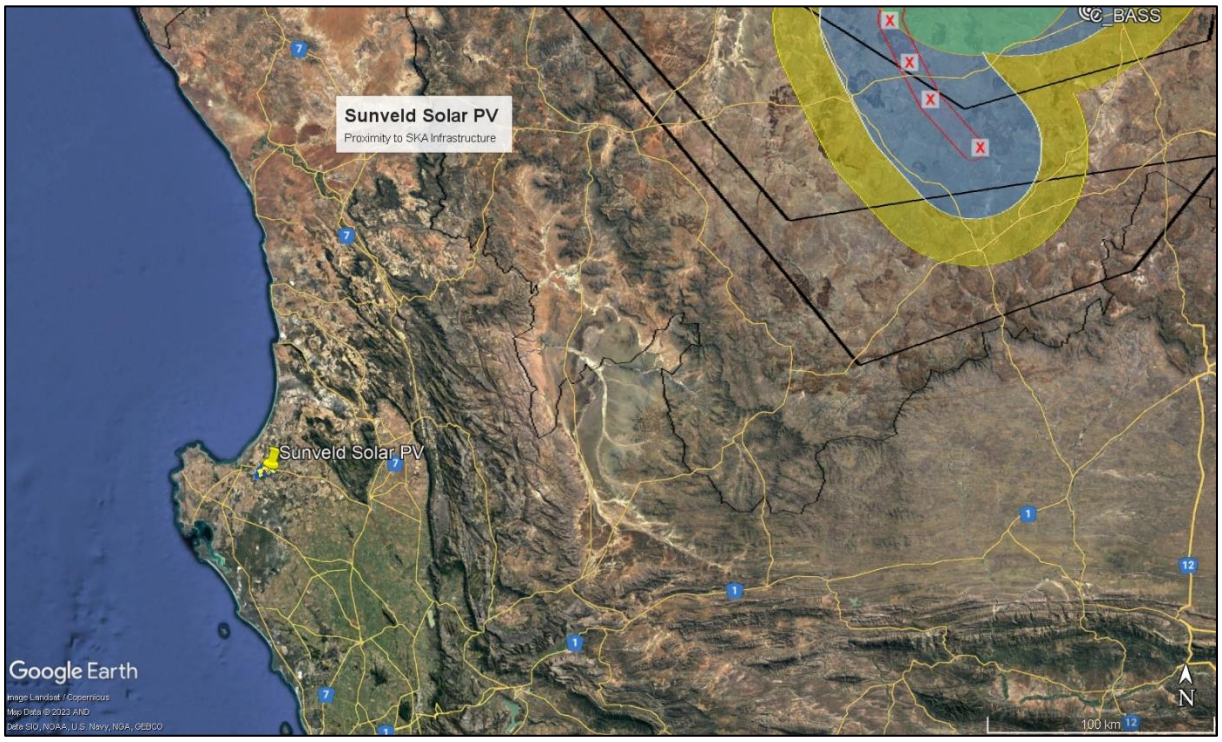


**Figure 29:** Proposed Sunveld Solar PV in relation to the SKA Infrastructure and Buffers.

**The South African SKA Project Office and the South African Radio Astronomy Observatory (SARAO)** have been registered as a key stakeholder on this environmental process and have been requested to provide input in terms of the Astronomy Geographic Advantage Act and potential impact to SKA.

### 3.2.2 Western Cape Land Use Planning Act (Act 16 of 2013)

In line with the Spatial Planning and Land Use Management Act, (Act 16 of 2013), the Western Cape Land Use Planning Act 2014 (LUPA) was adopted by the provincial government of the Western Cape in April 2014. Chapter III (which deals with spatial planning matters) sets out the minimum requirements for drafting a Provincial Spatial Development Framework (PSDF) for the WCP.

Of specific relevance, Section 4 requires a PSDF to (3) 'contain at least (c) provincial priorities, objectives and strategies, dealing in particular with (iiii) adaptation to climate change, mitigation of the impact of climate change, renewable energy production and energy conservation'. This requirement would apply to all future revisions of the PSDF. As such, it indicates the provincial government of the Western Cape's commitment to renewable energy production in order to respond to climate change.

### 3.2.3 Western Cape Amended Zoning Scheme Regulations for Commercial Renewable Energy Facilities (2011).

Amendments to the Western Cape Land Use Ordinance (1985) (LUPO) were promulgated in 2011 in order to guide the development of commercial renewable energy generation facilities (REFs), mainly wind and solar. The Zoning Scheme amendments are specifically intended to provide guidance with regard to land use compatibility, and applicable development restrictions and conditions, including provision for mandatory rehabilitation post construction and final decommissioning ("abandonment" in terms of the Provincial Notice). The ambit of the Regulations includes all REFs as well as associated ("appurtenant") infra/ structure(s) operated for commercial gain, irrespective of whether such feed into the electricity grid or not. The section below provides an overview of key points of relevance to the proposed PV Development.

#### 3.2.3.1 Zoning status

In terms of zoning status, "renewable energy structures" are designated as a consent use in the zone Agriculture I.

#### 3.2.3.2 Land use restrictions

Restrictions with regard to height are mainly applicable to wind energy facilities (WEFs) but associated on-site buildings for all REFs are limited to a maximum of 8,5 m (ground to highest point of roof).

Restrictions with regard to setback are only applicable to WEFs.

#### 3.2.3.3 Establishment of a Rehabilitation Fund

Prior to authorisation, the applicant ("owner") must make financial provision for the rehabilitation or management of negative environmental impacts, as well as of negative impacts associated with decommissioning or abandonment of the facility. Such provision should be in the form of a fund to be administrated by the Municipality, and should be to the satisfaction of the competent authority (i.e. Department of Energy).

#### 3.2.3.4 Land clearing/ erosion management

- Land clearing should be limited to areas considered essential for the construction, operation and decommissioning of a Renewable Energy Facility.
- All land cleared during construction which does not form part of the Renewable Energy Facility structural footprint, must be rehabilitated in accordance with an approved rehabilitation plan.
- Soil erosion must be avoided at all costs, and any high-risk areas should be rehabilitated.

#### 3.2.3.5 Visual impact management

- Visual and environmental impacts must be considered, to the satisfaction of the competent authority.
- Associated structures (i.e., substations, storage facilities, control buildings, etc.) must be screened from view by indigenous vegetation, and/or located underground, or be joined and clustered to avoid adverse visual impacts. In addition, appurtenant structures must be architecturally compatible with the receiving environment.
- Lighting should be restricted to safety and operational purposes, must be appropriately screened from adjacent land units, and should also be in accordance with applicable Civil Aviation Authority requirements.

#### 3.2.3.6 Operational management and maintenance

- Renewable Energy Facilities may not cause or give rise to any noise or pollution, deemed to be a nuisance in terms of applicable Environmental Impact Assessment (EIA) regulations or Municipal by-laws.

- The PV Facility owner/ operator is responsible for maintaining the facility in a good condition, including with regard to painting, structural repairs, on-going rehabilitation measures (e.g., erosion), as well as the upkeep of safety and security measures.

3.2.3.7 Decommissioning management

- A PV Facility which has reached the end of its lifespan or that has been abandoned must be removed. The owner (operator) is responsible for the removal of such structures in whole, no longer than 150 days after the date of discontinued operation, and the land must be rehabilitated to the condition it was in prior to construction of the facility.
- Decommissioning activities must include the removal of all PV Facility structures, associated structures, as well as transmission lines; the disposal of solid and hazardous waste according to applicable waste disposal regulations; and the stabilisation and re-vegetation of the site. In order to minimise disruptive impacts on vegetation, soils, etc., the competent authority may grant approval not to remove any underground foundations or landscaping.

## 3.3 REGIONAL AND MUNICIPAL LEGISLATION

This section deals with regionally and municipally promulgated or regionally or municipally applicable legislation associated with the proposed Sunveld Solar PV[35].

### 3.3.1 Berg River Municipality Integrated Development Plan (2022 - 2027)

The Berg River IDP has identified the following strategic objectives for the municipality.

1. **Strengthen financial sustainability**
    a. To budget strategically
    b. Entrench the Long-Term Financial Plan in the planning, implementation and management of the organisation
    c. Diversify revenue and ensure value for money services
    d. Ensure sustainable financial risk and asset management
    e. Diversify by sourcing grant funding to support projects, programmes and initiatives of Council
    f. Ensure transparency in financial management by ensuring that all financial records are accurate, reliable and timely.

2. **Ensure good governance**
    a. Create an efficient, effective, economic and accountable administration.
    b. Provide a transparent and corruption free municipality.
    c. Accountable leadership supported by professional and skilled administration.
    d. Communicate effectively with the public
    e. A customer centred approach to everything

3. **Sustainable service delivery**
    a. Develop and provide bulk infrastructure within the climate change risks.
    b. Maintain existing bulk infrastructure and services.
    c. Develop, manage and regulate the built environment.
    d. Source alternative sources of energy in the context of national electricity provision.
    e. Conserve and manage the natural environment and mitigate the impacts of climate change.

[35] This section includes legislation applicable to both the District (Category C) and Local (Category B) municipalities.

4. **Facilitate an enabling environment for a diversified economy and growth to alleviate poverty.**
    a. Improve the regulatory environment for ease of doing business.
    b. Promote tourism.
    c. Alleviate poverty through job creation in municipal driven projects and programmes.
    d. Ensure all policies and systems in Bergrivier Municipality support poverty alleviation.
    e. Attract investment through catalytic infrastructure.

5. **Empowering people through innovation.**
    a. To promote healthy lifestyles through the provision of sport, recreational and other facilities and opportunities.
    b. Promote continued partnerships for youth development.
    c. Promote a safe environment for all who live in Bergrivier Municipal Area.
    d. Develop a Master Plan for "Smart Cities" in Bergrivier Municipal Area.

It is envisioned that the proposed Sunveld Solar PV Facility can contribute to strategic objectives 1(d), 3(d), 3(e), 4(c) and 4(e) if the IDP.

### 3.3.2 Berg River Local Municipality Spatial Development Framework (2091-2024)

The Berg River Spatial Development Framework (SDF) outlines a strategic goal to ensure that adequate energy is supplied to meet developmental challenges, it furthermore promotes the notion that such energy should focus on renewable sources.

The SDF furthermore promotes Renewable Energy to shift the focus on to what it terms “sustainable energy”, stressing that appropriate policies need to be followed to ensure that adequate energy is supplied as, in order to meet developmental challenges such as decent jobs, security, climate change, food production or increasing incomes and access to energy for all communities.

The SDF does highlight a challenge and cites interventions that will be needed for large scale infrastructure that is located within or adjacent to landscapes of high heritage and scenic significance.

Policy BE17 states that:

- Wind and solar farm locations should be informed by a range of criteria, i.e., environmental considerations, topography, planning and land use considerations as well as infrastructure considerations
- Wind farms and solar farms should be located where their visual and environmental impact will be the lowest.

The risk adverse approach to the proposed positioning of the infrastructure will ensure that these policy objectives are not compromised.

## 3.4 GUIDELINES, POLICIES AND AUTHORITATIVE REPORTS

This section includes relevant Guidelines, Policies and Authoritative reports applicable to the proposed Sunveld Solar PV.

### 3.4.1 National Protected Area Expansion Strategy (NPAES) for S.A. 2008 (2010)

Considering that South Africa’s protected area network currently falls far short of sustaining biodiversity and ecological processes, the NPEAS aims to achieve cost-effective protected area expansion for ecological sustainability and increased resilience to Climate Change. Protected areas, recognised by the National Environmental Management: Protected Areas Act (Act 57 of 2003), are considered formal protected areas in the NPAES. The NPAES sets targets for expansion of these protected areas,

provides maps of the most important protected area expansion, and makes recommendations on mechanisms for protected area expansion.

The NPAES identifies 42 focus areas for land-based protected area expansion in South Africa. These are large intact and un-fragmented areas suitable for the creation or expansion of large, protected areas.

The closest protected area is the West Coast National Park situated approximately 23 Kilometres south of the site.


**Figure 30:** Proximity of Sunveld Solar to Protected areas as identified in the South African Protected Areas Database.

According to the Terrestrial Biodiversity Specialist (Appendix E1), the project does occur within the Cape West Coast Biosphere Reserve.

Biosphere reserves are 'learning places for sustainable development'. They are sites for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity. They are places that provide local solutions to global challenges. Biosphere reserves include terrestrial, marine and coastal ecosystems. Each site promotes solutions reconciling the conservation of biodiversity with its sustainable use.

Biosphere reserves are nominated by national governments and remain under the sovereign jurisdiction of the states where they are located. Biosphere Reserves are designated under the intergovernmental MAB Programme by the Director-General of UNESCO following the decisions of the MAB International Coordinating Council (MAB ICC). Their status is internationally recognized.

The Cape West Coast Biosphere Reserve stretches northward from the Diep River in Cape Town to the Berg River and covers 378 000 ha of coastal lowland plains. It is unique in terms of its natural beauty, biodiversity, history, culture and location. It was proclaimed and supported by all three spheres of

government and the formal designation procedure was completed in November 2000. The aim of the Cape West Coast Biosphere Reserve is to foster human development that is ecologically sustainable.

The proposed project area does not occur within a NPAES Focus Area (2010) or a negotiated Focus Area (2018).

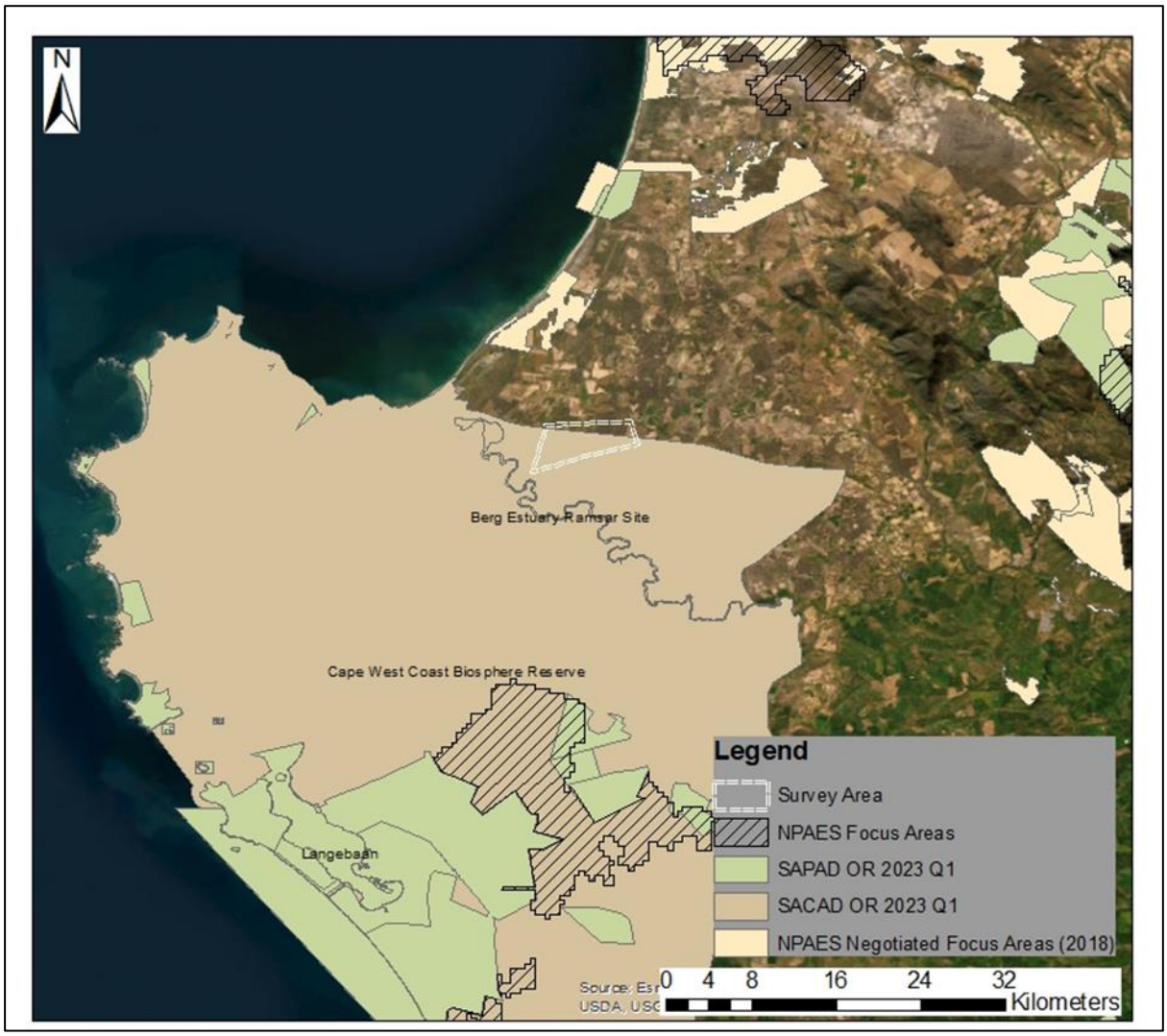


**Figure 31:** Sunveld Solar PV in relation to the West Coast Biosphere Reserve and NPAES Expansion Focus Areas (Biodiversity Africa, 2023).

### 3.4.2 Western Cape Biodiversity Sector Plan (2017)

A Critical Biodiversity Areas (CBA) Map is a spatial plan for ecological sustainability. It identifies a set of biodiversity priority areas, called Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs), which, together with protected areas, are important for the persistence of a viable representative sample of all ecosystem types and species as well as the long-term ecological functioning of the landscape as a whole.

The Western Cape Biodiversity Sector Plan gives legal status to the CBA Map through the National Environmental Management: Biodiversity Act (Act 10 of 2004),

The Western Cape Biodiversity Spatial Plan classifies areas into Critical Biodiversity Areas (CBA1), Degraded Critical Biodiversity Areas (CBA2), Ecological Support Areas (ESA1 &ESA2), Other Natural Areas (ONA) and Protected Areas (PA).

The Terrestrial Biodiversity Specialist (Appendix E1) has confirmed portions of the property occur within a CBA1, CBA 2 and ESA 1. The specialist furthermore confirmed that the reason layer indicates that the spatial planning unit in which the project area occurs was designated as a CBA and ESA for the following reasons:

- Saldanha Flats Strandveld (EN)
- Watercourse Protection – South Western Coastal Belt

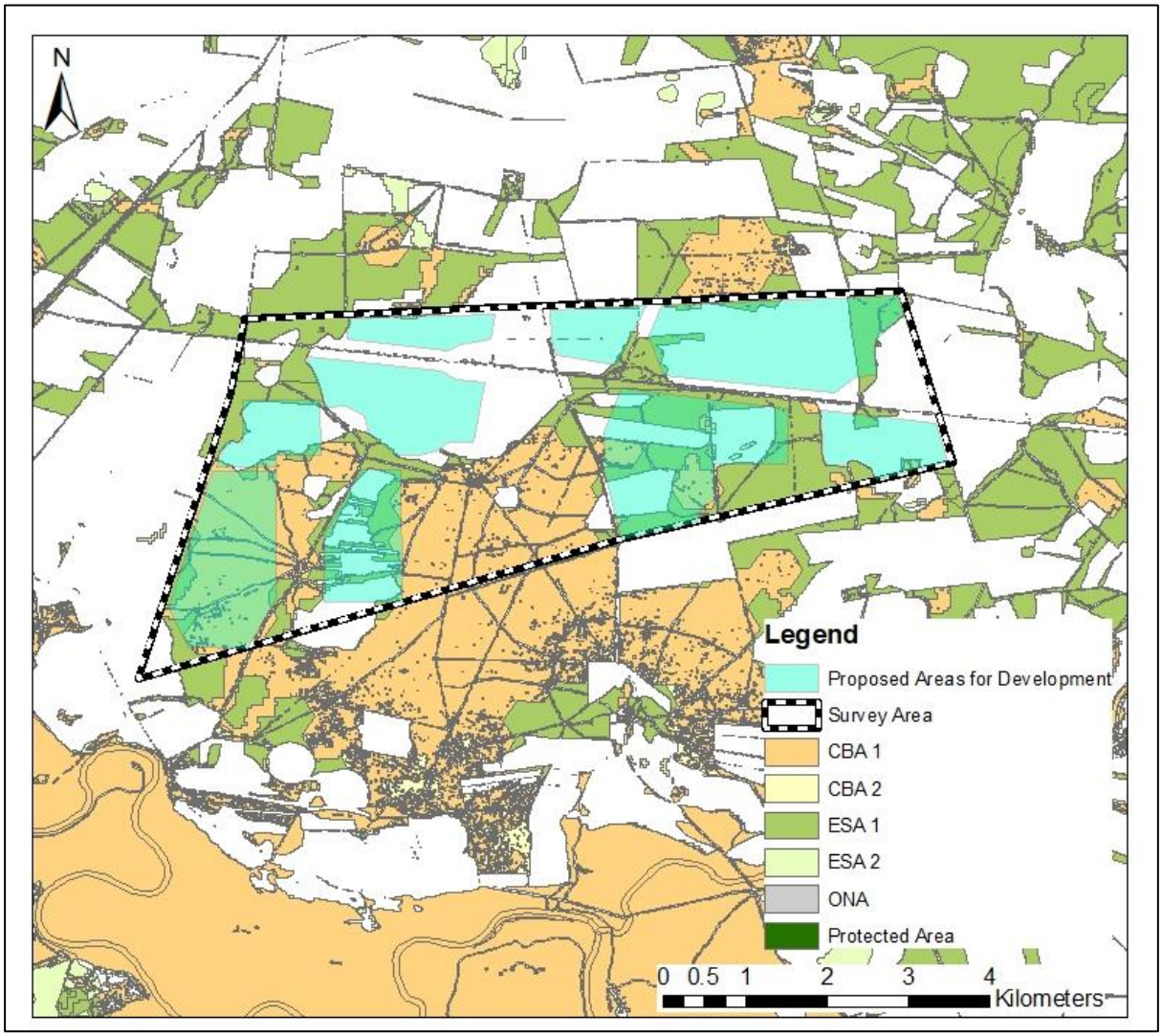


**Figure 32:** Sunveld Solar PV in relation to Critical Biodiversity Areas and Ecological Support Areas as per the Western Cape Biodiversity Spatial Plan (Biodiversity Africa, 2023).

The terrestrial biodiversity specialist furthermore provided details on how the development will impact the features associated with the project area listed as a CBA and ESA.

**Table 9 :** Details on how the proposed development affects the Mapped CBA's and ESA's (Biodiversity Africa, 2023).

| Feature | Comment |
|---|---|
| Saldanha Flats Strandveld (EN) | This vegetation type was confirmed to occur within the project area and has been mapped. Project infrastructure must avoid CBA 1 that overlap with near-intact Saldanha Flats Strandveld which has a SEI of Very High. These areas must be considered a no-go area. |
| Watercourse protection- South Western Coastal Belt | Since this is an aquatic feature, the aquatic specialist must provide comment on how the development will affect this feature[36]. |

### 3.4.3 White Paper on the Renewable Energy Policy of the Republic of South Africa (2003)

The White Paper on Renewable Energy Policy of 2003 supplements Government's predominant policy on energy as set out in the White Paper on the Energy Policy of the Republic of South Africa (DME, 1998). The policy recognises the potential of Renewable Energy and aims to create the necessary conditions for the development and commercial implementation of Renewable Energy technologies. The position of the White Paper on Renewable Policy is based on the integrated resource planning criterion of:

"Ensuring that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options."

The White Paper on Renewable Energy Policy sets out Government's vision, policy principles, strategic goals and objectives for promoting and implementing Renewable Energy in South Africa. The country relies heavily on coal to meet its energy needs due to its abundant, and fairly accessible and affordable coal resources. However, massive Renewable Energy resources that can be sustainable alternatives to fossil fuels, have so far remained largely untapped. The White Paper on Renewable Energy Policy fosters the uptake of Renewable Energy in the economy and has a number of objectives that include: ensuring equitable resources are invested in renewable technologies; directing public resources for implementation of Renewable Energy technologies; introducing suitable fiscal incentives for Renewable Energy and; creating an investment climate for the development of the Renewable Energy sector.

The White Paper on Renewable Energy Policy set a target of 10 000GWh to be generated from Renewable Energy by 2013 to be produced mainly from biomass, wind, solar and small-scale hydro. The target was subsequently reviewed in 2009 during the Renewable Energy summit of 2009. The objectives of the White Paper on Renewable Energy Policy are considered in six focal areas, namely; financial instruments, legal instruments, technology development, awareness raising, capacity building and education, and market based and regulatory instruments. The policy supports the investment in Renewable Energy facilities as they contribute towards ensuring energy security through the diversification of energy supply, reducing GHG emissions and the promotion of Renewable Energy sources.

### 3.4.4 White Paper on the Energy Policy of the Republic of South Africa (1998)

The White Paper on Energy Policy places emphasis on the expansion of energy supply options to enhance South Africa's energy security. This can be achieved through increased use of renewable energy and encouraging new entries into the generation market. South Africa has an attractive range of cost-effective renewable resources, taking into consideration social and environmental costs. Government policy on renewable energy is thus concerned with meeting the following challenges:

- Ensuring that economically feasible technologies and applications are implemented.

[36] This feature was subsequently avoided by Layout Alternative 3 (Preferred Layout).

- Ensuring that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options.
- Addressing constraints on the development of the renewable industry.

The policy states that the advantages of Renewable Energy include; minimal environmental impacts during operation in comparison with traditional supply technologies, generally lower running costs, and high labour intensities. Disadvantages include; higher capital costs in some cases; lower energy densities; and lower levels of availability, depending on specific conditions, especially with sun and wind-based systems. Nonetheless, renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future. The White Paper on Energy Policy therefore supports the advancement of Renewable Energy sources and ensuring energy security through the diversification of supply.

### 3.4.5 Integrated Energy Plan, 2016

The development of a National Integrated Energy Plan was envisaged in the White Paper on the Energy Policy of the Republic of South Africa of 1998 and, in terms of the National Energy Act, 2008 (Act No. 34 of 2008), the Minister of Energy is mandated to develop and, on an annual basis, review and publish the Integrated Energy Plan in the Government Gazette. The purpose of the Integrated Energy Plan is to provide a roadmap of the future energy landscape for South Africa which guides future energy infrastructure investments and policy development.

The Integrated Energy Plan notes that South Africa needs to grow its energy supply to support economi**c expansion and** in so doing, alleviate supply bottlenecks and supply-demand deficits. In addition, it is essential that all citizens are provided with clean and modern forms of energy at an affordable price. As part of the Integrated Energy Planning process, eight key objectives were identified, namely:

- Objective 1: Ensure security of supply;
- Objective 2: Minimise the cost of energy;
- Objective 3: Promote the creation of jobs and localisation;
- Objective 4: Minimise negative environmental impacts from the energy sector;
- Objective 5: Promote the conservation of water;
- Objective 6: Diversify supply sources and primary sources of energy;
- Objective 7: Promote energy efficiency in the economy; and
- Objective 8: Increase access to modern energy.

The Integrated Energy Plan provides an assessment of current energy consumption trends within different sectors of the economy (i.e., agriculture, commerce, industry, residential and transport) and uses this information to identify future energy requirements, based on different scenarios. The scenarios are informed by different assumptions on economic development and the structure of the economy and also take into account the impact of key policies such as environmental policies, energy efficiency policies, transport policies and industrial policies, amongst others.

Based on this information the Integrated Energy Plan then determines the optimal mix of energy sources and technologies to meet those energy needs in the most cost-effective manner for each of the scenarios. The associated environmental impacts, socio-economic benefits and macroeconomic impacts are also analysed. The Integrated Energy Plan is therefore focused on determining the long-term energy pathway for South Africa, taking into account a multitude of factors which are embedded in the eight objectives.

As part of the analysis four key scenarios were developed, namely the Base Case, Environmental Awareness, Resource Constrained and Green Shoots scenarios:

- The Base Case Scenario assumes that existing policies are implemented and will continue to shape the energy sector landscape going forward. It assumes moderate economic growth in the medium to long term;
- The Environmental Awareness Scenario is characterised by more stringent emission limits and a more environmentally aware society, where a higher cost is placed on externalities caused by the supply of energy;
- The Resource Constrained Scenario in which global energy commodity prices (i.e., coal, crude oil and natural gas) are high due to limited supply;
- The Green Shoots Scenario describes an economy in which the targets for high economic growth and structural changes to the economy, as set out in the National Development Plan, are met.

The Integrated Energy Plan notes that South Africa should continue to pursue a diversified energy mix which reduces reliance on a single or a few primary energy sources. In terms of renewable energy, the document refers to wind and solar energy. The document does however appear to support solar over wind noting that solar PV and CSP with storage present excellent opportunities to diversify the electricity mix, to produce distributed generation and to provide off-grid electricity. Solar technologies also present the greatest potential for job creation and localisation. Incentive programmes and special focused programmes to promote further development in the technology, as well as solar roll-out programmes should be pursued.

### 3.4.6 Integrated Resource Plan for Electricity (2010-2030)

The Integrated Resource Plan (IRP) for Electricity 2010 – 2030 is a subset of the Integrated Energy Plan and constitutes South Africa's national electricity plan. The primary objective of the IRP is to determine the long-term electricity demand and detail how this demand should be met in terms of generating capacity, type, timing and cost. The IRP also serves as input to other planning functions, including amongst others, economic development and funding, and environmental and social policy formulation.

The current iteration of the IRP, led to the Revised Balanced Scenario (RBS) that was published in October 2010. Following a round of public participation which was conducted in November / December 2010, several changes were made to the IRP model assumptions. The document outlines the proposed generation new-build fleet for South Africa for the period 2010 to 2030. This scenario was derived based on a cost-optimal solution for new-build options (considering the direct costs of new build power plants), which was then "balanced" in accordance with qualitative measures such as local job creation.

The Policy-Adjusted IRP reflects recent developments with respect to prices for renewables. In addition to all existing and committed power plants, the plan includes 9.6GW of nuclear; 6.25GW of coal; 17.8GW of renewables; and approximately 8.9GW of other generation sources such as hydro, and gas.

### 3.4.7 National Development Plan 2030 (2012)

The National Development Plan 2030 is a plan prepared by the National Planning Commission in consultation with the South African public which is aimed at eliminating poverty and reducing inequality by 2030. The National Development Plan aims to achieve this by drawing on the energies of its people, growing and inclusive economy, building capabilities, enhancing the capacity of the state and promoting leaderships and partnerships throughout society. While the achievement of the objectives of the National Development Plan requires progress on a broad front, three priorities stand out, namely:

- Raising employment through faster economic growth.
- Improving the quality of education, skills development and innovation.
- Building the capability of the state to play a developmental, transformative role.

In terms of the Energy Sectors role in empowering South Africa, the National Development Plan envisages that, by 2030, South Africa will have an energy sector that promotes:

- Economic growth and development through adequate investment in energy infrastructure. The sector should provide reliable and efficient energy service at competitive rates, while supporting economic growth through job creation.
- Social equity through expanded access to energy at affordable tariffs and through targeted, sustainable subsidies for needy households.
- Environmental sustainability through efforts to reduce pollution and mitigate the effects of climate change.

The National Development Plan aims to provide a supportive environment for growth and development, while promoting a more labour-absorbing economy. The proposed project will assist in reducing carbon emissions targets and creating jobs in the local area as well as assist in creating a competitive infrastructure based on terms of energy contribution to the national grid.

### 3.4.8 The New Growth Path Framework

The aim of the New Economic Growth Path Framework is to enhance growth, employment creation and equity. Central to the New Growth Path is a massive investment in infrastructure as a critical driver of jobs across the economy. In this regard the framework identifies investments in five key areas namely: energy, transport, communication, water and housing.

The New Growth Path also identifies five other priority areas as part of the programme, through a series of partnerships between the State and the private sector. The Green Economy as one of the five priority areas to create jobs, including expansions in construction and the production of technologies for solar, wind and biofuels. In this regard clean manufacturing and environmental services are projected to create 300 000 jobs over the next decade.

### 3.4.9 National Infrastructure Plan

The South African Government adopted a National Infrastructure Plan in 2012. The aim of the plan is to transform the economic landscape while simultaneously creating significant numbers of new jobs and strengthen the delivery of basic services. The plan also supports the integration of African economies. In terms of the plan Government will invest R827 billion over the next three years to build new and upgrade existing infrastructure. The aim of the investments is to improve access by South Africans to healthcare facilities, schools, water, sanitation, housing and electrification. The plan also notes that investment in the construction of ports, roads, railway systems, electricity plants, hospitals, schools and dams will contribute to improved economic growth.

As part of the National Infrastructure Plan, Cabinet established the Presidential Infrastructure Coordinating Committee (PICC). The Committee identified and developed 18 strategic integrated projects (SIPS). The SIPs cover social and economic infrastructure across all nine provinces (with an emphasis on lagging regions) and consist of:

- Five geographically focussed SIPs;
- Three spatial SIPs;
- Three energy SIPs;
- Three social infrastructure SIPs;
- Two knowledge SIPs;
- One regional integration SIP;
- One water and sanitation SIP.

The three energy SIPS that are related to Sunveld Solar PV are SIP 8, 9 and 10.

**Table 10:** Strategic Infrastructure related to Sunveld Solar PV

| **SIP 8: Green energy in support of the South African economy** |
|---|
| Support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the Integrated Resource Plan (IRP 2010);<br>Support bio-fuel production facilities. |

| SIP 9: Electricity generation to support socio-economic development |
|---|
| Accelerate the construction of new electricity generation capacity in accordance with the IRP 2010 to meet the needs of the economy and address historical imbalances;<br>Monitor implementation of major projects such as new power stations: Medupi, Kusile and Ingula. |
| **SIP 10: Electricity transmission and distribution for all** |
| Expand the transmission and distribution network to address historical imbalances, provide access to electricity for all and support economic development.<br>Align the 10-year transmission plan, the services backlog, the national broadband roll-out and the freight rail line development to leverage off regulatory approvals, supply chain and project development capacity. |

Although this project aligns with these 3 SIP's, it will only receive formal SIP status once it is selected as a preferred bidder under the REIPPPP or other private procurement process.

### 3.4.10 Strategic Environmental Assessment (SEA) for Wind and Solar PV energy in South Africa

The Strategic Environmental Assessment (SEA) for wind and solar PV energy in South Africa (CSIR, 2013) identified eight (8) Renewable Development Zones (REDZs). The REDZs identified areas where large scale renewable energy facilities can be developed in in a manner that limits significant negative impacts on the environment while yielding the highest possible socio-economic benefits to the country.

The Phase 2 SEA identified a further 3 REDZ, which were formally gazetted in 2021. The Sunveld Solar PV Facility is not situated within a REDZ.

### 3.4.11 Conservation of Migratory Species of Wild Animals

Conservation of Migratory Species of Wild Animals (also known as CMS or the Bonn Convention) is an intergovernmental treaty and is the most appropriate instrument to deal with the conservation of terrestrial, aquatic and avian migratory species. The convention includes policy and guidelines with regards to the impact associated with man-made infrastructure. CMS requires that parties (South Africa is a signatory) take measures to avoid migratory species from becoming endangered (Art II, par. 1 and 2) and to make every effort to prevent the adverse effects of activities and obstacles that seriously impede or prevent the migration of migratory species i.e., power lines (Art 111, par. 4b and 4c).

An Avifaunal Specialist has been appointed to consider the impact of the proposed Sunveld Solar PV (Annexure E3). Birdlife Africa South Africa has also been given an opportunity to comment on this Scoping Report.

### 3.4.12 The Agreement on the Convention of African-Eurasian Migratory Water Birds

The Agreement on the Conservation of African-Eurasian Migratory Water birds (AEWA) is an intergovernmental treaty dedicated to the conservation of migratory waterbirds and their habitat across Africa, Europe, the Middle East Central Asia, Greenland and the Canadian Archipelago. The AEWA covers 255 species of birds ecologically dependent on wetlands for at least part of their annual cycle and is a legally binding agreement by all contracting parties (South Africa included) to guarantee the conservation of migratory waterbirds within their national boundaries through species and habitat protection and the management of human activities. As mentioned above, an Avifaunal Specialist has been appointed to consider the impact of the proposed Sunveld Solar PV (Annexure E3). Birdlife Africa South Africa has also been given an opportunity to comment in this regard.

### 3.4.13 Guidelines to minimise the impacts on birds of Solar Facilities and Associated Infrastructure in South Africa

The "Guidelines to minimise the impact on birds of Solar Facilities and Associated Infrastructure in South Africa" (Smit, 2012) is perhaps the most important (although not legally binding) document from an avifaunal impact perspective currently applicable to solar development in South Africa. The guidelines are published by BirdLife South Africa (BLSA) and detail the recommended procedure for conducting

an avifaunal specialist study as well as list all of the potential impacts of interactions between birds and solar facilities and associated infrastructure. We are aware of changes to the BLSA best-practise guidelines recently published at the Birds and Renewable Energy Forum in Johannesburg (2015) and although the revised requirements are still a work in progress and have not yet been ratified, they will inform this assessment where applicable.

Please refer to Annexure E3 for a copy of the Avifaunal Site Sensitivity Verification Report. In compliance with regime 2 of these guidelines, a second season of avifaunal monitoring and Avifaunal Impact Assessment will take place during the Environmental Impact Reporting Phase of this Environmental Process.

### 3.4.14 Environmental Impact Assessment Guideline for Renewable Energy Projects

The Minister of Environmental Affairs published the Environmental Impact Assessment Guideline for Renewable Energy in terms of section 24J of the National Environmental Management Act, 1998 (Act No. 107 of 1998) on 16 October 2016.

In pursuit of promoting the country's Renewable Energy development imperatives, the Government has been actively encouraging the role of Independent Power Producers (IPPs) to feed into the national grid. Through its REIPPPP, the DoE has been engaging with the sector in order to strengthen the role of IPPs in renewable energy development. Launched during 2011, the REIPPPP is designed so as to contribute towards a target of 3 725MW, and towards socio-economic and environmentally sustainable development, as well as to further stimulate the renewable industry in South Africa.

In order to facilitate the development of the first phase of IPPs in South Africa, these guidelines have been written to assist project planning, financing, permitting, and implementation for both developers and regulators. The guideline is principally intended for use by the following stakeholder groups:

- Public Sector Authorities (as regulator and/or competent authority);
- Joint public sector authorities and project funders, e.g., Eskom, IDC, etc.
- Private Sector Entities (as project funder/developer/consultant);
- Other interested and affected parties (as determined by the project location and/or scope).

This guideline aims to ensure that all potential environmental issues pertaining to renewable energy projects are adequately and timeously assessed and addressed as necessary so as to ensure sustainable roll-out of these technologies by creating a better understanding of the environmental approval process for renewable energy projects.

The guidelines list the following possible environmental impacts associated with the development of solar energy facilities.

**Table 11**: Potential environmental impacts of solar energy projects (Adapted from DEA, 2015) showing where they have been considered in this report

| Impact Description | Relevant Legislation | Applicability to this project |
|---|---|---|
| Visual Impact | NEMA | Specialist input attached in Annexure E8. |
| Noise Impact (CSP) | NEMA | Not applicable, as CSP is not considered as a technology alternative. |
| Land Use Transformation (fuel growth and production) | NEMA, NEMPAA, NHRA | Not Applicable to PV. Agricultural specialist input however attached in Annexure E6. |
| Impacts on Cultural Heritage | NEMA, NHRA | Heritage input is attached in Annexure E5. A full Heritage Impact Assessment will take place as part of the Environmental Impact Reporting Phase of this Environmental Process. |

| Impact Description | Relevant Legislation | Applicability to this project |
|---|---|---|
| Impacts on Biodiversity | NEMA, NEMBA, NEMPAA, NFA | Biodiversity specialist input attached in Annexure E1 -E4 (Terrestrial Biodiversity, Invertebrates, Avifauna and Aquatic Biodiversity) |
| Impacts on Water Resources | NEMA, NEMICMA, NWA, WSA | The project will obtain water directly from the local municipality. A freshwater ecologist has assessed the potential impacts on freshwater resources (Annexure E4). All Aquatic Biodiversity Features as well and associated buffers identified by the Aquatic Biodiversity Specialist have been avoided in Layout Alternative 3 (Preferred Layout) |
| Hazardous Waste Generation (CSP and PV) | NEMA, NEMWA, HAS | The EMPr will make provision for damaged and defunct PV and Battery infrastructure for dismantling and re-use. |
| Electromagnetic Interference | NEMA | The nearest SKA station has been identified as SKA 133, at approximately 332km from the proposed Sunveld Solar PV.<br>SKA and SARAO have been given an opportunity to provide comment in this regard. |
| Aircraft Interference | NEMA, MSA | The SA CAA have been automatically registered as an interested and affected party on this environmental process. There are no airports nor landing strips in the vicinity of the proposed site. |
| Loss of Agricultural Land | SALA | Agricultural specialist input is attached in Annexure E6 |
| Sterilisation of mineral resources | MPRDA | The Department of Mineral Resources has been registered as an I&AP on this environmental process. The applicant will also consult with DMR to ascertain whether there are any prospecting rights in terms of section 53 of the MPRDA on the properties. |

Assuming an IPP project triggers the need for BA or S&EIR under the EIA regulations (which in this case is a Scoping and Environmental Impact Reporting process), included in the assessment process is the preparation of an Environmental Management Programme (EMPr). Project-specific measures designed to mitigate negative impacts and enhance positive impacts should be informed by good industry practice and are to be included in the EMPr. Potential mitigation measures for solar energy projects include but are not limited to:

- Conduct pre-disturbance surveys as appropriate to assess the presence of sensitive areas, fauna, flora and sensitive habitats;
- Plan visual impact reduction measures such as natural (vegetation and topography) and engineered (berms, fences, and shades, etc.) screens and buffers;
- Utilise existing roads and servitudes as much as possible to minimise project footprint;
- Site projects to avoid construction too near pristine natural areas and communities;

- Locate developments away from important habitat for faunal species, particularly species which are threatened or have restricted ranges, and are collision-prone or vulnerable to disturbance, displacement and/or habitat loss;
- Fence sites as appropriate to ensure safe restricted access;
- Ensure dust abatement measures are in place during and post construction;
- Develop and implement a storm water management plan;
- Develop and implement waste management plan; and
- Re-vegetation with appropriate indigenous species to prevent dust and erosion, as well as establishment of alien species.

The recommendations of these guidelines have been explicitly considered in this scoping process and where necessary, additional specialist input has been obtained. This guideline and the outcome of the specialist assessments will also be incorporated into the EMPr that will be included in the next phase of the environmental process.

### 3.4.15 Sustainability Imperative

The norm implicit to our environmental law is the notion of sustainable development ("SD"). SD and sustainable use and exploitation of natural resources are at the core of the protection of the environment. SD is generally accepted to mean development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. The evolving elements of the concept of SD *inter alia* include the right to develop; the pursuit of equity in the use and allocation of natural resources (the principle of intra-generational equity) and the need to preserve natural resources for the benefit of present and future generations. Economic development, social development and the protection of the environment are considered the pillars of SD (the triple bottom line).

"Man-land relationships require a holistic perspective, an ability to appreciate the many aspects that make up the real problems. Sustainable planning has to confront the physical, social, environmental and economic challenges and conflicting aspirations of local communities. The imperative of sustainable planning translates into notions of striking a balance between the many competing interests in the ecological, economic and social fields in a planned manner. The 'triple bottom line' objectives of sustainable planning and development should be understood in terms of economic efficiency (employment and economic growth), social equity (human needs) and ecological integrity (ecological capital)."

As was pointed out by the Constitutional Court, SD does not require the cessation of socio-economic development but seeks to regulate the manner in which it takes place. The idea that developmental and environmental protection must be reconciled is central to the concept of SD - it implies the accommodation, reconciliation and (in some instances) integration between economic development, social development and environmental protection. It is regarded as providing a "conceptual bridge" between the right to social and economic development, and the need to protect the environment.

Our Constitutional Court has pointed out that the requirement that environmental authorities must place people and their needs at the forefront of their concern so that environmental management can serve their developmental, cultural and social interests, can be achieved if a development is sustainable. "*The very idea of sustainability implies continuity. It reflects the concern for social and developmental equity between generations, a concern that must logically be extended to equity within each generation. This concern is reflected in the principles of inter-generational and intra-generational equity which are embodied in both section 24 of the Constitution and the principles of environmental management contained in NEMA.*" [Emphasis added.]

In terms of NEMA sustainable development requires the integration of the relevant factors, the purpose of which is *to ensure that development serves present and future generations.*[37]

It is believed that the proposed 600MW Sunveld Solar PV supports the notion of sustainable development by presenting a reasonable and feasible alternative to the existing vacant land use type, which has limited agricultural potential due the lack of water and infrastructure.

Furthermore, the proposed alternative energy project (reliant on a natural renewable resource – solar energy) is in line with the national and global goal of reducing reliance on fossil fuels, thereby providing long-term benefits to future generations in a sustainable manner.

### 3.4.16 National Freshwater Ecosystem Priority Area Status

The National Freshwater Ecosystem Priority Areas (NFEPA) database forms part of a comprehensive approach to the sustainable and equitable development of South Africa's scarce water resources. This database guides how many rivers, wetlands and estuaries, and which ones, should remain in a natural or near-natural condition to support the water resource protection goals of the National Water Act (Act 36 of 1998). This directly applies to the National Water Act, which feeds into Catchment Management Strategies, water resource classification, reserve determination, and the setting and monitoring of resource quality objectives (Nel *et al*., 2011). The NFEPAs are intended to be conservation support tools and envisioned to guide the effective implementation of measures to achieve the National Environment Management Biodiversity Act's biodiversity goals (NEM:BA) (Act 10 of 2004), informing both the listing of threatened freshwater ecosystems and the process of bioregional planning provided for by this Act (Nel *et al.,* 2011).

The freshwater specialist (Appendix E4) confirmed that there is a small aquatic CBA mapped near the depression wetlands in the FEPA and NWM5. The two natural depressions mapped in the FEPA and NWM5 are mapped as aquatic ESAs in the WCBSP. The aquatic CBA associated in the WCBSP with the Berg River Estuary follows the mapping of the FEPA wetland mapping.

37 Refer to definition of "sustainable development" in section 1 of NEMA.

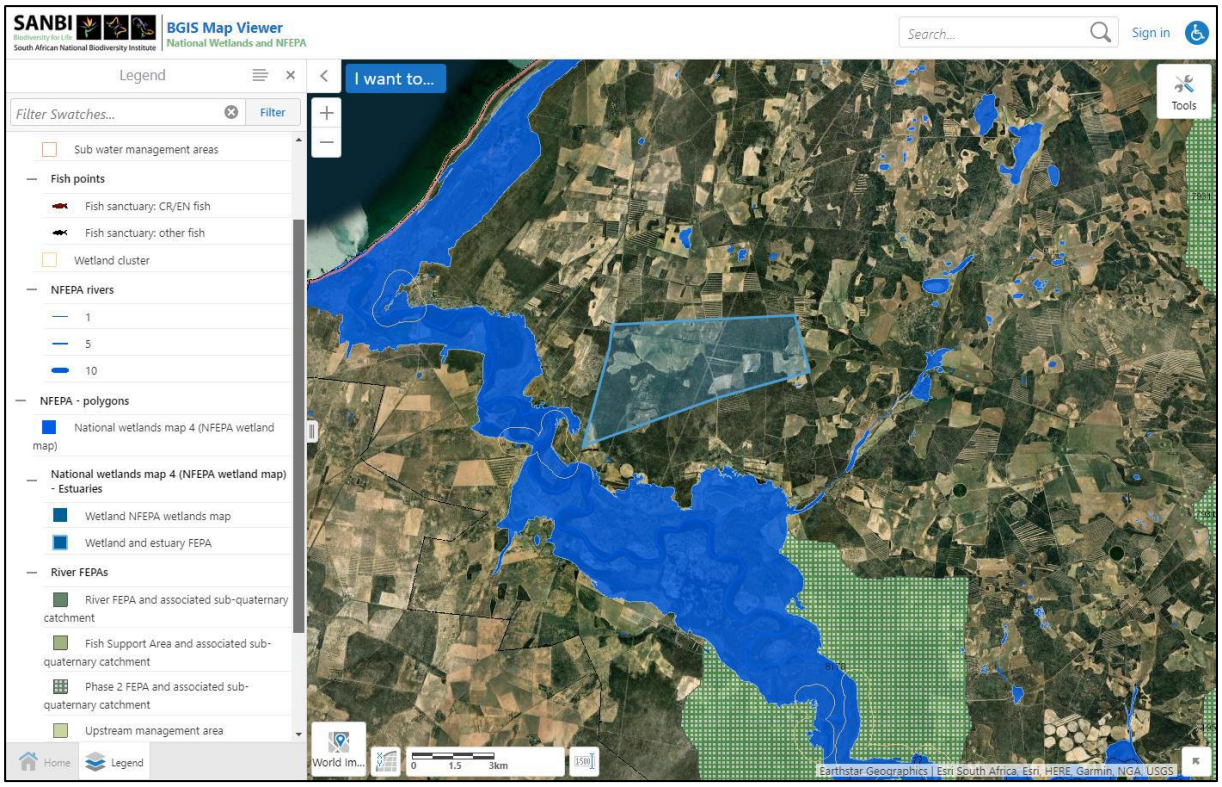


**Figure 33**: National Freshwater Ecosystem Priority Areas in relation to the Study Site (Belcher, 2023)

### 3.4.17 DFFE Screening Tool and Protocols

The National Web based Environmental Screening Tool is a geographically based web-enabled application which allows a proponent intending to submit an application for environmental authorisation in terms of the Environmental Impact Assessment (EIA) Regulations 2014, as amended to screen their proposed site for any environmental sensitivity.

The Screening Tool also provides site specific EIA process and review information for a specific area.

Further to this, the Screening Tool identifies related exclusions and/ or specific requirements including specialist studies applicable to the proposed site and/or development, based on the national sector classification and the environmental sensitivity of the site.

Finally, the Screening Tool allows for the generating of a Screening Report referred to in Regulation 16(1)(v) of the Environmental Impact Assessment Regulations 2014, as amended whereby a Screening Report is required to accompany any application for Environmental.

Prior to commencing with a specialist assessment, the current use of the land and the environmental sensitivity of the site under consideration identified by the national web based environmental screening tool (screening tool), where determined, must be confirmed by undertaking a site sensitivity verification.

A screening tool report was generated for the proposed Sunveld Solar PV and is attached in Appendix H and the site sensitivity verification is discussed in section 5.9 below.

The table below reflects the specialist studies recommended in the DFFE Screening tool and whether they will be included in the Draft EIR.

**Table 12:** Specialist Studies recommended in the DFFE Screening Tool.

| Study Recommended in Screening Tool | Discussion |
|---|---|
| Agricultural Impact Assessment | Will be undertaken. In terms of the SSVR for Agriculture, this will be in the form of a Compliance Statement due to the Medium Sensitivity |
| Landscape/Visual Impact Assessment | Will be undertaken |

| Study Recommended in Screening Tool | Discussion |
|---|---|
| Archaeological and Cultural Heritage Impact Assessment | Will be undertaken |
| Palaeontology Impact Assessment | Will be undertaken |
| Terrestrial Biodiversity Impact Assessment | Will be undertaken |
| Aquatic Biodiversity Impact Assessment | Will be undertaken |
| Avian Impact Assessment | Will be undertaken |
| Civil Aviation Assessment | To be determined – The closest airstrip was identified as the Saldanha Airport situated approximately 29 km to the South of the Site.<br>The South Avian Civil Aviation Authority, ATNS and the Saldanha Airport will be given an opportunity to comment on this scoping Process. The applicant will also submit an obstacle application (Part 30-27) to the South African Civil Aviation Authority. |
| Defence Assessment | To be determined – the South African National Defence Force will be provided with an opportunity to comment on this Scoping Process. |
| RFI Assessment | Not undertaken – The Sunveld Solar PV facility is not within the Geographic Advantage Area, as it is situated outside of the Northern Cape. It was furthermore found to be situated more than 336km from the closest SKA station (SKA133).<br><br>The South African SKA Project Office and the South African Radio Astronomy Observatory (SARAO) have been registered as a key stakeholder on this environmental process and have been requested to provide input in terms of the Astronomy Geographic Advantage Act and potential impact to SKA. |
| Geotechnical Assessment | Will be undertaken |
| Socio-Economic Assessment | Will be undertaken |
| Plant Species Assessment | Will be undertaken |
| Animal Species Assessment | Will be undertaken |

# 4. PLANNING CONTEXT

A Planning statement will be undertaken as part of the Environmental Impact Reporting phase of this environmental process.

The land use planning process for the Sunveld will typically involve the following:

- Application for consent use in terms of the Spatial Planning and Land Use Management Act, Act 16 of 2013, submitted to the Berg River Local Municipality, in terms of the Berg River Municipal Zoning Scheme By-law, 2017.
- Application in terms of the Subdivision of Agricultural Land Act (Act 70 of 1970).

In terms of the Municipal By-law, a renewable energy structure is permitted as a consent use of Agricultural 1 Zoned land.

**Table 13:** Showing Renewable Energy Structures as a consent use on Land Zoned for Agriculture 1.

| 1 | 2 | 3 |
|---|---|---|
| **Zoning** | **Primary use** | **Consent use** |
| **AGRICULTURAL ZONES** | | |
| **Agricultural Zone I (AZ1)** | | |
| *The objective of this zone is to promote and protect agriculture on farms as an important economic, environmental and cultural resource. Limited provision is made for non-agricultural uses to provide rural communities in more remote areas with the opportunity to increase the economic potential of their properties, provided these uses do not present a significant negative impact on the primary agricultural resource.* | **Primary use**<br>• Agriculture<br>• Farm shop<br>• Function venue<br>• Guest house<br>• Bed & Breakfast<br>• Plant nursery | **Consent uses**<br>• Additional dwelling units<br>• Airfield<br>• Animal care centre<br>• Aqua-culture<br>• Farm Shop<br>• Freestanding base telecommunication station<br>• Off road trail<br>• Quarry<br>• Renewable energy structure<br>• Tourist facilities<br>• Utility service<br>• Crèche<br>• Farmers' Market |

The following planning process are likely to be required for the proposed Sunveld Solar PV:

- The property is located within the Berg River Local Municipality and any process of land use change will be subject to the Scheme Regulations and Municipal Planning By-laws of the said Municipality.
- The property is currently zoned as Agricultural Zone 1 in terms of Berg River Municipal Zoning Scheme By-law, 2017. In order to allow for the development of a Renewable Energy Facility, application for a consent use on the applicable portion of the property will have to be launched.
- The application for consent use will be compiled and submitted in terms of the Spatial Planning and Land Use Management Act, Act 16 of 2013 (SPLUMA), as well as the Berg River Local Municipal Zoning Scheme By-law, 2017.
- SPLUMA retracts the Removal of Restrictions Act, Act 84 of 1967, and any title deed restrictions on the property may be removed at the discretion of the local authority in terms of SPLUMA.

In addition to attaining the land use rights at the Local Authority, a long-term lease from the Department of Agriculture will be required.

# 5. SITE DESCRIPTION AND ATTRIBUTES

The following sections provide a description of the natural environment, built environment and social and economic context of the farm Kruispad 120 and the farm Doornfontein A 118, with particular focus on the Study Site for the proposed Sunveld Solar PV.

## 5.1 LOCATION & BUILT ENVIRONMENT

The target properties, farm Kruispad 120 and e farm Doornfontein A 118, are located in the West Coast District of the Western Cape Province, within the jurisdiction area of the Berg River Local Municipality.

The total properties are approximately 6486.01 hectares in size and located approximately 7.5km East of Velddrif.

The proposed Sunveld Solar PV is accessed from the R399 between Velddrif and Piketberg.

According to the heritage specialist, no buildings, ruins or any other structures were noted on or within the Sunveld Solar PV Study Site.

## 5.2 GEOLOGY & CLIMATE

According to Cape Farm Mapper, the Geology of the site is within the Sandveld Group which consists of fine to medium grained quartzitic sand

According to the Agricultural Specialist, Johan Lanz (Annexure E6) has classified the underlying soils as follows:

**Table 14**: Classification of underlying Soils at Sunveld Solar PV (Lanz, 2023)

| | Parameter | Value |
|---|---|---|
| Soil | Geology (DAFF, 2002) | Aeolian sand mostly overlying marine sediments. |
| | Land type (DAFF, 2002) | Hb118, Ha70, Db298, Db297 |
| | Description of the soils | Heuweltjie veld (land with a regular, dotted pattern of extinct underground termite nests) occurs across the site, but apart from the soil distinctions on and off the heuweltjies, the soils are very homogenous. All are deep, light coloured, very light textured (sandy) soils, occasionally with clay in the subsoil. |
| | Dominant soil forms | Fernwood |
| | Soil capability classification (out of 9) (DAFF, 2017) | Hb land types: 6 (moderate-high) to 7 (high). However this is an overestimation of soil capability.<br>Db land types: 4 (low-moderate) |
| | Land capability classification (out of 15) (DAFF, 2017) | Hb land types: 7 (low-moderate) to 9 (moderate-high), bu tis an overestimate<br>Db land types: 6 (moderate-high) to 7 (high) |
| | Within Protected Agricultural Area DALRRD, 2020) | Yes |

According to the Aquatic Biodiversity Specialist, the area normally receives about 253 mm of rain per year, mostly during winter.

Typically, very little rain falls between December and March and the highest rainfall (41mm) occurs in June. As a result of the very low rainfall in the area, the depression wetlands at the site are ephemeral and are only inundated for short periods immediately following local rainfall events.

The larger Berg River is perennial, receiving most of its runoff from the upper mountainous catchment area at Franschhoek where the mean annual rainfall in places exceeds 2000 mm.

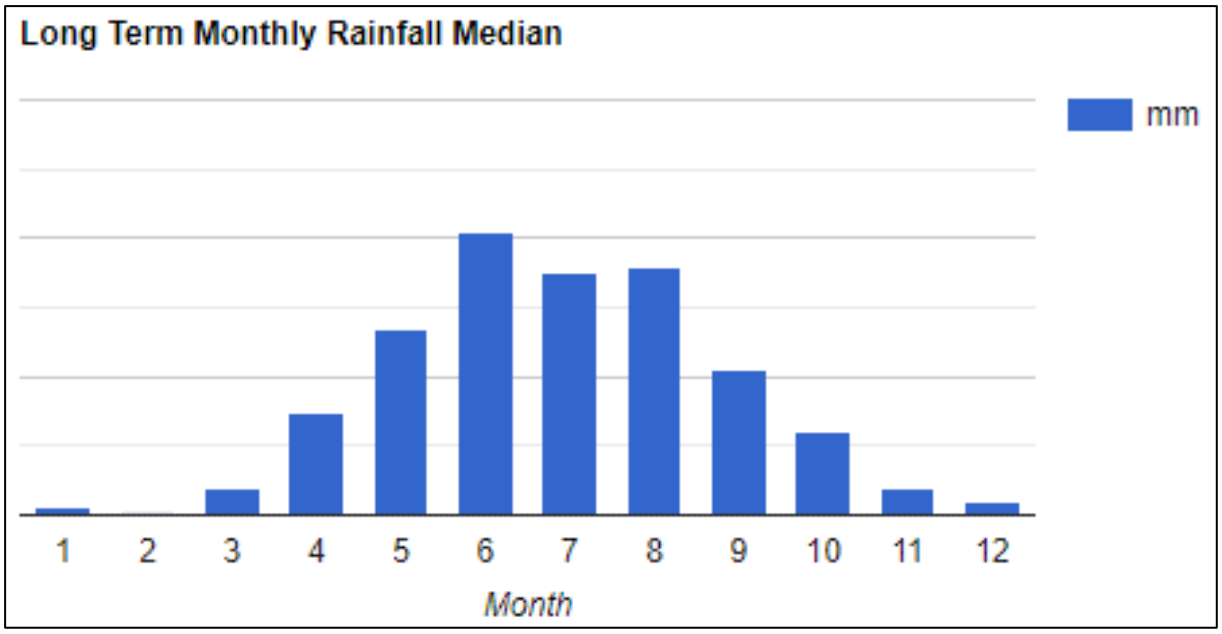


**Figure 34:** Average monthly Rainfall for the Velddrif area where the Sunveld Solar PV facility is proposed (Belcher, 2023).

The average annual temperatures range from 7° in July to 30° in January.

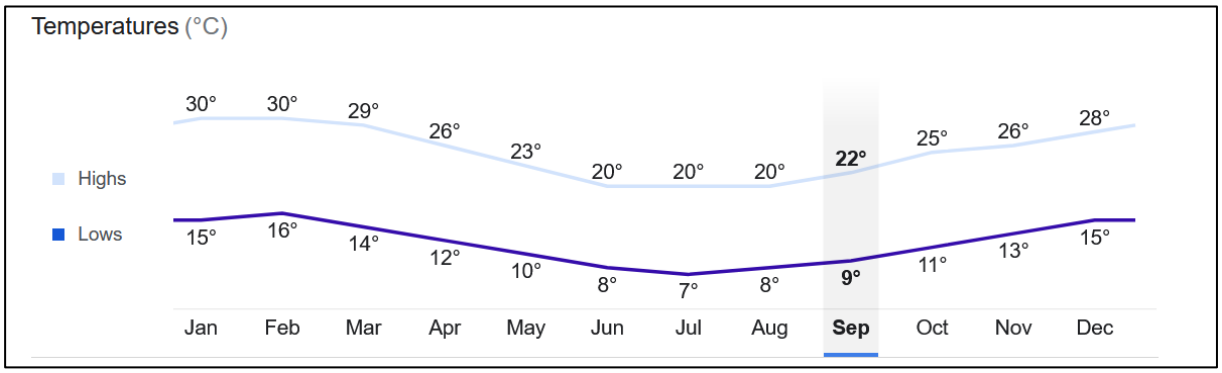


**Figure 35:** Average Monthly Temperatures for the Velddrif Area.

## 5.3 TOPOGRAPHY

According to the Visual Specialist, Mr Stephen Stead (Annexure E7), the terrain is predominantly flat and gently undulating.

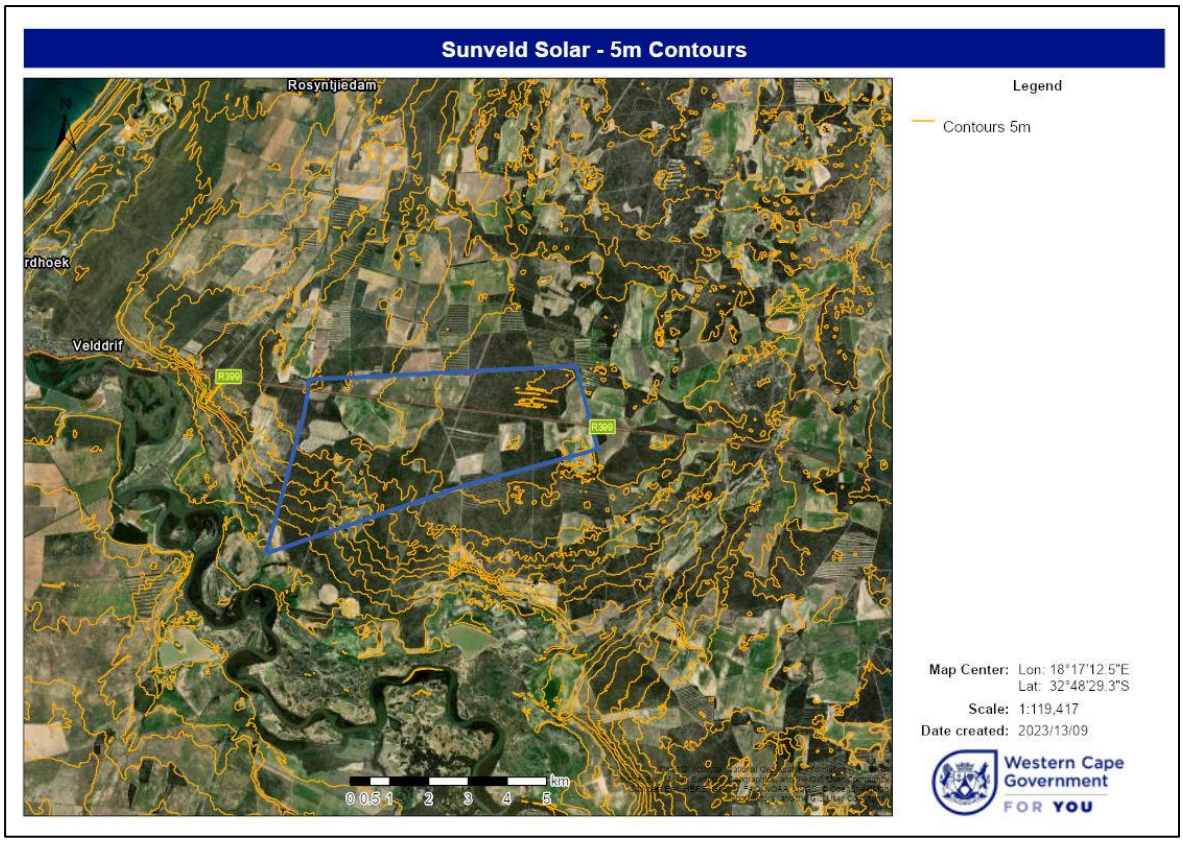


**Figure 36:** 5 Meter contour map of the Sunveld Solar PV site, showing the gently sloping Nature of the Study Site (Cape Farm Mapper, 2023)

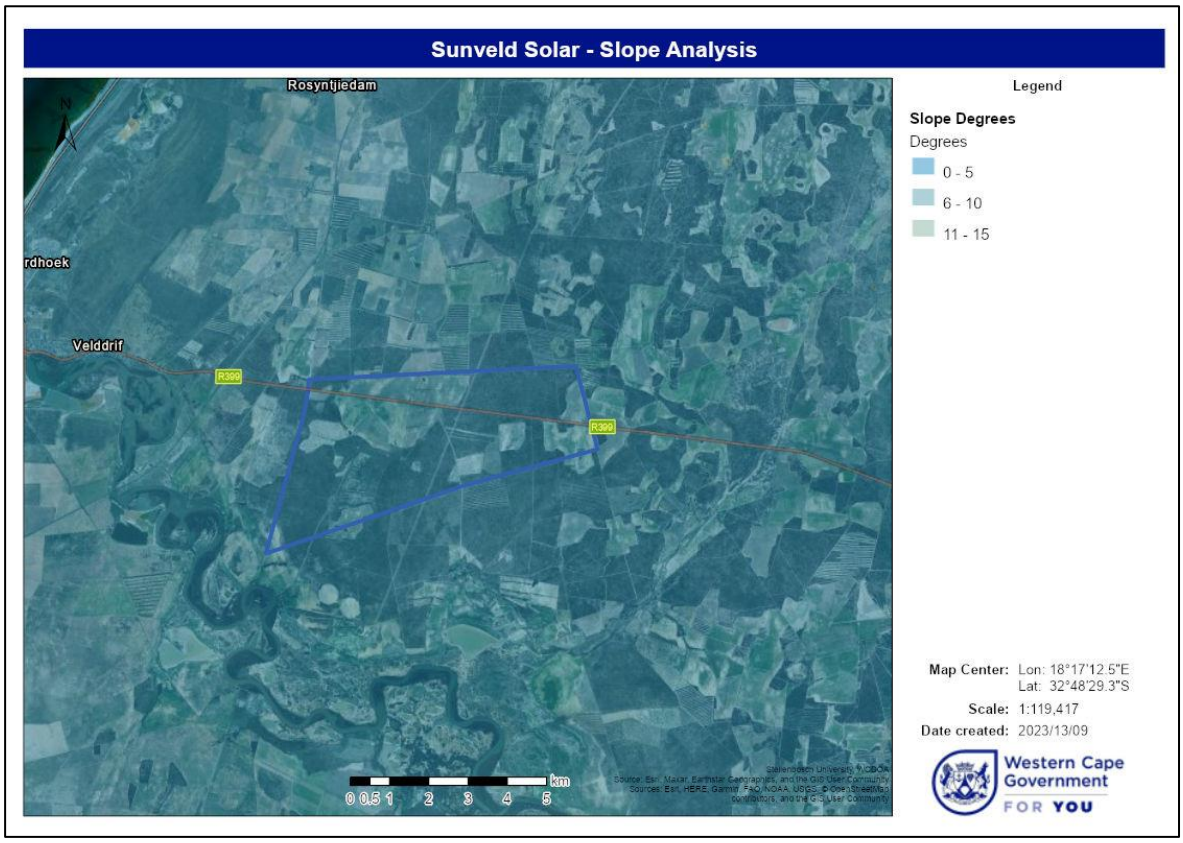


**Figure 37:** Slope Analysis of the Sunveld Solar PV facility showing the entire study site as having between a 1 and 5 degree slope (Cape Farm Mapper, 2023).

## 5.4 BOTANICAL COMPOSITION OF THE SITE

Biodiversity Africa undertook a Terrestrial Biodiversity Site Sensitivity Verification which included a review of the Botanical component of the site (Annexure E1) from which the following is summarised.

### 5.4.1 Broad-Scale Vegetation Patterns

According to the national vegetation map, the project area falls within Saldanha Flats Strandveld.

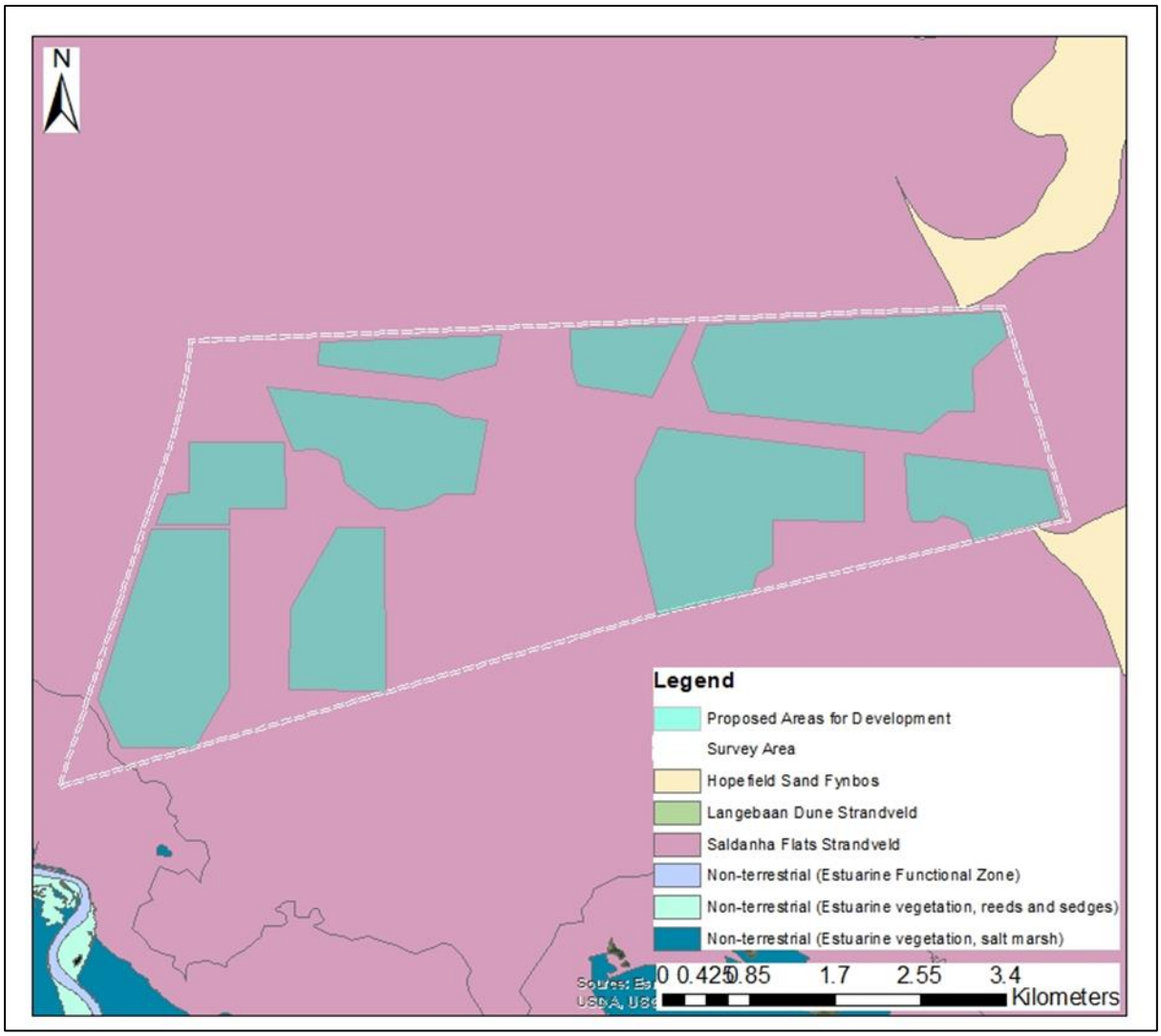


**Figure 38:** Broad Scale Vegetation Types Associated with Sunveld Solar PV showing that the entire study site falls within the Saldanha Flats Strandveld vegetation type (Biodiversity Africa, 2023).

Saldana Flats Strandveld is classified as Endangered (EN) (B1(i)) due to its narrow distribution and high rates of habitat loss in the past 28 years which has placed this ecosystem type at risk of collapse (DFFE, 2022). Only 36% (591.6 km2) of the historical extent remains and it is considered poorly protected. The conservation target for Saldanha Flats Strandveld is 24%.

### 5.4.2 Habitats & Plant Communities

The broad scale mapping was confirmed by the specialist in the field survey which identified patches of near-intact and degraded Saldanha Flats Strandveld present within the project area as well as Secondary Vegetation and Transformed area. Each of these are described in further detail below.

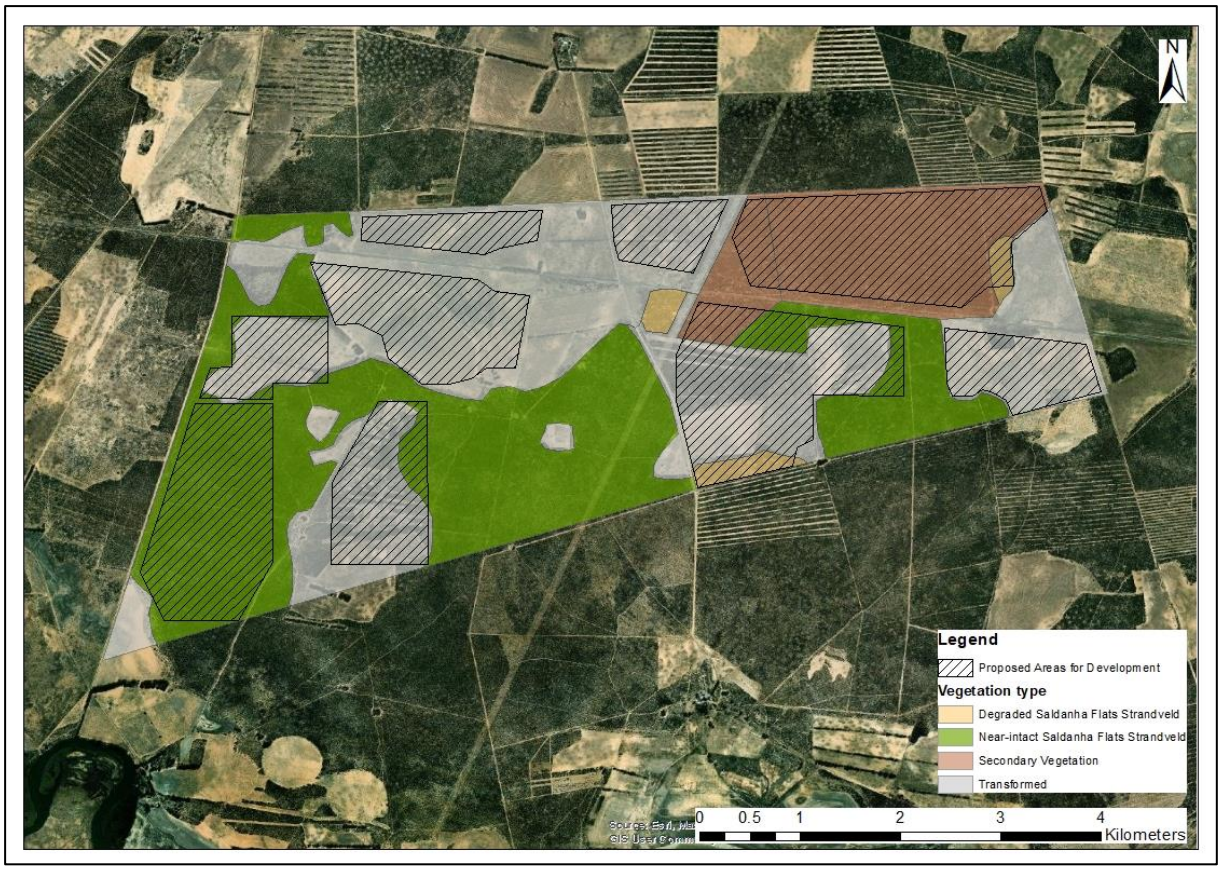


**Table 15:** Vegetation Map[38] of the study site based on the field survey undertaken by the Terrestrial Biodiversity Specialist (Biodiversity Africa, 2023).

#### 5.4.2.1 Saldanha Flats Strandveld (Degraded and Near-Intact)

Saldanha Flats Strandveld occurs on extensive coastal flats (altitudes of 0-120 m) from St Helena Bay and the southern banks of the Great Berg River near its mouth in the north, to Saldanha and Langebaan in the south, with the southernmost extension at the coast near Yzerfontein and Rietduin. This sclerophyllous shrubland is characterised by a sparse emergent and moderately tall shrub layer and an open succulent shrub layer forming the undergrowth. This vegetation type is known for its conspicuous displays of geophytes and herbaceous flora in spring (Rebelo et al., 2006).

Within the project area, shrubs such as Searsia glauca, Olea exasperate, Searsia laevigata, Searsia dissecta, Gymnosporia buxifolia and Euclea tomentosa formed bush clumps surrounded by smaller shrubs, herbs and restios such as Eriocephalus racemosus, Zygophyllum morgsana, Struthiola ciliata, Crassothonna cylindrica, Lycium amoena, Asparagus capensis, A. rubicundus, Salvia africana, Salvia lanceolata, Ruschia macowanii, Zygophyllum flexuosa, Gladiolus carinatus, Microloma sagittatum, Euphorbia mauritanica, a number of Oxalis, Babiana and Lachenalia species, as well as Thamnochortus sp. and Wildenowia incurvata.

The patches of degraded Saldanha Flats Strandveld had a lower species diversity than the near-intact patches.

#### 5.4.2.2 Secondary Vegetation

Patches of Secondary Vegetation were present in the north eastern corner of the project area. This vegetation shows evidence of historical disturbance and was more heavily infested with alien invasive species such as *Acacia cyclops*. Species diversity was lower and comprised of species that were more

[38] The proposed development areas depicted in this map are those for Layout Alternative 2. The preferred layout, layout alternative 3 was then developed to address the sensitivities determined by the specialist.

resilient to disturbance such as annuals. However, a population of *Leucospermum rodolentum*, which is listed as a VU species, was recorded within this area.

#### 5.4.2.3 Transformed Area

The Transformed areas are characterised by vegetation that has been cleared and the land has been ploughed and used for agricultural purposes. These areas are of low ecological significance but have been mapped as they are suitable for development from an ecological perspective.

### 5.4.3 Botanical Species of conservation concern.

According to the terrestrial biodiversity specialist, fifty-eight (58) species were recorded within the study site. Of these species, one was listed as Endangered (EN), two as Vulnerable (VU) and one as Near Threatened (NT).

These species were present within the near-intact vegetation except for a population of Leucospermum rodolentum (VU) which were found to occur within the secondary vegetation, north of the R399.

The specialist desktop assessment of the study site identified thirty-seven (37) threatened and near threatened species that could occur within the project area. Based on the results of the field survey, it was determined that of these thirty-seven (37) species, two (2) were confirmed to occur in the project area, ten (10) have a high likelihood of occurrence based on suitable available habitat being present, three (3) have a moderate likelihood of occurrence and twenty-four (24) have a low likelihood of occurrence.

**Table 16:** Assessment of the likelihood of occurrence of Species of Conservation Concern identified in literature as possibly occurring within the Study Site (Biodiversity Africa, 2023).

| Species | Conservation Status | Range and Habitat | Likelihood of Occurrence |
|---|---|---|---|
| Sensitive species 878 | EN<br>B1ab(i,ii,iii,iv,v) | This species occurs from Milnerton to Vredenburg Peninsula and has an EOO 840-1400 km². It is extinct in the southern part of the range.<br>It occurs in sand plain fynbos and dune strandveld, sandy coastal flats and dunes (von Staden, 2008). There are records of this species on iNaturalist near Hopefield, Langebaan, St Helena Bay and Jacobsbaai. There is also a record north east of the project area. | Confirmed<br><br>This species was recorded within the project area |
| *Leucospermum rodolentum* | VU<br>A2c | This species occurs from Namaqualand to the Cape Peninsula. The EOO for this species is not specified.<br>It is associated with sand fynbos on the west coast lowlands, surviving in arid areas by tapping deep water. Saldanha Flats Strandveld is one of the major habitats of this species (Rebelo *et al*., 2005). | Confirmed<br><br>This species was recorded within the project area |
| *Sarcocornia freitagii* | EN<br>B1ab(ii,iii,iv,v)+<br>2ab(ii,iii,iv,v) | This species occurs in Velddrif (Western Cape Province) and has a small EOO of 103 km².<br>It is known from five locations and is associated with heavy sandy, clayey soils possibly derived from calcrete within Saldanha Flats Strandveld (Steffen *et al*., 2014). | High<br><br>Suitable habitat was present. |
| *Xiphotheca reflexa* | EN<br>A2bc;<br>B1ab(i,ii,iii,iv,v) | This species occurs from Piketberg to Elim (Western Cape Province) and has an EOO of 2389 km².<br>It is known from seven small, severely fragmented populations and is associated with sandy fynbos. Saldanha Flats Strandveld is one of the major habitats of this species (Victor *et al*., 2005). | High<br><br>Suitable habitat was present. |

| Species | Conservation Status | Range and Habitat | Likelihood of Occurrence |
|---|---|---|---|
| | | There is a record of this species on iNaturalist near Langebaan. | |
| *Ferraria parva* | EN<br>C2a(i) | This species occurs on the Vredenburg Peninsula (Western Cape Province) with a small EOO of 336 km².<br>It is known from eight subpopulations and is associated with deep sandy ground, sand over limestone, and crevices in limestone or calcrete pavement within Saldanha Limestone Strandveld and Saldanha Flats Strandveld (von Staden and Claassens, 2012).<br>There are records of this species on iNaturalist near Langebaan and south east of the project area. | High<br><br>Suitable habitat was present. |
| *Leucadendron stellare* | EN<br>A2c | This species is endemic to the coastal lowlands of the Western Cape, where it occurs from Aurora to Cape Flats (Western Cape Province). The EOO of this species is not specified.<br>It occurs in level, dry sands over clay, 30-170 m (Rebelo *et al*., 2018).<br>There are records of this species on iNaturalist near Sauer and south of the project area. | High<br><br>Suitable habitat was present. |
| *Argyrolobium velutinum* | VU<br>A2c | This species occurs from Namaqualand to the Cape Flats and has an EOO of 29 500 km².<br>It is associated with alkaline coastal sands in Sandveld and sandveld-stranveld ecotones. Saldanha Flats Strandveld is one of the major habitat types of this species (Helme *et al*., 2016).<br>There are records of this species on iNaturalist near Jacobsbaaisouth east of the project area. | High<br><br>Suitable habitat was present. |
| *Caesia sabulosa* | VU<br>B1ab(ii,iii,iv,v) | This species occurs from Southern Namaqualand, Kotzesrus to the Bokkeveld Plateau and the Cederberg, and southwards along the West Coast coastal plain to Darling. It has an EOO of 2200 km² and is known from less than 10 locations.<br>It is occurs on deep sandy flats (Helme and Raimondo, 2007).<br>There is a record of this species on iNaturalist near Langebaan. | High<br><br>Suitable habitat was present. |
| *Cotula duckittiae* | VU<br>B1ab(ii,iii) | This species occurs from Yzerfontein to Bokbaai and has an EOO of 650 km².<br>It is known from only 10 locations and is associated sandy flats (Helme, 2006).<br>There is a record of this species on iNaturalist south of the project area. | High<br><br>Suitable habitat was present. |
| *Leucadendron foedum* | VU<br>A2c | This species occurs from Piketberg to Hopefield. The EOO for this species is not specified.<br>It is associated with sandy flats at 30-100m (Rebelo *et al*., 2006).<br>There are records of this species on iNaturalist near Hopefield and north of Aurora. | High<br><br>Suitable habitat is present. |
| *Leucospermum hypophyllocarpodendron subsp. canaliculatum* | VU<br>A2c | This species occurs from Piketberg to Hopefield, Cape Flats, Riebeek-Kasteel and Breede River Valley.<br>It has an EOO of 4365 km², AOO 426 km² and is only known from six locations.<br>This species occurs on flats with deep sandy soils (0-200 m). | High<br><br>Suitable habitat is present. |

| Species | Conservation Status | Range and Habitat | Likelihood of Occurrence |
|---|---|---|---|
| | | There are records of this species on iNaturalist near Hopefield and Langebaan. | |
| *Oncosiphon africanum* | VU<br>B1ab(ii,iii,iv,v) | This species occurs from the Berg River Mouth to the Cape Peninsula It has an EOO of 4800 km² and is known from fewer than 10 locations.<br>It is associated with coastal sands, salt marshes and inland sandy areas (Helme *et al*., 2007).<br>There are records of this species on iNaturalist in Langebaan as well as south and north of the project area. | High<br><br>Suitable habitat is present. |
| *Leucadendron cinereum* | VU<br>A2c+3c+4c | This species occurs from the Berg River mouth to Kraaifontein. The EOO for this species is not specified.<br>It is associated with flats within Sand Fynbos. Major habitats include Saldanha Flats Strandveld, Swartland Silcrete Renosterveld, Cape Flats Sand Fynbos, Atlantis Sand Fynbos, and Hopefield Sand Fynbos (Rebelo *et al*., 2004).<br>There are records of this species on iNaturalist near Langebaan. | Moderate<br><br>Suitable habitat is present. |
| *Protea scolymocephala* | VU<br>A2c | This species occurs from Gifberg to Hermanus. The EOO of this species is not specified.<br><br>It is associated with sandy flats and coastal lowlands, often near drainage lines (0-400 m) (Rebelo *et al*., 2005). | Moderate<br><br>No suitable habitat present. |
| Sensitive species 222 | VU | The range of this species is not specified due to sensitivity of this species but endemic to the Western Cape Province. EOO 12 000 km² and known from less than 10 locations.<br>This species is associated with sandy or clay flats (Helme and Raimondo, 2007). | Moderate<br><br>Although suitable habitat is present, given how few locations remain it is unlikely to be present within the project area. |
| *Lampranthus coccineus* | CR<br>C2a(i) | This species occurs from Graafwater to Saldanha and Darling (Western Cape Province) and has an EOO 1063 km².<br>It is only known from five small, isolated subpopulations and is associated with seasonally moist sandy flats and lowland shale (Klak *et al*., 2016). | Low<br><br>No suitable habitat present. |
| *Cleretum clavatum* | EN<br>B1ab(i,ii,iii,iv,v) | This species is endemic to the Western Cape Province occurring from Hopefield to Cape Flats with an EOO of 1855 km². Only 3 of 10 known locations remain.<br>It is associated with seasonally wet sands (Klak and Raimondo, 2006). | Low<br><br>No suitable habitat present. |
| *Erepsia brevipetala* | EN<br>B1ab(ii,iii,v) | This species occurs from Piketberg to Hopefield (Western Cape Province) and has an EOO<1000 km².<br>It is only known from three known locations and is associated with white clay slopes near watercourses (Helme *et al*., 2006). There is a record of this species north east of Hopefield. | Low<br><br>No suitable habitat present. |

| Species | Conservation Status | Range and Habitat | Likelihood of Occurrence |
|---|---|---|---|
| *Echiostachys spicatus* | EN B1ab(ii,iii,iv,v) | This species occurs from St. Helena Bay to Somerset West (Western Cape Province) and has an EOO 1700 km². It is known from six severely fragmented subpopulations and occurs in seasonally damp sandy flats overlying clays in Saldanha Flats Strandveld, Swartland Granite Renosterveld, Swartland Silcrete Renosterveld, Cape Flats Sand Fynbos, Atlantis Sand Fynbos, Hopefield Sand Fynbos (Helme and Raimondo, 2007). There are records of this species on iNaturalust near Vredenberg, Langebaan and south of Hopefield. | Low<br><br>No suitable habitat present. |
| *Empodium veratrifolium* | EN B1ab(ii,iii,iv,v) | This species occurs from Lambert's Bay to Saldanha Bay (Western Cape Province) and has an EOO<500 km². It is known from less than 15 subpopulations and is associated granite boulders but occasionally also on calcrete usually within coastal areas (Helme and Raimondo, 2005). There are record of this species on iNaturalist near Langebaan, Vredenburg, Saldanha and St Helena Bay. | Low<br><br>No suitable habitat present. |
| *Limonium depauperatum* | EN B1ab(i,ii,iii,iv) | This species occurs from the Cape Flats up the West Coast and has an EOO<5000 km². It is known from four locations which are all declining. It is associated with river and estuary banks in Saldanha Flats Strandveld and Cape Flats Sand Fynbos (Victor and Mucina, 2004). | Low<br><br>Suitable habitat not present within the project area. |
| *Cotula eckloniana* | VU B1ab(iii,v)+2ab(iii,v) | This species occurs from Lambert's Bay southwards along the Cape West Coast to the Cape Peninsula and Agulhas Plain. It has an EOO of 8587 - 18 685 km² and AOO of <100 km². It is only known from seven (7) confirmed locations but up to 15 locations possible. It is associated with saline alluvium floodplains, salt pans and sandy coastal flats (Powell *et al*., 2013). | Low<br><br>Suitable habitat is not present. |
| *Drosanthemum hispifolium* | VU B1ab(ii,iii,iv,v) | This species occurs from Clanwilliam to Koeberg and has an EOO 14 400 km². It is known from eight (8) locations remain and is associated with lowland hills or flats in loamy shale (Klak *et al*., 2006). | Low<br><br>Suitable habitat is not present. |
| *Ferraria densepunctulata* | VU C2a(i) | This species occurs from Lambert's Bay to Langebaan and is known from between six and eight remaining subpopulations with less than 1000 mature individuals remaining. It is associated with rocky or calcareous sandy sites near the coast, as well as limestone pavements on the Vredenburg Peninsula (von Staden and Claassens, 2012). | Low<br><br>Suitable habitat is not present. |
| *Galenia crystallina var. maritima* | VU B1ab(iii) | This species occurs from Lambert's Bay to the Cape Peninsula and has an EOO of 3580 km². It is known from between five to ten locations and is associated with damp hollows in silt near the sea (von Staden, 2016). | Low<br><br>Suitable habitat is not present. |

| Species | Conservation Status | Range and Habitat | Likelihood of Occurrence |
|---|---|---|---|
| *Geissorhiza lewisiae* | VU B1ab(i,ii,iii,iv,v) +2ab(i,ii,iii,iv,v) | This species occurs from Olifants River Valley to the Vredenburg Peninsula and has an EOO of 2 082 km². It is known from between five and nine locations and is associated with granite outcrops, limestone pavements and calcrete soils in Saldanha Flats Strandveld, Saldanha Granite Strandveld, and Citrusdal Shale Renosterveld (von Staden, 2011). | Low<br><br>Suitable habitat is not present. |
| *Helichrysum bachmannii* | VU B1ab(iii,iv,v)+ 2ab(iii,iv,v) | This species occurs in a small area between Langebaan, Velddrif and Vredenburg on the West Coast<br>It has a small EOO of 716 km² and is known from four locations although it is suspected that there is a minimum of five more.<br>It occurs on granite outcrops and in sandy soils within Saldanha Granite Strandveld, Saldanha Flats Strandveld, and Langebaan Dune Strandveld near the coast (Helme and Raimondo, 2010).<br>There are records of this species on iNaturalist near St. Helena Bay and Jacobsbaai. | Low<br><br>Suitable habitat is not present. |
| *Helichrysum dunense* | VU B1ab(ii,iii,v) | This species occurs from Elandsbaai in the Western Cape to the Orange River in the Northern Cape. It has an EOO of 1500 km² and is known from five locations but suspected to be under collected and to occur from around 10 locations.<br>It is associated with coastal calcareous dunes (Helme and Raimondo, 2006). | Low<br><br>Suitable habitat is not present. |
| *Lachnaea capitata* | VU A2ac | This species occurs from Clanwilliam to the Cape Peninsula, Franschhoek and the Breede River Valley. The EOO for this species is not specified.<br>It is associated with acid sand flats that are often seasonally damp (Beyers *et al*., 2006).<br>There are records of this species on iNaturalist near Hopefield. | Low<br><br>Suitable habitat is not present. |
| *Lachnaea grandiflora* | VU A2ac | This species occurs from Swartboskraal in Clanwilliam to the Cape Peninsula and Bredasdorp. The EOO for this species is not specified.<br>It is associated with sandy flats and sandy areas on lower mountain slopes within Fynbos. Saldanha Flats Strandveld is one of the major habitat types of this species (Raimondo and Helme, 2008).<br>There are records of this species on iNaturalist near Hopefield and Grootfontein. | Low<br><br>Suitable habitat is not present. |
| *Limonium acuminatum* | VU A2c; B1ab(iii,iv,v)+ 2ab(iii,iv,v); C1 | This species occurs from Rocher Pan to Yzerfontein.<br>It has an EOO of 1200 km² and is associated with coastal limestone outcrops and occasionally on calcareous coastal sands in Langebaan Dune Strandveld, Saldanha Limestone Strandveld, Saldanha Flats Strandveld, and Saldanha Granite Strandveld (Helme *et al*., 2005). | Low<br><br>No suitable habitat present. |
| *Manulea corymbosa* | VU B1ab(ii,iii,iv,v)+ 2ab(ii,iii,iv,v) | This species occurs from Velddrif to the Cape Peninsula and has an EOO <1880 km².<br>It occurs on sandy soils near the coast (Turner, 2007). | Low<br><br>No suitable habitat present.. |

| Species | Conservation Status | Range and Habitat | Likelihood of Occurrence |
|---|---|---|---|
| | | There are records of this species on iNaturalist in the West Coast National Park. | |
| *Otholobium venustum* | VU<br>B1ab(ii,iii,v)+<br>2ab(ii,iii,v) | This species occurs from Lambert's Bay to Langebaan and has an EOO and AOO<1000 km². It is known from eight locations.<br>This species is associated with calcareous sands and clays within 3 km of the coast (Helme and Raimondo, 2005). | Low<br><br>No suitable habitat present. |
| Sensitive species 1225 | VU<br>A2c | This species occurs from Lambert's Bay to Melkbosstrand, and inland to Citrusdal, Piketberg, Tulbagh and Kalbaskraal.<br>It has an EOO of 17 789 km² and is associated with the coastal lowlands on stony or gravelly clay soil derived from shale or granite on lower slopes and flats within Fynbos (Helme *et al*., 2018). | Low<br><br>Suitable habitat is not present. |
| Sensitive species 599 | VU<br>A2c | This species occurs from Elandsbaai to the Cape Peninsula and Bredasdorp. It has an EOO of 28 608 km² and AOO estimated <2000 km² and is estimated to occur between 20 and 30 locations.<br>This species is a habitat specialist that occurs on damp sandy flats on wetland margins and floodplains within Fynbos (Helme and von Staden, 2018). | Low<br><br>No suitable habitat present. |
| Sensitive species 816 | CR<br>B2ab(ii,iii,iv,v);<br>C2a(i) | This species occurs from Saldanha to Milnerton and has a small AOO of 5 km². Three small, severely fragmented subpopulations each consisting of no more than 50 mature individuals are known.<br>This species is associated with calcareous sands or limestone gravel within coastal scrubs (Goldblatt *et al*., 2006).<br>There are records of this species on iNaturalist near Langebaan and Vredenburg. | Low<br><br>No suitable habitat present. |
| Sensitive species 244 | VU<br>B1ab(ii,iii,iv,v) | This species occurs from Lamberts Bay to Yzerfontein and inland to Redelinghuys and Hopefield. It has an EOO of 3500 km² and is known from 10 known locations.<br>It is associated with limestone and granite outcrops (Helme and Raimondo, 2008). | Low<br><br>Suitable Habitat is not present. |
| *Steirodiscus tagetes* | VU<br>B1ab(ii,iii,iv,v) | This species occurs along the Cape West Coast between St Helena Bay and False Bay. It has an EOO of 5325 km² and is known from six to eight remaining locations.<br>It is associated with sand dunes near the coast (Raimondo *et al*., 2016). | Low<br><br>No suitable habitat present. |
| *Wahlenbergia umbellata* | VU<br>D2 | This species is only known from one location in Lambert's Bay. The EOO of this species is not specified.<br>It is associated with coastal sands (Welman and Victor, 2005). | Low<br><br>Project area does not occur in Lamberts Bay where the one known population occurs. |

## 5.5 TERRESTRIAL FAUNAL COMPONENT OF THE SITE

Biodiversity Africa undertook a Animal Species Assessment which formed part of larger Terrestrial Ecosystems Site Sensitivity Verification (Appendix E1). In addition to this, Dr Jonothan Colville undertook an invertebrate species assessment of the site (Annexure E2).

According to the Terrestrial Biodiversity Specialist, the Western Cape is host to approximately 62 amphibian species, 155 reptile species and 172 mammal species. The study site is within or partly within the distribution range of approximately 12 amphibian species, 62 reptile species and 108 mammal species.

### 5.5.1 Faunal Species of conservation concern

According to the terrestrial biodiversity specialist, faunal species of conservation concern are those listed as threatened, near-threatened and/or are endemic or range restricted. The Western Cape hosts several terrestrial vertebrate species of conservation concern of which four have a distribution which includes the Study. This includes one amphibian species, one reptile species and two mammal species.

**Table 17**: Faunal Species of Conservation Concern that have a distribution which includes the study site (Biodiversity Africa, 2023)

| Taxon | Common name | Species | Threat status | Likelihood of Occurrence | Importance of project area to SCC |
|---|---|---|---|---|---|
| Amphibian | Cape Caco | *Cacosternum capense* | NT | High | Medium |
| Reptile | Kasner's Dwarf Burrowing Skink | *Scelotes kasneri* | EN | High | Medium |
| Mammal | Grant's Golden Mole | *Eremitalpa granti* | VU | High | Medium |
| | African Clawless Otter | *Aonyx capensis* | NT | Low | Low |

In addition to these species, the Screening tool for Sunveld Solar PV also identified the possible occurrence of an invertebrate species of conservation concern, namely *Pachysoma Aesculapius*. Dr Jonothan Colville was appointed to undertake an invertebrate study of the site to determine to potential presence of this species (Appendix E2).

According to the specialist, this species of flightless dung beetle is endemic to South Africa and restricted to low-altitude areas (>300m) of the south-western parts of the Western Cape Province.

A historical collection record from 1973 for P is known from the north-eastern part of the study site.

Historical collection records indicate that this species is associated with several types of Sand Fynbos (Leipoldtville Sand Fynbos, Atlantis Sand Fynbos, and Hopefield Sand Fynbos). It has a limited range, extending from Cape Town northwards to the mouth of the Olifants River

The specialist has made certain recommendations regarding the layout to ensure the persistence of this species, which have been considered in the development of Layout Alternative 3 (Preferred Alternative)

## 5.6 AQUATIC COMPOSITION OF THE STUDY SITE

Ms Toni Belcher of Blue Science undertook an Aquatic Ecosystems Assessment of the proposed project site. Please refer to the Aquatic Ecosystems Site Sensitivity Verification report attached in **Annexure E4** from which the following has been drawn.

The specialist confirmed that the study site is located within an area that is mostly considered of Low Aquatic Biodiversity Combined Sensitivity as it does not lie within a Freshwater Ecosystem Priority Area) River Sub catchment or has any Aquatic Critical Biodiversity Areas mapped. The site is also not located within Strategic Water Source

The aquatic features occurring within the site comprise some disturbed depression wetlands within cultivated areas on the site and the floodplain of the Berg River Estuary in the south-western corner of the site.

The depression wetlands as well as the floodplain wetland are in largely to seriously modified ecological condition within the site as they are all in cultivated areas.

**Figure 39:** Photographic Examples of the Depression wetlands present in the study site (Belcher, 2023)

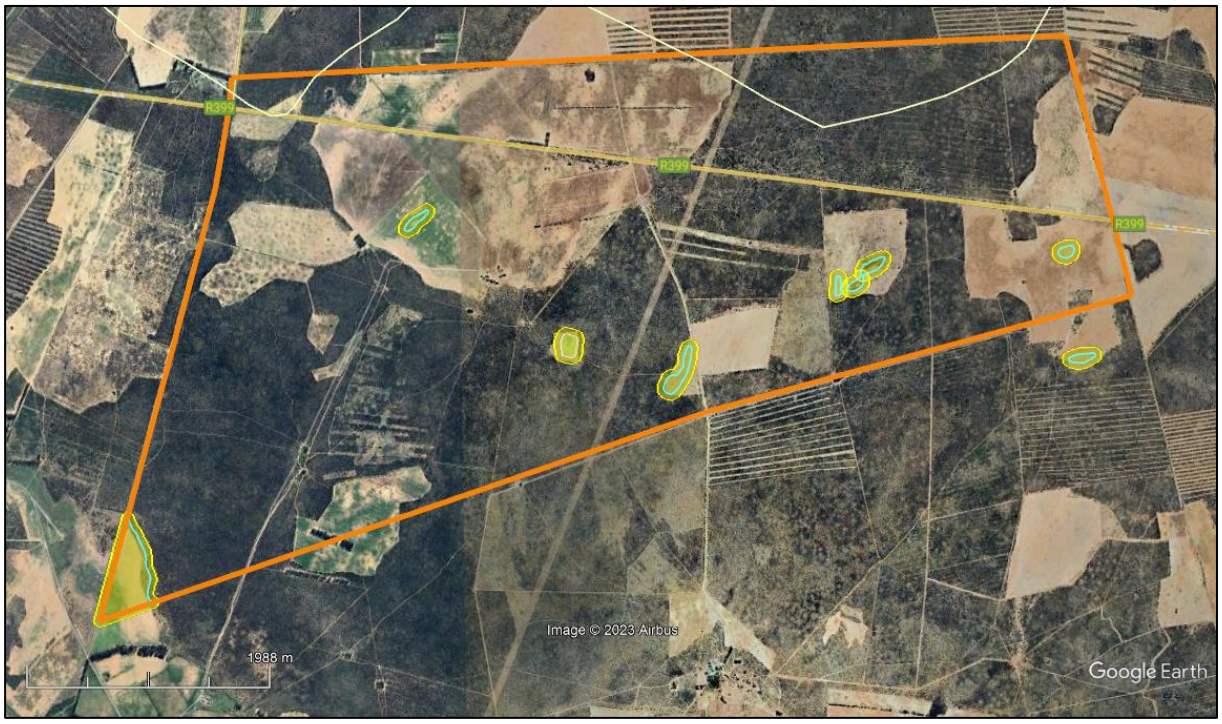


**Figure 40:** Mapped aquatic features within the study site (Belcher, 2023).

## 5.7 AVIFAUNAL COMPOSITION OF THE SITE

An Avifaunal specialist, Mr Albert Froneman, was appointed to undertake a site sensitivity verification of the proposed Sunveld Solar PV facility, this study also included the compilation of a Black Harrier suitability model by Mr Robin Colyn. Please refer to Appendix E3 for a copy of the Avifauna Site Sensitivity Verification Report.

The first phase of the avifaunal site monitoring took place on 26 June 2023, with the second monitoring session planned to commence in spring.

The specialist confirmed that during the site assessment, distribution and abundance of the bird species in and near the Project Site is mostly associated with natural vegetation. There are however some species that were associated with the modified environments, as follows:

- High Voltage Power Lines: The 400kV Aurora Juno 1 power line traverses the Project Site. Power lines could provide roosting and nesting habitat for priority species, especially raptors.

- Alien Trees: The Project Site contains clumps of alien trees. The trees could attract a variety of bird species for nesting and roosting.

- Agriculture: The Project Site contains agricultural fields, mainly canola, wheat, grains, and planted pastures. Some priority species are likely to be associated with the cultivated fields, especially to forage (e.g., raptors and small birds). The Cape Weaver, Large-billed Lark, Blue Crane, and Barn Swallow are some of the priority species that could utilise these areas.

The specialist confirmed that the SABAP2 data indicated that a total of 259 bird species could potentially occur within the Broader Area where the Project Site is located. Of these, 135 species are classified as priority species for solar developments and 20 of these are South African Red Listed species (i.e., Species of Conservation Concern – SCC).

Of the 135 priority species, 85 are likely to occur regularly in or near the Project Site.

**Table 18:** Avifaunal Species that could potentially occur on or in the vicinity of the study site (Froneman, 2023)

| **Avifaunal Species – SABAP 2** | | |
|---|---|---|
| Acacia Pied Barbet | Large-billed Lark | Sickle-winged Chat |
| African Black Duck | Lark-like Bunting | South African Shelduck |
| African Black Swift | Laughing Dove | Southern Black Korhaan |
| African Darter | Layard's Warbler | Southern Boubou |
| African Dusky Flycatcher | Lesser Flamingo | Southern Double-collared Sunbird |
| African Fish Eagle | Lesser Honeyguide | Southern Fiscal |
| African Harrier-Hawk | Lesser Kestrel | Southern Grey-headed Sparrow |
| African Hoopoe | Lesser Sand Plover | Southern Masked Weaver |
| African Marsh Harrier | Lesser Swamp Warbler | Southern Pochard |
| African Openbill | Levaillant's Cisticola | Southern Red Bishop |
| African Oystercatcher | Little Bittern | Speckled Mousebird |
| African Palm Swift | Little Egret | Speckled Pigeon |
| African Paradise Flycatcher | Little Grebe | Spotted Eagle-Owl |
| African Pied Wagtail | Little Rush Warbler | Spotted Flycatcher |
| African Pipit | Little Stint | Spotted Thick-knee |
| African Rail | Little Swift | Spur-winged Goose |
| African Red-eyed Bulbul | Little Tern | Streaky-headed Seedeater |
| African Reed Warbler | Long-billed Crombec | Terek Sandpiper |
| African Sacred Ibis | Ludwig's Bustard | Three-banded Plover |
| African Snipe | Maccoa Duck | Verreaux's Eagle |
| African Spoonbill | Malachite Kingfisher | Water Thick-knee |
| African Stonechat | Malachite Sunbird | Wattled Starling |
| African Swamphen | Mallard | Western Barn Owl |
| Alpine Swift | Marsh Sandpiper | Western Cattle Egret |
| American Golden Plover | Martial Eagle | Western Osprey |
| Ant-eating Chat | Mountain Wheatear | Whiskered Tern |
| Arctic Tern | Namaqua Dove | White Stork |
| Banded Martin | Namaqua Sandgrouse | White-backed Duck |
| Bank Cormorant | Neddicky | White-backed Mousebird |
| Barn Swallow | Olive Thrush | White-breasted Cormorant |
| Bar-tailed Godwit | Pale Chanting Goshawk | White-faced Whistling Duck |

| Avifaunal Species – SABAP 2 | | |
|---|---|---|
| Bar-throated Apalis | Pearl-breasted Swallow | White-fronted Plover |
| Black Crake | Peregrine Falcon | White-necked Raven |
| Black Harrier | Pied Avocet | White-rumped Sandpiper |
| Black Sparrowhawk | Pied Crow | White-rumped Swift |
| Black Stork | Pied Kingfisher | White-throated Canary |
| Black-chested Snake Eagle | Pied Starling | White-throated Swallow |
| Black-crowned Night Heron | Pink-backed Pelican | White-winged Tern |
| Black-headed Canary | Pin-tailed Whydah | Wilson's Phalarope |
| Black-headed Gull | Plain-backed Pipit | Wood Sandpiper |
| Black-headed Heron | Purple Heron | Yellow Bishop |
| Black-necked Grebe | Quailfinch | Yellow Canary |
| Blacksmith Lapwing | Red Knot | Yellow-billed Duck |
| Black-winged Kite | Red-backed Shrike | Yellow-billed Kite |
| Black-winged Stilt | Red-billed Quelea | Yellow-billed Stork |
| Blue Crane | Red-billed Teal | Zitting Cisticola |
| Blue-billed Teal | Red-capped Lark | Greater Striped Swallow |
| Bokmakierie | Red-eyed Dove | Grey Heron |
| Booted Eagle | Red-faced Mousebird | Grey Plover |
| Brimstone Canary | Red-knobbed Coot | Grey Tit |
| Brown-throated Martin | Red-necked Phalarope | Grey-backed Cisticola |
| Burchell's Coucal | Red-winged Starling | Grey-backed Sparrow-Lark |
| Cape Batis | Reed Cormorant | Grey-headed Gull |
| Cape Bulbul | Rock Dove | Grey-winged Francolin |
| Cape Bunting | Rock Kestrel | Groundscraper Thrush |
| Cape Canary | Rock Martin | Gull-billed Tern |
| Cape Clapper Lark | Rosy-faced Lovebird | Hadada Ibis |
| Cape Cormorant | Ruddy Turnstone | Hamerkop |
| Cape Gannet | Ruff | Hartlaub's Gull |
| Cape Grassbird | Sand Martin | Helmeted Guineafowl |
| Cape Long-billed Lark | Sanderling | House Sparrow |
| Cape Longclaw | Sandwich Tern | Hybrid Duck |
| Cape Penduline Tit | Secretarybird | Hybrid Mallard |
| Cape Robin-Chat | European Bee-eater | Indian Peafowl |
| Cape Shoveler | European Roller | Intermediate Egret |
| Cape Sparrow | Familiar Chat | Jackal Buzzard |
| Cape Spurfowl | Fiery-necked Nightjar | Karoo Chat |
| Cape Teal | Fiscal Flycatcher | Karoo Lark |
| Cape Turtle Dove | Fork-tailed Drongo | Karoo Prinia |
| Cape Wagtail | Giant Kingfisher | Karoo Scrub Robin |
| Cape Weaver | Glossy Ibis | Karoo Thrush |
| Cape White-eye | Goliath Heron | Kelp Gull |
| Capped Wheatear | Great Crested Grebe | Kittlitz's Plover |
| Cardinal Woodpecker | Great Egret | Klaas's Cuckoo |
| Caspian Plover | Great White Pelican | Lanner Falcon |
| Caspian Tern | Greater Crested Tern | Common Moorhen |

| Avifaunal Species – SABAP 2 | | |
|---|---|---|
| Chat Flycatcher | Greater Flamingo | Common Ostrich |
| Chestnut-banded Plover | Greater Kestrel | Common Quail |
| Chestnut-vented Warbler | Greater Sand Plover | Common Redshank |
| Cloud Cisticola | Dusky Sunbird | Common Ringed Plover |
| Common Buzzard | Egyptian Goose | Common Sandpiper |
| Common Greenshank | Eurasian Curlew | Common Shelduck |
| Common House Martin | Eurasian Whimbrel | Common Starling |
| Diederik Cuckoo | Crowned Cormorant | Common Swift |
| Domestic Duck | Crowned Lapwing | Common Tern |
| Domestic Goose | Curlew Sandpiper | Common Waxbill |
| Damara Canary | | |

## 5.8 SOCIAL CONTEXT

This section has been prepared with input from the Social Specialist, Mr Tony Barbour and provides an overview of the spatial context of the Province, District Municipality, and Local Municipality within which Sunveld Solar PV is proposed.

### 5.8.1 Administrative context

The proposed SEF is located within the Berg River Local Municipality, which is one of five Local Municipalities that make up the West Coast District Municipality, a Category-C municipality, within the Western Cape Province.

The Berg River Local Municipality is bordered in the west by the Atlantic Ocean, in the east by the Swartland Local Municipality, the Matzikama Local Municipality to the north and the Saldhanha Bay Local Municipality to the south.

The municipal area covers an area of approximately 4407.04 km² and contains nine settlements of which three can be classified as towns, namely Piketberg, Porterville and Velddrif .

Piketberg serves as the administrative centre of the Bergrivier Municipality. These towns are between 100 and 140 kilometres respectively from Cape Town, with Velddrif situated on the coast and in close proximity to Saldanha Bay and the proposed Industrial Development Zone.

The four other towns that reflect more or less similar population size albeit different functions are Dwarskersbos, Redelinghuys, Aurora and Eendekuil. The two remaining settlements namely Wittewater and Goedverwacht are Moravian settlements and administered by the Moravian Church, as is Genadenberg.

### 5.8.2 Demographic overview

The population of the West Coast District Municipality increased by from 282 672 in 2001 to 391 766 in 2011, which represents a significant increase of ~ 38.5%. The population of the Berg River Local Municipality increased from 43 538 in 2001 to 61 897 in 2011, and increase of 33.0 % over the same period. The increase in the population is linked to an increase in the economically active 15-64 year and the 65 year and older age group.

The increase in the economically active 15-65 age group in also reflected in the decrease in the dependency ratios in both the district and local municipalities. It also reflects an influx of job-seekers to the area. The increase in the 65 year and older ager group is linked the areas reputation as a retirement destination.

As expected, the number of households in both the district and local municipalities increased between 2001 and 2011.

**Table 19:** Overview of key demographic indicators for the West Coast District Municipality and Brede River Local Municipality (Stats SA)

| | WCDM | | BRLM | |
|---|---|---|---|---|
| **ASPECT** | **2001** | **2011** | **2001** | **2011** |
| **Population** | 282 672 | 391 766 | 46 538 | 61 897 |
| **% Population <15 years** | 28.7 | 25.5 | 26.7 | 24.9 |
| **% Population 15-64** | 66.1 | 68.5 | 67.2 | 68.1 |
| **% Population 65+** | 5.2 | 6.0 | 6.1 | 7.0 |
| **Households** | 73 449 | 106 781 | 11 766 | 16 275 |
| **Household size (average)** | 3.5 | 3.4 | 3.3 | 3.5 |
| **Formal Dwellings %** | 90.5 % | 87.9 % | 93.5 % | 93.4 % |
| **Dependency ratio per 100 (15-64)** | 51.4 | 45.9 | 48.8 | 46.9 |
| **Unemployment rate (official) - % of economically active population** | 13.8 % | 14.6 % | 7.6 % | 6.8 % |
| **Youth unemployment rate (official) - % of economically active population 15-34** | 18.1 % | 19.9 % | 10.0 % | 9.6 % |
| **No schooling - % of population 20+** | 9.5 % | 5.4 % | 10.4 % | 6.4 % |
| **Higher Education - % of population20+** | 7.0 % | 8.1 % | 6.7 % | 7.7 % |
| **Matric - % of population 20+** | 19.1 % | 23.7 % | 19.4 % | 22.3 % |

### 5.8.3 Employment

The official unemployment rate in the district increased for the ten year period between 2001 and 2011 from 13.8 % to 14.6 %. This is likely to be due to influx of job seekers to the district and the inability to find employment. In addition, job losses are likely to be associated with the decline in the role of the fishing sector and the subsequent loss of employment opportunities in this sector.

### 5.8.4 Household income

Based on the data from the 2011 Census, 9.3 % of the population of the local municipality have no formal income, 1.4% earn between 1 and R 4 800, 1.9% earn between R 4 801 and R 9 600 per annum, 13.5% between R 9 601 and 19 600 per annum and 22.3% between R 19 600 and R 38 200 per annum (Census 2011). The poverty gap indicator produced by the World Bank Development Research Group measures poverty using information from household per capita income/consumption. This indicator illustrates the average shortfall of the total population from the poverty line. This measurement is used to reflect the intensity of poverty, which is based on living on less than R3 200 per month for an average sized household. Based on this measure 48.4% of the local municipalities population live below the poverty line.

### 5.8.5 Education

The education levels in both the district and the local municipality improved between 2001 and 2011, with the percentage of the population over 20 years of age with no schooling in the district decreasing from 9.5 1% to 5.4 %.

## 5.9 ECONOMIC CONTEXT

The following economic context is however provided as part of this scoping exercise.

### 5.9.1 Project cost overview

Renewable energy projects, such as the proposed solar facility, require significant capital investment. Funds of equity and debt investors either from foreign or domestic sources are obtained. The cost requirements and potential revenue are discussed in this section, sketching a business case for the development of renewable energy projects within South Africa.

The project costs consist of two parts, capital cost and running cost. The capital cost pertains to all costs incurred for the establishment of a producing facility. The running cost relates to those costs incurred to ensure that the facility operates as it should throughout its expected lifetime.

Solar PV installations can operate for many years with relatively little maintenance or intervention. Therefore after the initial capital outlay required for building the solar power plant, further financial investment is limited. Operating costs are also limited compared to other power generation technologies.

### 5.9.2 Project specific costs

The Sunveld Solar PV detailed costing has not been completed on the date of submitting this scoping report. The project is, however, based on the industry standard cost with capital expenditure that can amount to more or less R20-25M per megawatt installed capacity. The running cost of a solar PV facility is minimal related to the initial capital cost, contributing to the most significant cost of constructing and running a solar PV facility.

### 1.1.1 Revenue streams

The payback of the facility results mainly from electricity sales, either under the current governmental programme, known as the “Renewable Energy Independent Power Producer Procurement Programme” (REIPPPP) or through private power purchase agreements.

The IPP procurement programme portrays fixed ceiling prices for bidders to tender against in a competitive environment. The establishment of these ceiling prices is based on industry standard return on investments.

As part of the IPP procurement programme preferred bidders will enter into a power purchase agreement between the IPP generator and the Single Buyers Office/Department of Energy. National treasury provides surety, while NERSA regulates the IPP licences.

The bidding and tender procedure of the IPP procurement programme requires an approved EIA Environmental Authorisation as a gate keeping criteria, where no project would be considered without the EIA Environmental Authorisation being given. In most cases the same criteria is applicable to a private power purchase agreement.

## 5.10 VISUAL CONTEXT

Mr Stephen Stead of Visual Resource Management Africa (VRMA) undertook a Visual Site Sensitivity Verification of the proposed Sunveld Solar PV (See Appendix E7). The following visual context was determined from this study. A Level 3 Landscape and Visual Impact Assessment will be undertaken and included in the Environmental Impact Reporting phase of this environmental process.

The DFFE Screening tool indicated Very High Landscape Sensitivity to High Ridgelines and Mountains. The specialist found that this risk is limited as, although the site has some regional elevation, there are no high ridgelines are mountain features on the site.

Other risks identified during the site survey were the importance of tourism view corridors associated with the R399 as well as the gravel access road to the Berg River.

### 5.10.1 Policy fit

In terms of regional and local planning fit for planned landscape and visual related themes, the expected visual/ landscape policy fit of the landscape change is rated Low Positive. While there is clear support for renewable energy sources and the promotion as part of a planning effort to enhance the electricity capacity in the West Coast District, alternative energy facilities such as solar and wind farms are also listed as a risk to have spatial implications relating to visual impacts, environmental impacts, etc, given the importance of tourism for the area where there is a strong planning requirements to "promote and enhance the Berg Rivier Municipality as a unique destination for discerning travellers with unrivalled eco-tourism and authentic cultural heritage tourism opportunities".

Given that planning is highlighting the risk to land use change through human intervention, there planned need to address future challenges compromising local landscape and scenic resources through appropriate land use.

As the property is large and, in some areas, visually degraded by alien vegetation, there is also a clear need to ensure that visual resources along the R399 road tourist corridor, and the Berg River are not compromised.

### 5.10.2 Zone of visual influence

The visible extent, or viewshed, is "the outer boundary defining a view catchment area, usually along crests and ridgelines" (Oberholzer, 2005). In order to define the extent of the possible influence of the proposed project, a viewshed analysis was undertaken from the proposed site at a specified height above ground level. There is some regional elevation to the where the viewshed is likely to extend beyond the Foreground/ Mid Ground areas. The specialist recommended that the PV structures are limited to approximately 3m and this has been incorporated into the current Design.

### 5.10.3 Receptors and key observation points

The main Key Observation Points for the site were identified by the visual specialist as:

- The R399 road that is the main access road to the tourist related coastal town of Velddrif.
- Berg River and Berg River gravel access road.

### 5.10.4 Scenic quality

The scenic quality of the proposed development site was rated by the specialist as Medium to High. This is due to the interplay of the natural and agrarian cultivated areas, as well as the Berg River located within the project zone of visual influence. The terrain is predominately flat and gently undulating, but the backdrop of the mountains to the east and the close proximity to the Berg River valley do add value to the site scenic resources.

### 5.10.5 Receptor sensitivity to landscape change

The receptor sensitivity to landscape changes was rated by the specialist as High. This is due to the area being important for tourism, and the R399 road to Velddrif which is considered a tourist view corridor, with the Berg River also an important tourist destination.

## 5.11 SITE SENSITIVITY.

On 20 March 2020 the Minister of Forestry, Fisheries and the Environmental published the general requirements for undertaking site sensitivity verification for environmental themes for activities requiring environmental authorisation (Government Gazette No. 43110). In terms of these requirements, prior to commencing with a specialist assessment, the **current land use** and **environmental sensitivity** of the site under consideration by the screening tool must be confirmed by undertaking a site sensitivity verification by either an EAP or a specialist.

The report uses national datasets to identify site sensitivities and potential specialist studies that may be required for any particular development. Since the datasets are not necessarily groundtruthed, there may be instances where the required specialist study is in actual fact not necessary.

Prior to commencing with a specialist assessment, the **current use of the land** must be verified and the environmental sensitivity of the site under consideration identified by the screening tool must be verified by the undertaking a **site sensitivity verification** (SSV).

According to the Assessment Protocol for specialist involvement, if any part of the proposed development falls within an area of 'high" or "very high" sensitivity and confirmed as such by the specialist or EAP, the requirements prescribed for such sensitivity must be followed.

It must be noted that the properties affected by proposed Sunveld Solar PV were the subject of two previous environmental impact assessment process, each of which culminated in the environmental authorisation for a development similar to what is currently being proposed. These previous studies must be consulted and taken into account by the specialists as part of this Environmental Assessment process.

In terms of legislative requirements The following is required to form part of a site sensitivity verification.

**Table 20:** General requirements for site sensitivity verifications in terms of GN43110.

| SSVr Requirement | Discussion |
|---|---|
| The SSV must be undertaken by an EAP or a specialist | This SSV report (SSVr) has been compiled by the EAP and the Specialists. Please refer to the Specialist SSVr's attached in appendices E1 to E7. |
| A preliminary on-site inspection must be undertaken | A site Inspection was undertaken by the EAP in June 2023. All specialists have undertaken site inspections between June and September 2023. Please refer to the Specialist SSVR's attached in Appendix E1-E7 for dates in which each specialist undertook field work. |
| A desktop analysis must be undertaken, alongside any other applicable/ relevant information. | Consideration has been given to the George GIS Viewer, CapeFarm Mapper spatial layers, and Google Earth. All relevant spatial biodiversity layers were consulted, including:<br>- Garden Route Biodiversity Sector plan.<br>- National Freshwater Ecosystems Priority areas.<br>- National Spatial Biodiversity Assessment.<br>- National Protected Areas Expansion Strategy. |

### 5.11.1 General Site Information

The General site information for the proposed Sunveld Solar PV is discussed in detain in sections 5.1 – 5.7 of this report.

### 5.11.2 Screening Tool Results

According to the Screening Tool Report that was run on **12 May 2023**, the following summary of the Study Site environmental sensitivities were identified in the screening tool.

**Table 21:** Summary of the development footprint environmental sensitivities.

| Theme | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|---|---|---|---|---|
| Agriculture Theme | | X | | |
| Animal Species Theme | | X | | |
| Aquatic Biodiversity Theme | X | | | |
| Archaeological and Cultural Heritage Theme | | | | X |
| Avian Theme | | | | X |
| Civil Aviation (Solar PV) Theme | | | | X |
| Defence Theme | | | X | |
| Landscape (Solar) Theme | X | | | |
| Paleontology Theme | | | | X |
| Plant Species Theme | | | X | |
| RFI Theme | | | | X |
| Terrestrial Biodiversity Theme | X | | | |

The verification of these sensitivities by the participating specialists is included in the sections below. Please also refer to the site sensitivity maps included in section 2.11 of this report.

5.11.2.1 Agriculture

The Screening Tool identifies the agricultural sensitivity theme as “High”, with high and medium sensitivity areas present on the site.

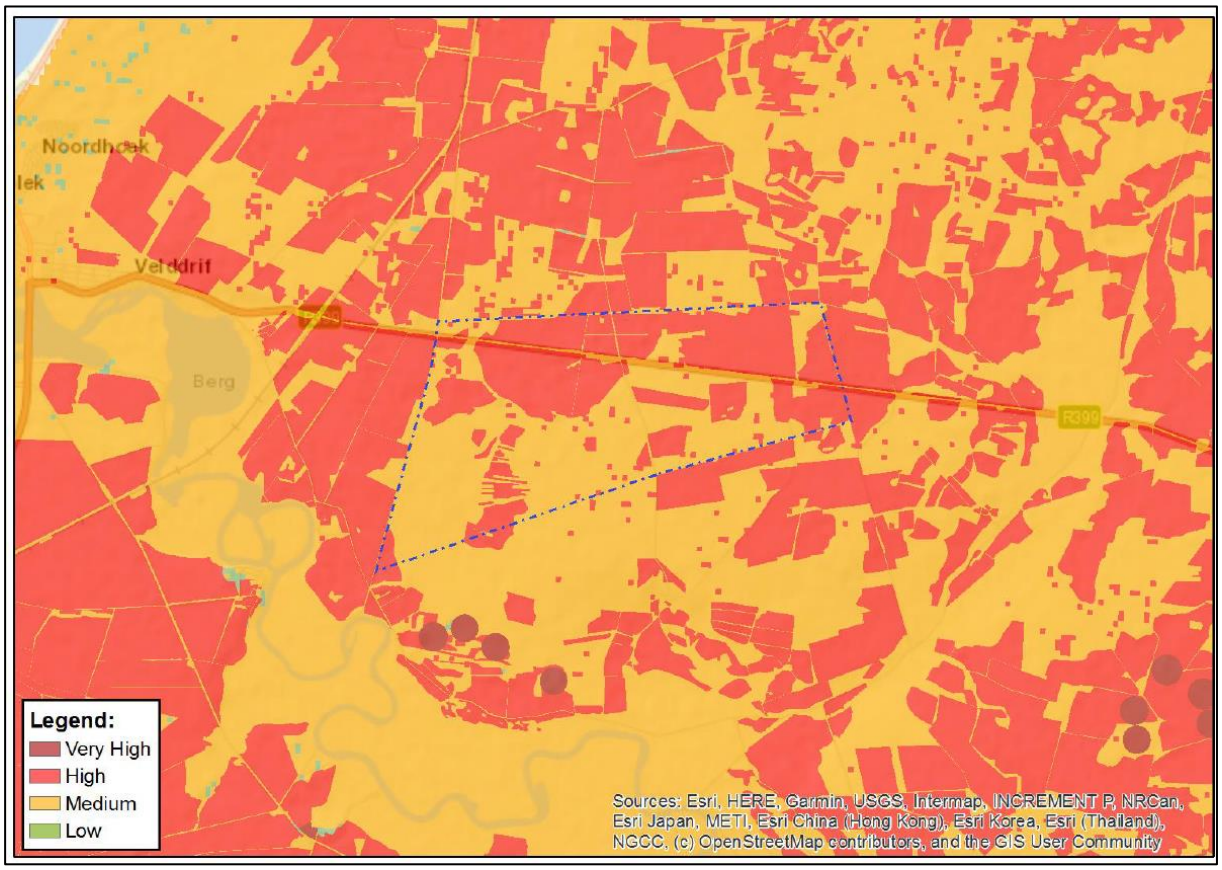


**Figure 41:** Image from Screening Tool identifying agricultural theme sensitivity for the Study Site.

The agricultural Specialist has refuted this and confirmed the entire site to be of medium sensitivity. Please refer to Appendix E6 for a copy of the Agriculture SSVr

.

5.11.2.2 Animal Species

The Screening Tool identifies the Animal Species sensitivity theme as “High”, with high and medium sensitivity areas present on the site.

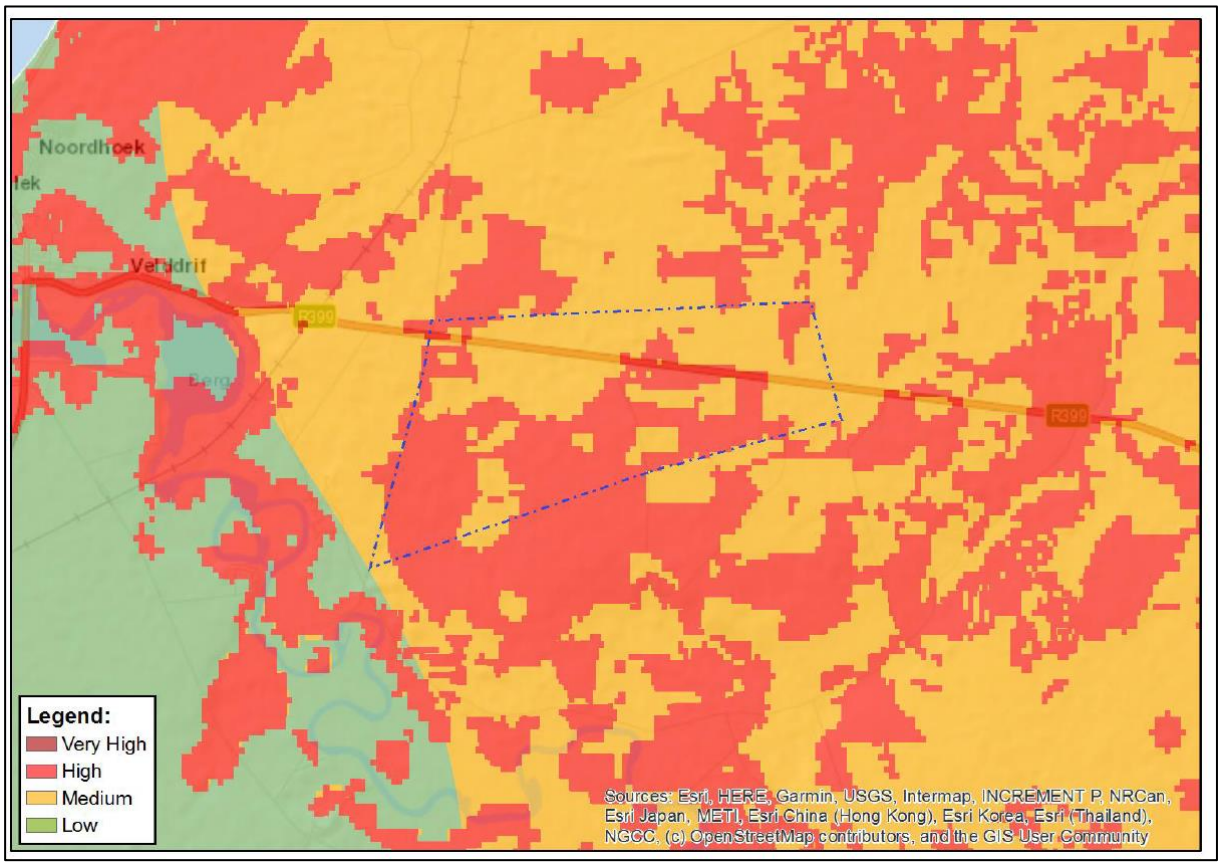


**Figure 42:** Image from Screening Tool identifying Animal Species theme sensitivity for the Study Site.

The Terrestrial Biodiversity Specialist (Appendix E1) has identified Very High, High, Medium and low sensitivities for different portions of the site.

The Invertebrate specialist has identified Medium to high and Medium sensitivities for different portions of the site.

The Avifaunal Specialist has confirmed the high sensitivity for Avifaunal Species and has mapped the specific sensitive habitat in this regard.

5.11.2.3 Aquatic Biodiversity

The Screening Tool identifies the Aquatic Biodiversity sensitivity theme as “Very High”, but with the majority of the site as low sensitivity.

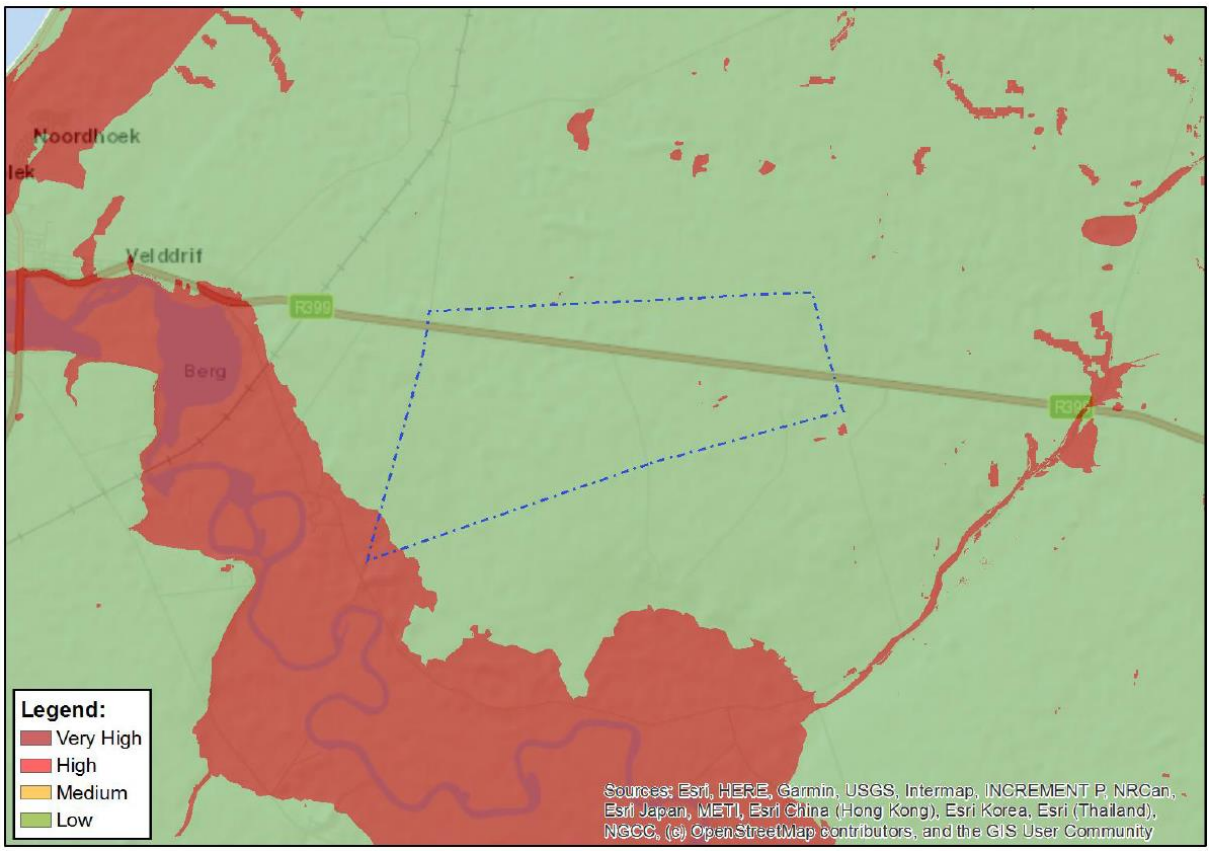


**Figure 43:** Image from Screening Tool identifying Aquatic Biodiversity theme sensitivity for the Study Site.

The Aquatic Biodiversity specialist (Appendix E4) has confirmed the Low sensitivity for the majority of the site and has refuted the Very High Sensitivity of Seasonal Pans and Categorised these as medium sensitivity (Notwithstanding this, these seasonal pans along with required buffers have been avoided by the preferred layout)

5.11.2.4 Archaeology and Cultural Heritage

The Screening Tool identifies the Archaeology and Cultural Heritage sensitivity theme as “Low”.

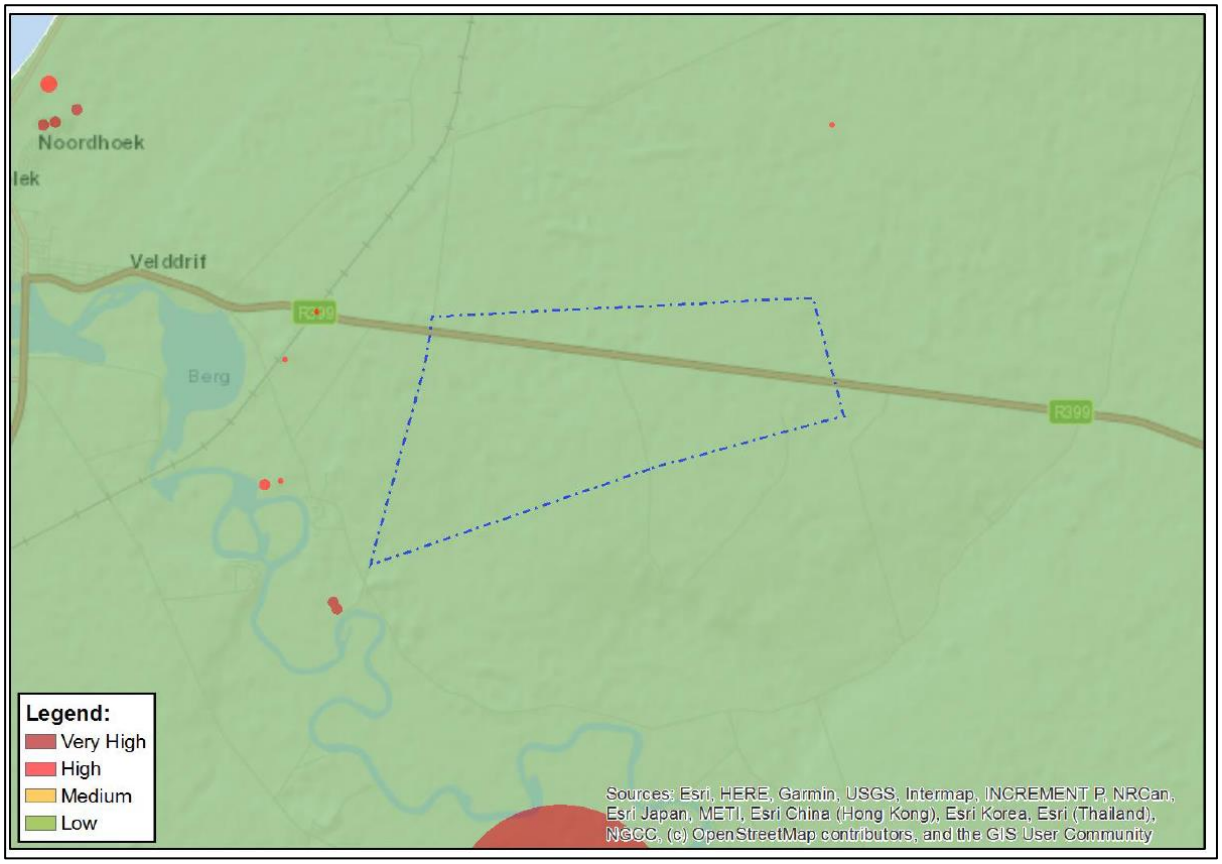


**Figure 44:** Image from Screening Tool identifying Archaeology and Cultural Heritage theme sensitivity for the Study Site.

The Heritage Specialist (Annexure E5) has confirmed the low sensitivity identified in the screening tool.

5.11.2.5 Avifauna

The Screening Tool identifies the Avifauna sensitivity theme as “Low”.

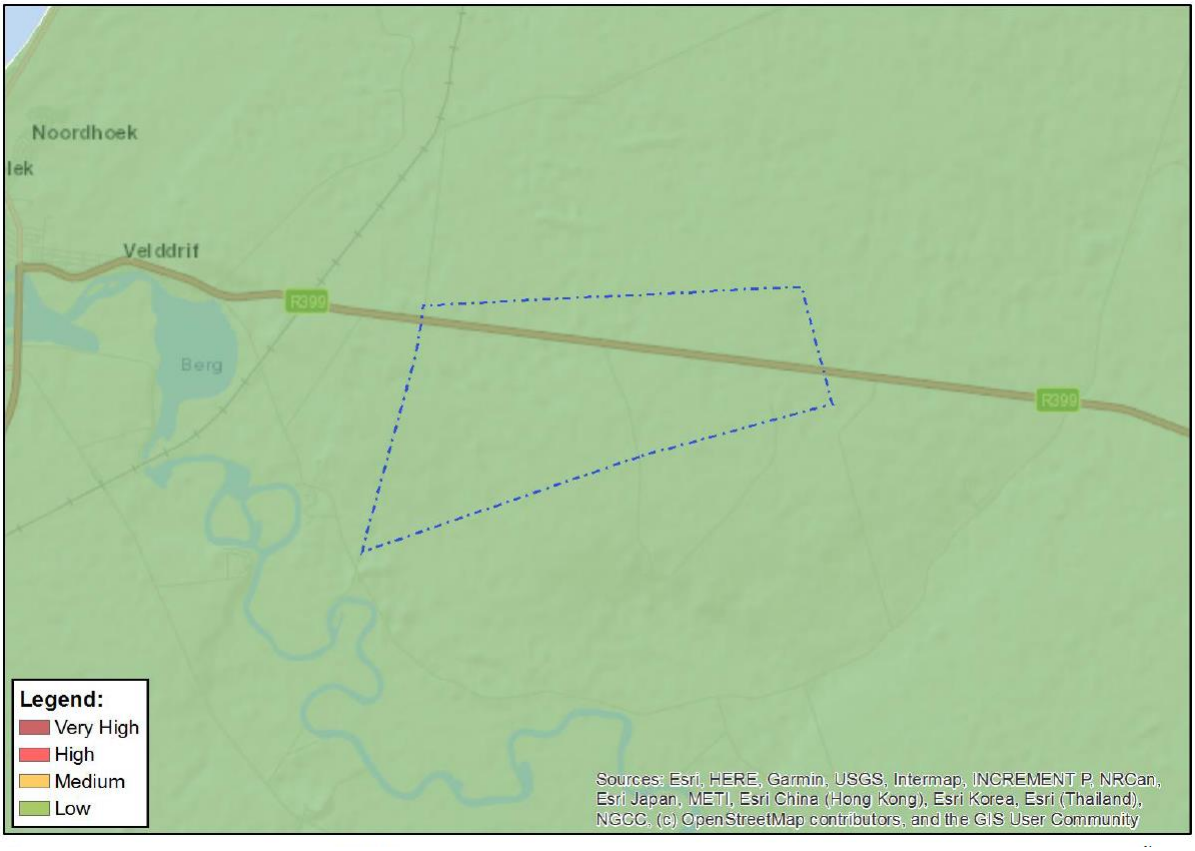


**Figure 45:** Image from Screening Tool identifying Avifauna theme sensitivity for the Study Site.

The Avifauna Specialist has refuted the Low sensitivity identified in the screening tool and has categorised portions of the study site as high, do to the presence of habitat for Species of Conservation concern.

5.11.2.6 Visual and Landscape

The Screening Tool identifies the Visual and landscape sensitivity theme as “Very High”, but with the majority of the site consisting of medium sensitivity.

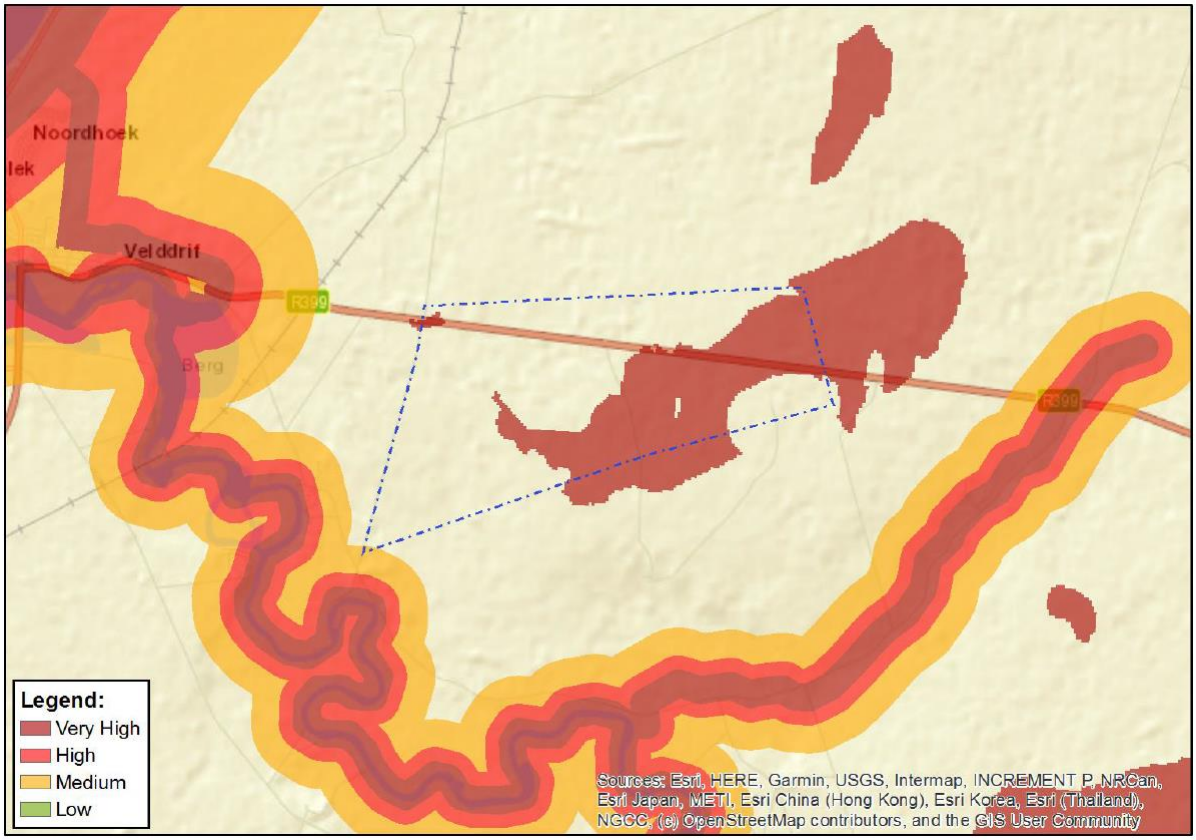


**Figure 46:** Image from Screening Tool identifying Visual and Landscape theme sensitivity for the Study Site.

The visual specialist (appendix E7) refuted the very high sensitivity in the Screening Tool in that the mapped area does not form does not form a prominent ridgeline or mountain top.

The specialist categorised the site as ranging from low – high.

5.11.2.7 Palaeontology

The Screening Tool identifies the Palaeontology sensitivity theme as “Low”.

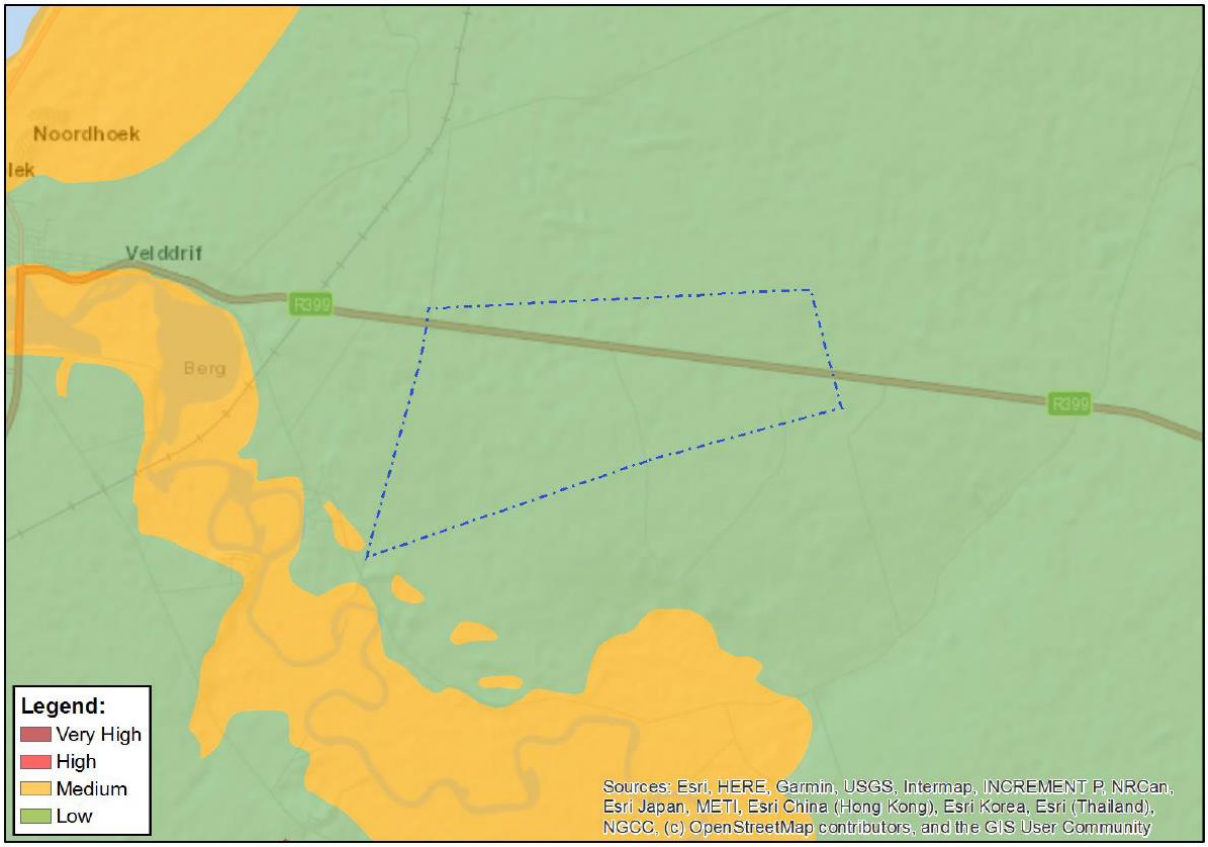


**Figure 47:** Image from Screening Tool identifying Palaeontology theme sensitivity for the Study Site.

The Heritage Specialist (Appendix E5) confirmed the low sensitivity in the screening tool. A palaeontology desktop assessment will still however be undertaken as part of the Environmental Impact Reporting Phase.

5.11.2.8 Plant Species

The Screening Tool identifies the Plant Species sensitivity theme as “Medium”, with low sensitivity areas also present on the site.

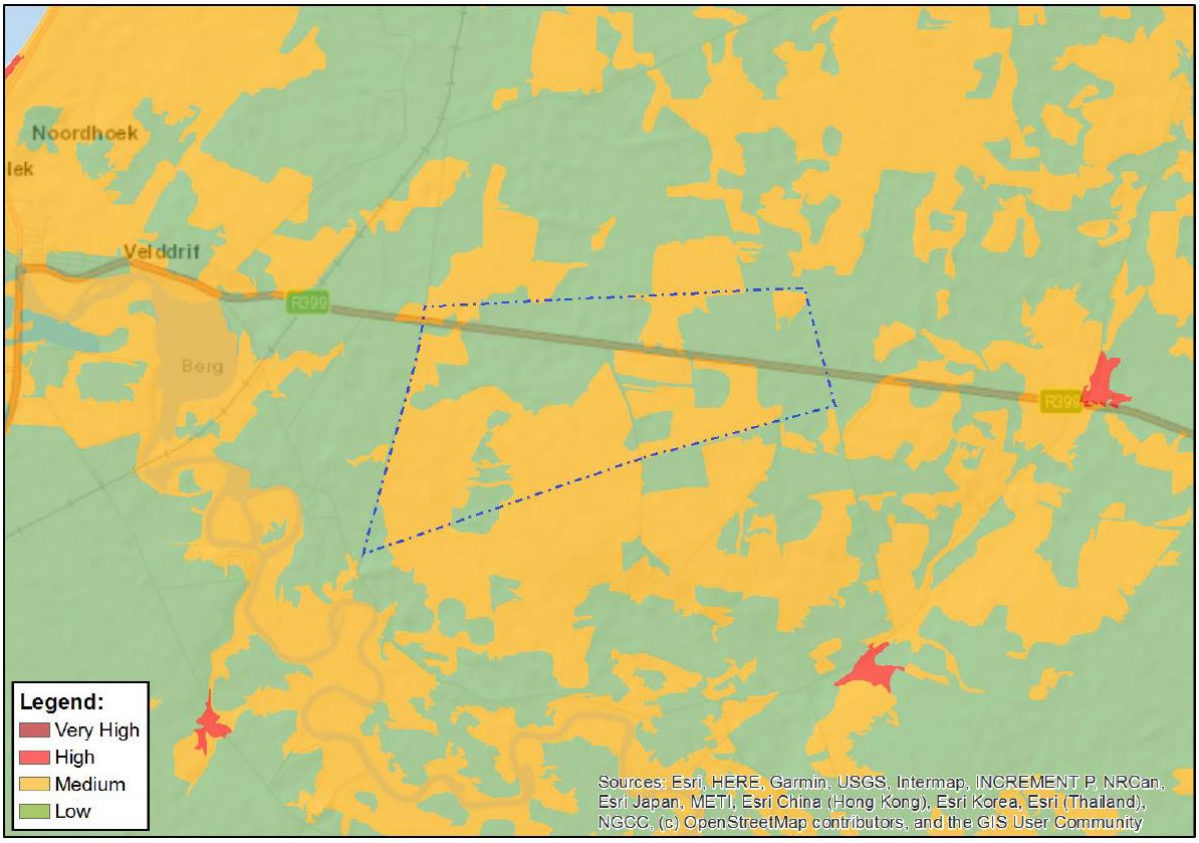


**Figure 48:** Image from Screening Tool identifying Plant Species theme sensitivity for the Study Site.

The Terrestrial Biodiversity Specialist (Appendix E1) has identified Very High, High, Medium and low sensitivities for different portions of the site.

5.11.2.9 Terrestrial Biodiversity

The Screening Tool identifies the Terrestrial Biodiversity sensitivity theme as “Very High”, for the entire site.

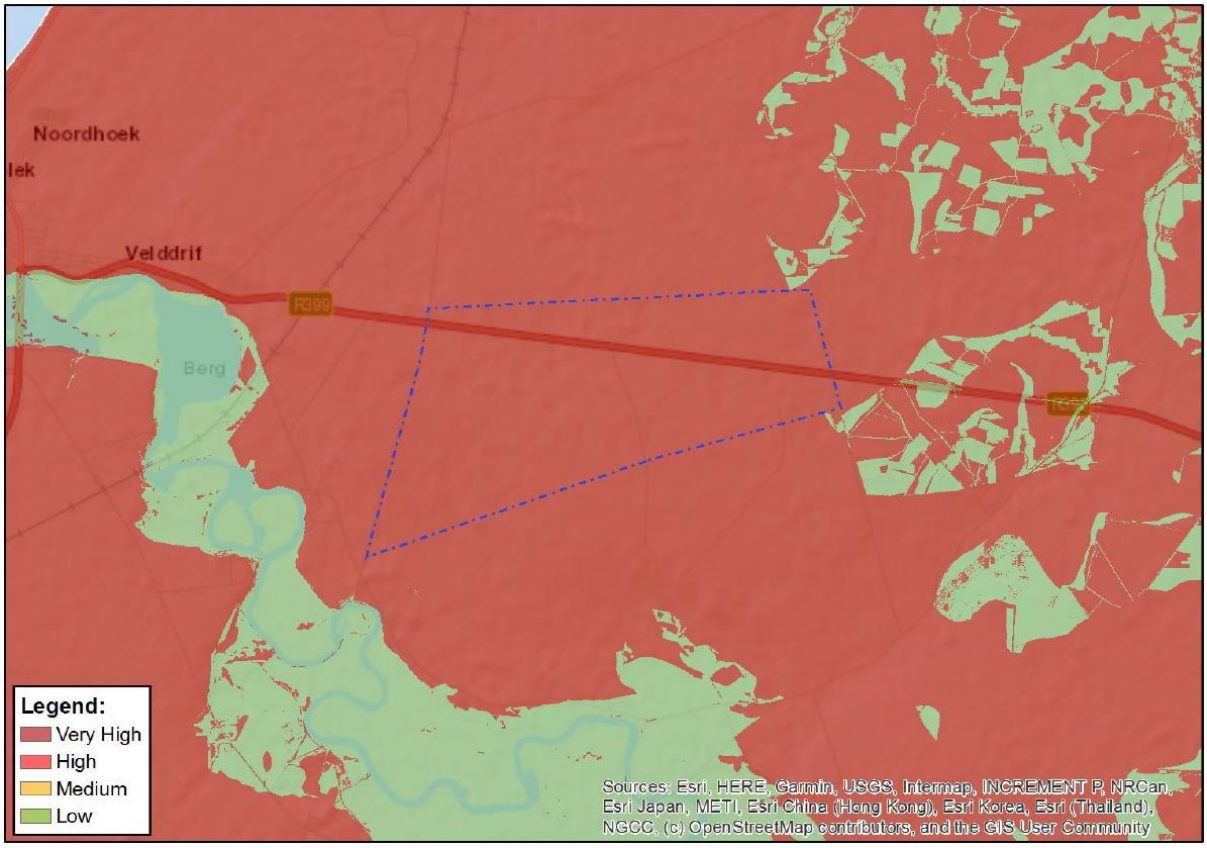


**Figure 49:** Image from Screening Tool identifying Terrestrial Biodiversity theme sensitivity for the Study Site.

The Terrestrial Biodiversity Specialist (Appendix E1) very high sensitivity of the entire site and has identified Very High, High, Medium and low sensitivities for different portions of the site.

## 5.11.3 Specialist Assessments

It is important to note that specialist involvement is needed when the environment could be **significantly affected** by the proposed activity, where that environment is **valued by, or important** to **society** and/or where there is **insufficient information** to determine whether impacts would be significant.

The scope of specialists’ contribution (if required) depends on the **nature of the project**, the environmental context [of the site] and the amount of available information and does not always entail detailed studies or assessment of impacts (*Source: Guideline for the review of specialist input in EIA processes, 2005*).

Based on the SSV above read in conjunction with the Specialist SSVr’s in appendices E1-E7, the following specialist assessments will be undertaken in the next stage of the environmental process:

1. Freshwater Biodiversity Compliance Statement
2. Terrestrial Biodiversity Impact Assessment
3. Plant Species Impact Assessment
4. Animal Species Impact Assessment (including compliance statement for invertebrate species.

5. Avifaunal Impact Assessment
6. Heritage Impact Assessment (including Cultural Heritage, Archaeology and Palaeontology)
7. Landscape and Visual Impact Assessment
8. Agricultural Compliance Statement.
9. Socio-Economic Impact Assessment

# 6. PLAN OF STUDY FOR ENVIRONMENTAL IMPACT ASSESSMENT

Following this scoping process, the next stage of the environmental process is the environmental impact assessment, which will assess the significance of the potential impacts identified in this process and further refine the preferred alternative in response to the assessments.

In compliance with section (i) of Appendix 2 of regulation 982, the following plan of study for undertaking the Environmental Impact Assessment Report is provided. In terms of these regulations the following must be included in this plan of study.

**Table 22**: Legislated content requirements for Plan of Study for Environmental Impact Assessment

| Legislative Content Requirement. | | Report Reference |
|---|---|---|
| i. | a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity; | Please refer to section 2.3 above |
| ii. | a description of the aspects to be assessed as part of the environmental impact assessment process; | Please Refer to section 6.2 below |
| iii. | aspects to be assessed by specialists; | Please Refer to section 6.2 below |
| iv. | a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists; | Please Refer to section 6.4 below |
| v. | a description of the proposed method of assessing duration and significance; | Please Refer to section 6.4 below |
| vi. | an indication of the stages at which the competent authority will be consulted; | Please Refer to section 7 below |
| vii. | particulars of the public participation process that will be conducted during the environmental impact assessment process; | Please Refer to section 7 below |
| viii. | a description of the tasks that will be undertaken as part of the environmental impact assessment process; | Please Refer to section 6 |
| 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. | Please Refer to section 6. |

## 6.1 DESCRIPTION OF THE ALTERNATIVES TO BE CONSIDERED AND ASSESSED

Please refer to section 2.11 above where Alternatives have been considered in this scoping report and where relevant will be assessed in the impact assessment phase of this environmental process.

As mentioned earlier in the report, the intention of environmental process is that layout alternatives will not be comparatively assessed, but rather a single layout (within the selected site) will be selected through additional specialist input and stakeholder engagement (i.e. a risk adverse approach will be followed to determine the best practicable environmental option. The currently preferred alternative, Layout Alternative 3 will be further refined during the Environmental Impact Assessment phase.

In compliance with the regulations, the specialists will as a minimum assess the mitigated preferred layout alternative as well as the No-go alternative. Other Alternatives, such as Access Alternatives and Technology Alternatives will be assessed by the EAP with input from the participating specialists.

## 6.2 ASPECTS TO BE ASSESSED

All potential impacts to on the economic, social and biophysical environments that have been identified in this scoping report will be assessed in the Environmental Impact Assessment phase of this Environmental Process.

Potential impacts of the project have been identified by the EAP and participating specialists. These are included in the table below and the significance thereof will be assessed in the Environmental Impact Report.

It must be noted that this section reflects the impacts as identified during the scoping phase. Additional impacts may be identified by specialists during the Environmental Impact Assessment Phase after all the additional site investigations have been completed.

In this section, the potential impacts and associated risk factors that may be generated by the development are identified.

**Table 23:** Nature of Impacts to be assessed in the Impact Assessment Phase of the Environmental Process.[39]

| Specialist Discipline | Nature of impact to be assessed. | Project phase | Specialist appointed. |
|---|---|---|---|
| **Terrestrial Biodiversity** | Loss and fragmentation of vegetation communities in the vicinity of the project area | Construction, Operation and Decommissioning | The Biodiversity Company. Ms Tarryn Martin and Ms Amber Jackson.<br><br>Dr Jonothan Colville for invertebrates. |
| | Impact on Critical Biodiversity Areas and Ecological Support Areas. | | |
| | Impact on in-tact and Near in tact Saldanha Strandveld. | | |
| | Negative fragmentation effects | | |
| | Movement of faunal species | | |
| | Direct and indirect loss and disturbance of faunal species and community | | |
| | Direct and indirect loss and disturbance of species of conservation concern | | |
| **Aquatic Biodiversity** | Disturbance and possibly loss of aquatic habitats within the wetlands with the associated impact on associated aquatic biota | Construction Phase | Blue Science Environmental.<br><br>Ms Toni Belcher |
| | Demand for water for construction | | |
| | Alien vegetation infestation within the aquatic features due to disturbance | | |

[39] It must be noted that during the Environmental Impact Assessment Phase, additional impacts may be identified by participating specialists and these will need to be assessed.

| Specialist Discipline | Nature of impact to be assessed. | Project phase | Specialist appointed. |
|---|---|---|---|
| | Increased sedimentation and risks of contamination of surface water runoff during construction | | |
| | Ongoing disturbance of aquatic features and associated vegetation along access roads or adjacent to the infrastructure that needs to be maintained; | Operational Phase | |
| | Modified runoff characteristics from hardened surfaces that have the potential to result in flow modification impacts within the wetland areas | | |
| | Possible increase in water consumption and potential for water quality impacts (such as contamination from sewage generated onsite) as a result of the operation of the site | | |
| | increased disturbance of aquatic habitat due to the increased activity on the site. | Decommissioning Phase | |
| | Increased sedimentation | | |
| | risks of contamination of surface water runoff | | |
| **Avifauna** | The loss of habitat and subsequent displacement of bird species. | Construction, Operation and Decommissioning | Mr Albert Froneman in conjunction with Mr Robin Colyn |
| | Impact on Black Harrier foraging and breeding habitat. | | |
| | Direct interaction (collision trauma) | Operation | |
| | Direct interaction (electrocution) | | |
| | Direct interaction (entrapment) | | |
| **Agriculture** | Loss of areas of grazing areas where livestock can be produced | Construction and Operation. | Mr Johan Lanz |
| | Soil compaction | Construction | |
| | Soil erosion | Construction and Operation | |
| | Loss of soil fertility through disturbance of in situ horizon organisation | Construction | |
| | Soil chemical pollution | Construction and Operation | |
| **Heritage** | Direct impact on heritage Resources (including archaeology, Palaeontology and Build environment) identified within the study site. | Construction | Dr Jayson Orton |
| **Visual** | Loss of site landscape character from the removal of vegetation and the construction of the PV structures and associated infrastructure; | Construction | Visual Resource Management Africa, Mr Stephen Stead. |
| | Wind-blown dust due to the removal of large areas of vegetation | | |
| | Possible soil erosion from temporary roads crossing drainage lines | | |
| | Windblown litter from the laydown and construction sites | | |
| | Light spillage making a glow effect that would be clearly noticeable to the surrounding dark sky night landscapes to the north of the proposed site; | Operation | |
| | Massing effect on the landscape from a large-scale modification; | | |
| | On-going soil erosion; | | |
| | On-going windblown dust | | |
| | Movement of vehicles and associated dust | Decommissioning | |

| Specialist Discipline | Nature of impact to be assessed. | Project phase | Specialist appointed. |
|---|---|---|---|
| | Windblown dust from the disturbance of cover vegetation / gravel | | |
| **Social** | Creation of employment and business opportunities, and opportunity for skills development and on-site training. | Construction, Operation and Decommissioning | Tony Barbour Consulting, Mr Tony Barbour. |
| | Impacts associated with the presence of construction workers on local communities. | Construction | |
| | Impacts related to the potential influx of job-seekers | Construction, Operation and Decommissioning | |
| | Increased risks to livestock and farming infrastructure associated with the construction related activities and presence of construction workers on the site. | Construction and Decommissioning | |
| | Increased risk of grass fires associated with construction related activities | Construction | |
| | Nuisance impacts, such as noise, dust, and safety, associated with construction related activities and vehicles. | Construction | |
| | Impact on productive farmland | Operation | |
| **Battery Energy Storage System Risk** | The following potential risks of Lithium-ion or sodium ion batteries will be assessed:<br>1. the proximity to occupied residences;<br>2. the layout to prevent domino effects of fires/explosions between facilities;<br>3. suitable emergency response during all phases of the project; and<br>4. suitable end of life plan to be in place. | Construction, Operation and Decommissioning. | ISHEcon<br><br>Ms Debbie Mitchell. |
| | The following potential risks for Redox flow BESS (assume vanadium but may be alternative chemistry) batteries will be assessed:<br>1. proximity to water courses;<br>2. suitable secondary spill containment for large tanks of electrolyte;<br>3. suitable emergency response during all phases of the project; and<br>4. suitable end of life plan to be in place. | | |
| | The following potential risks for Molten metal BESS will be assessed:<br>1. safety of personnel due to high temperature liquids;<br>2. suitable emergency response during all phases of the project; and<br>3. suitable end of life plan to be in place | | |

In addition to the detailed impact assessments of the specialists listed above, a traffic specialist will be appointed to prepare a Traffic and Transportation Plan. This Traffic and Transportation plan will form part of the EMPr that will be included in Draft Environmental Impact Assessment Report.

As part of the assessments, specialists will need to consider all information at their disposal, which includes all specialist assessments that were previously as part of the previous environmental impact assessment on the affected properties.

## 6.3 SPECIALIST STUDIES REQUIRED IN TERMS OF THE NATIONAL SCREENING TOOL

The table below reflects the specialist studies recommended in the DEA Screening tool and whether they will be included in the Draft EIR.

**Table 24:** Specialist Studies recommended in the DEA Screening Tool.

| Study Recommended in Screening Tool | Discussion |
|---|---|
| Agricultural Impact Assessment | Will be undertaken. In terms of the SSVR for Agriculture, this will be in the form of a Compliance Statement due to the Medium Sensitivity |
| Landscape/Visual Impact Assessment | Will be undertaken |
| Archaeological and Cultural Heritage Impact Assessment | Will be undertaken |
| Palaeontology Impact Assessment | Will be undertaken |
| Terrestrial Biodiversity Impact Assessment | Will be undertaken |
| Aquatic Biodiversity Impact Assessment | Will be undertaken |
| Avian Impact Assessment | Will be undertaken |
| Civil Aviation Assessment | To be determined – The closest airstrip was identified as the Saldanha Airport situated approximately 29 km to the South of the Site.<br>The South Avian Civil Aviation Authority, ATNS and the Saldanha Airport will be given an opportunity to comment on this scoping Process. The applicant will also submit an obstacle application (Part 30-27) to the South African Civil Aviation Authority. |
| Defence Assessment | To be determined – the South African National Defence Force will be provided with an opportunity to comment on this Scoping Process. |
| RFI Assessment | Not undertaken – The Sunveld Solar PV facility is not within the Geographic Advantage Area, as it is situated outside of the Northern Cape. It was furthermore found to be situated more than 336km from the closest SKA station (SKA133).<br><br>The South African SKA Project Office and the South African Radio Astronomy Observatory (SARAO) have been registered as a key stakeholder on this environmental process and have been requested to provide input in terms of the Astronomy Geographic Advantage Act and potential impact to SKA. |
| Geotechnical Assessment | Will be undertaken |
| Socio-Economic Assessment | Will be undertaken |
| Plant Species Assessment | Will be undertaken |
| Animal Species Assessment | Will be undertaken |

## 6.4 ASSESSMENT METHODOLOGY

All possible impacts need to the assessed – the direct, in-direct as well as cumulative impacts. Impact criteria should include the following:

### 6.4.1 Nature of the impact

This is an appraisal of the type of effect the construction, operation and maintenance of a development would have on the affected environment. This description should include what is to be affected and how.

### 6.4.2 Extent of the impact

Describe whether the impact will be: local extending only as far as the development site area; or limited to the site and its immediate surroundings; or will have an impact on the region, or will have an impact on a national scale or across international borders.

### 6.4.3 Duration of the impact

The specialist should indicate whether the lifespan of the impact would be short term (0-5 years), medium term (5-15 years), long terms (16-30 years) or permanent.

### 6.4.4 Intensity

The specialist should establish whether the impact is destructive or benign and should be qualified as low, medium or high. The specialist study must attempt to quantify the magnitude of the impacts and outline the rationale used.

### 6.4.5 Probability of occurrence

The specialist should describe the probability of the impact actually occurring and should be described as improbable (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of any prevention measures).

The impacts should also be assessed in terms of the following aspects:

### 6.4.6 Status of the impact

The specialist should determine whether the impacts are negative, positive or neutral ("cost – benefit" analysis). The impacts are to be assessed in terms of their effect on the project and the environment. For example, an impact that is positive for the proposed development may be negative for the environment. It is important that this distinction is made in the analysis.

### 6.4.7 Cumulative impact

Consideration must be given to the extent of any accumulative impact that may occur due to the proposed development. Such impacts must be evaluated with an assessment of similar developments planned and already in the environment. Such impacts will be either positive or negative, and will be graded as being of negligible, low, medium or high impact. As agreed with DFFE at the pre-application meeting, cumulative impacts will be assessed for all similar facilities within a 30km radius.

### 6.4.8 Degree of confidence in predictions

The specialist should state what degree of confidence (low, medium or high) is there in the predictions based on the available information and level of knowledge and expertise.

Based on a synthesis of the information contained in the above-described procedure, the specialists are required to assess the potential impacts in terms of the following significance criteria:

- **No significance**: The impacts do not influence the proposed development and/or environment in any way.
- **Low significance**: The impacts will have a minor influence on the proposed development and/or environment. These impacts require some attention to modification of the project design where possible, or alternative mitigation.
- **Moderate significance**: The impacts will have a moderate influence on the proposed development and/or environment. The impact can be ameliorated by a modification in the project design or implementation of effective mitigation measures.
- **High significance**: The impacts will have a major influence on the proposed development and/or environment.

## 6.5 CONSULTATION WITH COMPETENT AUTHORITY.

The competent authority has been identified as the National Department of Forestry, Fisheries and the Environment. Engagement with the competent authority will be ongoing throughout the environmental process and will include the following as a minimum:

- Provided with a copy of the Draft Scoping Report for Review and comment ;
- Submission of application form and engagement on the contents of the application form;
- Responding to comments received on the draft scoping report;
- Provided with a copy of Final Scoping report for review and decision making;
- Addressing requirements in the Department's acceptance of the Draft Scoping Report;
- Provided with a copy of the Draft Environmental Impact Report for review;
- Addressing the Departments Draft Environmental Impact Report, and
- Undertaking a site inspection with the competent authority if deemed necessary.

## 6.6 PUBLIC PARTICIPATION TO BE CONDUCTED DURING THE EIA

Please refer to **Section 7** of this report where the ongoing public participation process, including aspects that will take place within the EIA phase, is discussed in detail.

## 6.7 TASKS TO BE UNDERTAKEN IN THE EIA PHASE

In terms of the 2014 EIA regulations, an environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include -

(a) details of -

(i) the EAP who prepared the report; and

(ii) the expertise of the EAP, including a curriculum vitae;

(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; and

(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;

(c) a plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure 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;

(ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;

(d) a description of the scope of the proposed activity, including -

(i) all listed and specified activities triggered and being applied for; and

(ii) a description of the associated structures and infrastructure related to the development;

(e) a description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context;

(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;

(g) a motivation for the preferred development footprint within the approved site;

(h) a full description of the process followed to reach the proposed development footprint within the approved site, including:

(i) details of the development footprint 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 development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;

(v) the impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the 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 determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;

(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) if no alternative development locations for the activity were investigated, the motivation for not considering such; and

(x) a concluding statement indicating the preferred alternative development location within the approved site;

(i) a full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred location through the life of the activity, including -

(i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and

(ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;

(j) an assessment of each identified potentially significant impact and risk, including -

(i) cumulative impacts;

(ii) the nature, significance and consequences of the impact and risk;

(iii) the extent and duration of the impact and risk;

(iv) the probability of the impact and risk occurring;

(v) the degree to which the impact and risk can be reversed;

(vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and

(vii) the degree to which the impact and risk can be mitigated;

(k) where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report;

(l) an environmental impact statement which contains -

(i) a summary of the key findings of the environmental impact assessment:

(ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and

(iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;

(m) based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation;

(n) the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment;

(o) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation

(p) a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;

(q) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;

(r) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded and the post construction monitoring requirements finalised;

(s) an undertaking under oath or affirmation by the EAP in relation to:

(i) the correctness of the information provided in the reports;

(ii) the inclusion of comments and inputs from stakeholders and I&APs;

(iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and

(iv) 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;

The Environmental Impact Report for the proposed Sunveld Solar PV facility will consider and comply with these legislated requirements.

## 6.8 MEASURES TO AVOID, REVERSE, MITIGATE OR MANAGE IDENTIFIED IMPACTS

As shown in this scoping report, the proposed Sunveld Solar PV will follow a risk adverse approach, whereby primary specialist inputs have and will continue to be utilised to ensure that the project is developed in such a way as to avoid impacts as a priority, thus reducing the need for further mitigation and management.

The EAP and participating specialists, as part of the impact assessment phase, will provide Environmental Impact Management Actions and Outcomes to ensure that the potential impacts are further reduced and managed.

An environmental management programme will be developed to ensure management and monitoring of all direct, indirect and residual impacts.

The following additional management plans will form part of the overall Environmental Management Programme:

- Stormwater Management Plan;
- Washwater Management Plan;
- Traffic and Transportation Management Plan;
- Alien Vegetation Management Plan;
- Habitat Restoration Plan;
- Plant Rescue and Protection Plan;
- Open Space Management Plan; and
- Avifaunal Management Plan.
- BESS Risk Management Plan

### 6.9 CONTENTS OF THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT

The Draft Environmental Impact Assessment Report will as a minimum include the following sections:

- Non Technical Summary;
- Introduction and description of study site;
- Methodology;
- Results;
- Presentation of mitigated preferred layout;
- Assessment of Impacts (Direct, In-direct & Cumulative, including mitigation measures to reduce negative impacts and measures to enhance positive impacts and the completion of impact tables);
- Assessment of project alternatives;
- Discussion and Recommendation for Preferred Alternative;
- Specialist recommendation for Pre-Construction, Construction and Operational Phases);
- Conclusion and;
- Environmental Management Programme.

# 7. PUBLIC PARTICIPATION PROCESS

Section 41 in Chapter 6 of regulation 982 details the public participation process that has to take place as part of an environmental process. The table below provides a quick reference to show how this environmental process has or intends to comply with these legislated requirements relating to public participation.

Please refer to **Appendix F**, where all evidence of public participation is included.

**Table 25:** Public participation requirements in terms of S41 of R982

| Regulated Requirement | Description |
|---|---|
| (1) If the proponent is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorisation in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake such activity on that land.<br>(2) Sub regulation (1) does not apply in respect of-.<br>(a) linear activities; | Proof of landowner consent for Sunveld Solar PV is attached in **Annexure G2.**<br>. |
| The person conducting a public participation process must take into account any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of an application or proposed application which is subjected to public participation by - | |
| (a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of -<br>(i) the site where the activity to which the application or proposed application relates is or is to be undertaken; and<br>(ii) any alternative site; | A site notice was placed at three positions along the R399.<br>Photographic evidence and the location of these notices is attached in **Annexure F3**. |
| (b) giving written notice, in any of the manners provided for in section 47D of the Act, to - | |
| (i) the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken; | There are no occupiers on the study site. The landowners will be requested to notify tenants of other occupiers that may reside elsewhere on the property/ |
| (ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken; | Owners of adjacent properties have been notified of this environmental process. Such owners have been requested to inform the occupiers of the land of this environmental process. Please refer to **Annexure F4** for copies of these notifications |
| (iii) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area; | The ward councillor has been notified of this environmental process.<br>Please refer to **Annexure F4** for copies of these notifications |
| (iv) the municipality which has jurisdiction in the area; | The Berg River municipality (Planning and Technical Services) as well as the West Coast District Municipality have been notified of this environmental process.<br>Please refer to **Annexure F4** for copies of these notifications. |
| (v) any organ of state having jurisdiction in respect of any aspect of the activity; and | Please refer to section **Annexure F1** showing the list of organs of state that were notified as part of this environmental process.<br>Please refer to **Annexure F4** for copies of these notifications. |
| (vi) any other party as required by the competent authority; | The DFFE has been given an opportunity to comment on this Draft Scoping Report, any other parties identified will be given an opportunity to comment. |
| (c) placing an advertisement in -<br>(i) one local newspaper; or | An advert calling for registration of I&APs and notifying of the availability of the Draft Scoping Report was placed in Die Weslander local newspaper on 14 September 2023. |

| Regulated Requirement | Description |
|---|---|
| (ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations; | Please refer to **Annexure F3** for a copy of this advertisement.<br>There is currently no official Gazette that has been published specifically for the purpose of providing public notice of applications |
| (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in paragraph (c)(ii);and | Adverts were not placed in provincial or national newspapers, as the potential impacts will not extend beyond the borders of the municipal area. |
| (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to -<br>(i) illiteracy;<br>(ii) disability; or<br>(iii) any other disadvantage. | Notifications have included provision for alternative engagement in the event of illiteracy, disability or any other disadvantage. In such instances, Cape EAPrac will engage with such individuals in such a manner as agreed on with the competent authority. |
| (3) A notice, notice board or advertisement referred to in sub regulation (2) must -<br>(a) give details of the application or proposed application which is subjected to public participation; and<br>(b) state -<br>(i) whether basic assessment or S&EIR procedures are being applied to the application;<br>(ii) the nature and location of the activity to which the application relates;<br>(iii) where further information on the application or proposed application can be obtained; and<br>(iv) the manner in which and the person to whom representations in respect of the application or proposed application may be made. | Please refer to **Annexure F3**. |
| (4) A notice board referred to in sub regulation (2) must -<br>(a) be of a size at least 60cm by 42cm; and<br>(b) display the required information in lettering and in a format as may be determined by the competent authority. | Please refer to **Annexure F3**. |
| (5) Where public participation is conducted in terms of this regulation for an application or proposed application, sub regulation (2)(a), (b), (c) and (d) need not be complied with again during the additional public participation process contemplated in regulations 19(1)(b) or 23(1)(b) or the public participation process contemplated in regulation 21(2)(d), on condition that -<br>(a) such process has been preceded by a public participation process which included compliance with sub regulation (2)(a), (b), (c) and (d); and<br>(b) written notice is given to registered interested and affected parties regarding where the - | This will be complied with if final reports are produced later on in the environmental process. |

| Regulated Requirement | Description |
|---|---|
| (i) revised basic assessment report or, EMPr or closure plan, as contemplated in regulation 19(1)(b);<br>(ii) revised environmental impact report or EMPr as contemplated in regulation 23(1)(b); or<br>(iii) environmental impact report and EMPr as contemplated in regulation 21(2)(d);<br>may be obtained, the manner in which and the person to whom representations on these reports or plans may be made and the date on which such representations are due. | |
| (6) When complying with this regulation, the person conducting the public participation process must ensure that -<br>(a) information containing all relevant facts in respect of the application or proposed application is made available to potential interested and affected parties; and<br>(b) participation by potential or registered interested and affected parties is facilitated in such a manner that all potential or registered interested and affected parties are provided with a reasonable opportunity to comment on the application or proposed application.<br>(7) Where an environmental authorisation is required in terms of these Regulations and an authorisation, permit or licence is required in terms of a specific environmental management Act, the public participation process contemplated in this Chapter may be combined with any public participation processes prescribed in terms of a specific environmental management Act, on condition that all relevant authorities agree to such combination of processes. | All reports that are submitted to the competent authority will be subject to a public participation process. These include:<br>- Draft Scoping Report<br>- Draft Environmental Impact Report<br>- Draft EMPr<br>- All specialist reports that form part of this environmental process. |

## 7.1 REGISTRATION OF KEY STAKEHOLDERS

A number of key stakeholders were automatically registered and were given an opportunity to comment on the Draft Scoping Report Copies and proof of these notifications are included in **Annexure F4**. A list of key stakeholders registered for this process included in the table below.

**Table 26:** Key Stakeholders automatically registered as part of the Environmental Process

| Stakeholders Registered | | |
|---|---|---|
| Neighbouring property owners | Department of Environmental Affairs and Development Planning (Western Cape) | Department of Water and Sanitation |
| Western Cape Department of Transport and Public Works | Berg River Municipality | Department of Science and Technology |
| Berg River Municipality: Ward Councillors | South African National Roads Agency Limited | The Council for Scientific and Industrial Research |
| South African Heritage Resources Agency | Heritage Western Cape | The South African Square Kilometre Array |
| Proto Catchment Management Agency | Department of Health | The South African Civil Aviation Authority |
| Department of Forestry, Fisheries and the Environment: Biodiversity Conservation Directorate | Department of Minerals and Energy | Affected Landowner |
| Provincial Department of Agriculture | Eskom | Department of Communications |
| Endangered Wildlife Trust. | Department of Mineral Resources | SENTECH |

| Stakeholders Registered | | |
|---|---|---|
| Cape Nature | Birdlife South Africa. | South African National Defence Force. |
| Central Karoo District Municipality | SANParks – West Coast National Park | |

## 7.2 AVAILABILITY OF DRAFT SCOPING REPORT.

This Draft Scoping report is available to all automatically registered and potential Interested and Affected Parties for a 30 day-comment period extending from **15 September 2023 – 16 October 2023.**

Copies of the report were available at the following locations:

- Cape EAPrac Website: www.cape-eaprac.co.za.
- Direct download link.

All notifications (including the site notice and advert) have made provisions for potential I&AP's to contact Cape EAPrac, should they not have access to the digital platforms provided. In such instances, Cape EAPrac will arrange other suitable mechanisms for them to be able to access the relevant information.

A copy of the notifications regarding the availability of the Draft Scoping Report are attached in Appendix F4 and the Newspaper Article advertising the availability of the Draft Scoping Report is attached in Appendix F3.

## 7.3 COMMENTS AND RESPONSES ON DRAFT SCOPING REPORT

All comments received on this Draft scoping report will be considered, responded to and included in the final scoping report that will be submitted to the DFFE for consideration.

## 7.4 REMAINDER OF THE ENVIRONMENTAL ASSESSMENT PROCESS

The following process is to be followed for the remainder of the environmental process:

- This Draft Scoping Report is made available for public review and comment for a period of 30 days. Comments received on this document will be responded to and included in the Final Scoping Report which will be submitted to DFFE for decision making.
- All comments received will be considered and addressed and a Final Scoping Report will be submitted to the competent authority for consideration.
- Once the DFFE accepts the Scoping Report and Plan of Study for Environmental Impact Reporting, the relevant specialists will undertake and complete their respective impact assessments;
- Discussions will be held with the various specialists and project team members in order to determine how best the development concept should be amended / refined to avoid significant impacts;
- The EIR will be made available for public review and comment period of 30-days;
- All comments received will be responded to, addressed and the proposal adapter where necessary and the Final EIR will be submitted to the DFFE for consideration and decision-making;
- The DFFE's decision (Environmental Authorisation) on the FEIR will be communicated with all registered I&APs.

# 8. CONCLUSION AND RECOMMENDATIONS

This scoping exercise is currently being undertaken to present concept proposals to the public and potential Interested & Affected Parties and to identify environmental issues and concerns raised as a result of the proposed development alternatives to date.

This will allow Interested & Affected Parties (I&APs), authorities, the project team, as well as specialists to provide input and raise issues and concerns, based on baseline / scoping studies undertaken.

Sunveld Solar PV has been analysed from Ecological, Agricultural, Heritage, Avifaunal, Social and Visual perspectives, and site constraints and potential impacts identified.

This Draft Scoping report summarises the process to date, reports on the findings of relevant baseline studies and outlines the requirements for the remainder of the environmental process.

Cape EAPrac is of the opinion that the information contained in this Draft Scoping Report and the documentation attached hereto is sufficient to allow the general public and key stakeholders (including the competent authority) to apply their minds to the potential negative and/or positive impacts associated with the development, in respect of the activities applied for.

The outcome of this scoping report , has not identified any fatal flaws associated with the development of the proposed Sunveld Solar PV Facility.

Subject to the outcome of the public participation process, it is Cape EAPrac's reasoned opinion that the project should proceed to the Environmental Impact Assessment phase of the environmental process as outlined in section 7 of this report.

All stakeholders are requested to review this Scoping Report and the associated appendices, and provide comment, or raise issues of concern, directly to Cape EAPrac within the specified 30-day comment period.

# 9. ABBREVIATIONS

| | |
|---|---|
| AIA | Archaeological Impact Assessment |
| BGIS LUDS | Biodiversity Geographic Information System Land Use Decision Support |
| CBA | Critical Biodiversity Area |
| CDSM | Chief Directorate Surveys and Mapping |
| CEMPr | Construction Environmental Management Programme |
| DEA | Department of Environmental Affairs |
| DEA&NC | Department of Environmental Affairs and Nature Conservation |
| DME | Department of Minerals and Energy |
| DSR | Draft Scoping Report |
| EAP | Environmental Impact Practitioner |
| EHS | Environmental, Health & Safety |
| EIA | Environmental Impact Assessment |
| EIR | Environmental Impact Report |
| EMPr | Environmental Management Programme |
| ESA | Ecological Support Area |
| GPS | Global Positioning System |
| GWh | Giga Watt hour |
| HIA | Heritage Impact Assessment |
| I&APs | Interested and Affected Parties |
| IDP | Integrated Development Plan |
| IFC | International Finance Corporation |
| IPP | Independent Power Producer |
| kV | Kilo Volt |
| LUDS | Land Use Decision Support |
| LUPO | Land Use Planning Ordinance |
| MW | Mega Watt |

| | |
|---|---|
| NEMA | National Environmental Management Act |
| NEMBA | National Environmental Management: Biodiversity Act |
| NERSA | National Energy Regulator of South Africa |
| NHRA | National Heritage Resources Act |
| NPAES | National Protected Area Expansion Strategy |
| NSBA | National Spatial Biodiversity Assessment |
| NWA | National Water Act |
| PM | Post Meridiem; “Afternoon” |
| PSDF | Provincial Spatial Development Framework |
| REIPPPP | Renewable Energy Independent Power Producer Procurement Programme |
| S.A. | South Africa |
| SACAA / CAA | South African Civil Aviation Authority |
| SAHRA | South African National Heritage Resources Agency |
| SANBI | South Africa National Biodiversity Institute |
| SANS | South Africa National Standards |
| SDF | Spatial Development Framework |
| TOPS | Threatened and Protected Species |

# 10. REFERENCES

[40]**DEA** (2010). National Climate Change Response Green Paper 2010.

**DEA** (January 2008). *National Response to South Africa's Electricity Shortage.* Interventions to address electricity shortages.

**DEA&DP** (2003). Waste Minimisation *Guideline for Environmental Impact Assessment reviews.* NEMA EIA Regulations Guideline & Information Series, Department Environmental Affairs & Development Planning.

**DEA&DP** (2005). *Guideline for the review of specialist input in the EIA process*. NEMA EIA Regulations Guideline & Information Document Series, Department of Environmental Affairs & Development Planning.

**DEA&DP** (2005). *Guideline for involving biodiversity specialists in the EIA process*. NEMA EIA Regulations Guideline & Information Document Series, Department of Environmental Affairs & Development Planning.

**DEA&DP** (2005). *Guideline for environmental management plans*. NEMA EIA Regulations Guideline & Information Document Series, Department of Environmental Affairs & Development Planning.

**DEA&DP** (2005). *Provincial urban edge guideline*. Department Environmental Affairs & Development Planning.

**DEA&DP** (2006). *Guideline on the Interpretation of the Listed Activities.* NEMA EIA Regulations Guidelines & Information Document Series, Department of Environmental Affairs & Development Planning.

**DEA&DP** (2007). *Guide on Alternatives,* NEMA EIA Regulations Guidelines & Information Document Series, Department of Environmental Affairs & Development Planning.

**DEA&DP** (2007). *Guideline on Appeals,* NEMA EIA Regulations Guidelines & Information Document Series, Department of Environmental Affairs & Development Planning.

**DEA&DP** (2007). *Guideline on Exemption Applications.* NEMA EIA Regulations Guidelines & Information Document Series, Department of Environmental Affairs & Development Planning.

**DEA&DP** (2007). *Guideline on Public Participation*. NEMA EIA Regulations Guidelines & Information Document Series, Department of Environmental Affairs & Development Planning.

**DEA&DP** (2009). *Guideline on Need & Desirability,* NEMA EIA Regulations Guideline and Information Document Series, Department Environmental Affairs & Development Planning.

**DEA&DP** (2009). *Guideline on Alternatives*, NEMA EIA Regulations Guideline and Information Document Series, Department Environmental Affairs & Development Planning.

**DEA&DP** (2009). *Guideline on Transitional Arrangements,* NEMA EIA Regulations Guideline and Information Document Series, Department Environmental Affairs & Development Planning.

**DEA&DP** (2009). *Guideline on Exemption Applications*. NEMA EIA Regulations Guideline and Information Document Series, Department Environmental Affairs & Development Planning.

**DEA&DP** (2009). *Guideline on Appeals*. NEMA EIA Regulations Guideline and Information Document Series, Department Environmental Affairs & Development Planning.

[40] This reference list excludes specialist studies that form part of this environmental process, and which are contained in Annexure E1 – E12

**DEA&DP** (2009). *Guideline on Public Participation*. NEMA EIA Regulations Guideline and Information Document Series, Department Environmental Affairs & Development Planning.

**DEA&DP.** (May 2006). *Strategic Initiative to Introduce Commercial Land Based Wind Energy Development to the Western Cape*: Specialist Study: Executive Summary - CNdV Africa prepared for Provincial Government of the Western Cape.

**Department of Mineral & Energy** (1998). White Paper on Energy Policy of the Republic of South Africa**.**

**Department of Mineral & Energy** (2003). *The White Paper on Renewable Energy***.**

**DEAT** (2002). Integrated Environmental Management Information Series 3: *Stakeholder Engagement*. Department of Environmental Affairs and Tourism, Pretoria.

**DEAT** (2004). *Criteria for determining alternatives in EIAs*, Integrated Environmental Management, Information Series 11, Department of Environmental Affairs & Tourism, Pretoria.

**DEAT** (2004). *Environmental Management Plans*, Integrated Environmental management, Information Series 12, Department Environmental Affairs & Tourism.

**DEAT** (2005). *Assessment of Impacts and Alternatives*, Integrated Environmental Management Guideline Series, Department of Environmental Affairs & Tourism, Pretoria.

**DEAT** (2005). Guideline 4: *Public Participation*, in terms of the EIA Regulations 2005, Integrated Environmental Management Guideline Series, Department of Environmental Affairs and Tourism, Pretoria.

**DEAT** (2006). *EIA Regulations* in terms of the National Environmental Management Act (Act No 107 of 1998) (Government Notice No R 385, R 386 and R 387 in Government Gazette No 28753 of 21 April 2006).

**DWA** (2001). *Generic public participation guideline*. Department of Water Affairs and Forestry.

**Hsai-Yang, F** (Ed)(2006). *Environmental Geotechnology Dictionary* (online version). University of North Caroline, Charlotte, USA.

Integrated Resource Plan for Electricity (Oct. 2010). Revision 2, Version8.

**International Finance Corporation – World Bank Group.** (April 2007). Environmental, Health and Safety Guidelines for Electric Power Transmission and Distribution.

**International Finance Corporation – World Bank Group.** (April 2007). *Environmental, Health and Safety Guidelines for Wind Energy.*

**International Finance Corporation – World Bank Group.** (April 2007). *General Environmental, Health and Safety Guidelines.*

**Keatimilwe K & Ashton PJ** 2005. *Guideline for the review of specialist input in EIA processes.* Department Environmental Affairs & Development Planning.

**Lochner P** (2005). *Guideline for Environmental Management Plans*. Department Environmental Affairs & Development Planning.

**Lower Orange River Trans frontier Conservation Area Planning:** Background Information Document (August 2007). Retrieved on 29 March 2012 from:

www.dwaf.gov.za/Documents/Other/RMP/LOR/LORRMPBIDAug07.pdf

**Mucina, L. & Rutherford, M.C**. (eds) 2006. *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19.* South African National Biodiversity Institute, Pretoria.

**Münster, F.** (2005). *Guidelines for Determining the Scope of Specialist Involvement in EIA Processes: Edition 1.* CSIR Report No ENV-S-C 2005 053 A. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning, Cape Town.

**Oberholzer B** (2005). *Guideline for involving visual & aesthetic specialists*. Department Environmental Affairs & Development Planning.

**National Energy Regulator of South Africa (NERSA)**(Feb.2010). Rules on selection criteria for renewable energy projects under the REFIT Programme.

**National Protected Area Expansion Strategy for S.A. 2008:** Priorities for expanding the protected area network for ecological sustainability and climate change adaptation. Government of South Africa, Pretoria, 2010. ISBN 978-1-919976-55-6.

**Northern Cape Business online.** Retrieved from: http://www.northerncapebusiness.co.za on 27 March 2012.

**Northern Cape Business online.** *Solar Power.* Retrieved from: http://www.northerncapebusiness.co.za/special_features/941417.htm on 27 March 2012.

**Saayman, I.** (2005). *Guideline for Involving Hydrogeologists in EIA Processes: Edition 1.* CSIR Report No ENV-S-C 2005 053 D. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning, Cape Town.

**SANBI Biodiversity GIS** (2007). South African National Biodiversity Institute, Cape Town, South Africa.

**Winter S & Beaumann N** (2005). *Guideline for involving heritage specialists in EIA processes.* Department Environmental Affairs & Development Planning.