



BASIC ASSESSMENT REPORT

**THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND
THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.**

NOVEMBER 2019

(For official use only)	
Pre-application Reference Number (if applicable):	
EIA Application Reference Number:	
NEAS Reference Number:	
Exemption Reference Number (if applicable):	
Date BAR received by Department:	
Date BAR received by Directorate:	
Date BAR received by Case Officer:	

GENERAL PROJECT DESCRIPTION

(This must Include an overview of the project including the Farm name/Portion/Erf number)

**THE PROPOSED DARLING SOLAR PV DEVELOPMENT, PORTION OF ERF 551,
DARLING, WESTERN CAPE**

DEADP REF: (Ref: 16/3/3/1/F5/5/2016/24).

EXECUTIVE SUMMARY

Introduction

Consideration is being given to the development of a solar PV facility on Portion of Erf 551, Darling.

The applicant, Swartland Municipality, will undertake the activity should it be approved. EnviroAfrica CC has been appointed as the independent Environmental Assessment Practitioner (EAP) responsible for undertaking the relevant EIA and the Public Participation Process required in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA).

A Notification of Intent was submitted to the Department of Environmental Affairs and Development Planning (DEADP) on 07 November 2023, and comment received on 06 December 2023 (Ref: 16/3/3/6/7/1/F5/5/2230/23).

A NEMA Application Form was submitted to the Department of Environmental Affairs and Development Planning (DEADP) on 25 March 2024, and an Acknowledgement of Receipt received on 05 April 2024 (Ref: 16/3/3/1/F5/5/2016/24).

This Draft Basic Assessment Report (BAR) for comment, which will be submitted to the Department of Environmental Affairs and Development Planning (DEADP) for consideration, forms part of the NEMA Application process. The purpose of this Draft BAR for comment is to describe the proposed project, the process followed to date, to present alternatives and to identify the potential impacts of the proposed development on the receiving environment, as well as provide recommendations and mitigation measures as suggested by the specialist.

Project Description

The proposed development includes the construction of a solar PV facility on Portion of Erf 551, Darling. The site is located on either side of the DR1156 (Burgerspan/ Kraalbosdam road), on the north-eastern side of the R315.

The facility will comprise Solar PV generation, lithium battery storage and electrical reticulation equipment on approximately 54ha. The proposed PV Plant will generate a projected power peak (electricity) of approximately 19.9 MWp.

The modules will be mounted on a table array anchored to the ground utilising rammed or planted steel support posts. A concrete foot piece secured to a steel pen driven into the ground will be used where ramming does not prove feasible. The maximum height of the solar array tables in operation would be approximately 5m and would allow sufficient ground clearance for the free flow of surface water underneath the panels.

The facility and associated infrastructure will be accessed via existing access road. A 6m management track will surround each block of photovoltaic arrays. These single-track management roads will be used as access roads to service and maintain structures and to serve as fire breaks. On full commissioning of the facility, any access points to the site which are not required during operational phase will be closed.

Legal Requirements

The National Environmental Management Act (Act 107 of 1998) (NEMA), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment, and which require authorisation from the relevant authorities based on the findings of an environmental assessment. NEMA is a national act, which is enforced by the Department of Environmental Affairs (DEA). These powers are delegated in the Western Cape to the Department of Environmental Affairs and Development Planning (DEA&DP).

On the 04 December 2014 the Minister of Water and Environmental Affairs promulgated regulations in terms of Chapter 5 of the NEMA, namely the EIA Regulations 2014. These were amended on 07 April 2017 (GN No. 326, No. 327 (Listing Notice 1), No. 325 (Listing Notice 2), No. 324 (Listing Notice 3) in Government Gazette No. 40772 of 07 April 2017). Listing Notice 1 and 3 are for a Basic Assessment and Listing Notice 2 for a full Environmental Impact Assessment.

According to the regulations of Section 24(5) of NEMA, authorisation is required for the following listed activities for the proposed solar PV development:

Government Notice R327 (Listing Notice 1) listed activities:

- 1 The **development** of facilities or infrastructure for the generation of electricity from a **renewable resource** where-
 - (i) the electricity output is more than 10 megawatts but less than 20 megawatts; or
 - (ii) the output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare;excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs
 - (a) within an urban area; or
 - (b) On existing infrastructure

- 27 The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for;
 - (i) the undertaking of a linear activity; or
 - (ii) maintenance purposes undertaken in accordance with a maintenance management plan.

- 28 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:
 - (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or
 - (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes”

Government Notice R324 (Listing notice 3) listed activities:

- 4 The development of a road wider than 4 metres with a reserve less than 13,5 metres.
In the Western Cape:
 - i. Areas zoned for use as public open space or equivalent zoning;
 - ii. Areas outside urban areas;
 - (aa) Areas containing indigenous vegetation;
 - (bb) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined; or
 - iii. Inside urban areas:
 - (aa) Areas zoned for conservation use; or
 - (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority.”

- 12 The **clearance of an area** of 300 square metres or more of **indigenous vegetation** except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.
In the Western Cape:
 - 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;
 - ii. Within critical biodiversity areas identified in bioregional plans;

- iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on even in urban areas;
- iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or
- v. On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister

Need and Desirability

The current energy crisis in South Africa, emphasized the important role that renewable energy can play to generate electricity. The release of solar energy into developments will reduce the pressure of non-renewable resources.

According to the Town Planning Motivational Report (Appendix L), the proposed solar photovoltaic facility on a portion of Erf 551 will not only be in the interest of Swartland Municipality's local economy but also in the national interest as it contributes to the goals of the White Paper on Renewable Energy. Renewable energy provides an environmentally friendly alternative to energy generation and can contribute to the restriction of pollution and global warming. The application can be seen positively in the light of the following:

- The facility will increase electricity capacity to contribute to the alleviation of SA's energy crisis;
- The facility will meet the demand for diversified energy sources;
- Ensure the future of sustainable energy use;
- Provide local employment opportunities;
- Reduce CO₂ emissions and the nation's carbon footprint;
- The proposed development is supported by the Swartland Spatial Development Framework (SDF)
- that guides sustainable future development;
- The proposed development supports spatial sustainability in terms of LUPA and SPLUMA;
- The proposed development is supported by the Swartland Local Economic Development (LED);
- The proposed development is supported by the Western Cape Provincial Spatial Development Framework (WCPSDF) that guides sustainable future development in the Western Cape area.;
- The proposed development is supported by the Swartland Integrated Development Plan (IDP);
- The proposed development is supported by the national Development Plan 2030 (NDP)
- The development will not adversely affect the character of the area, due to its scale.

The site is ideally located on municipal property, that is underutilised, with little to no environmental constraints. It is directly adjacent to the municipal substation, thereby avoiding the need for additional overhead powerlines.

There are also no restrictions on-site or in the title deed that would prohibit the development of the solar facility on the property.

The topography is also ideal, as the property is generally flat, with very little gradient.

Site Description

The proposed site is located on the western side, just outside, of Darling, at the corner of the R315 (road between Yzerfontein and Malmesbury) and on either side of the DR1156 (Burgerspan / Kraalbosdam Road).

Site co-ordinates (estimated central point): 33° 21' 52.20" S, 18° 22' 39.20" E.

Vegetation:

In accordance with the 2018 Vegetation map of South Africa, Lesotho and Swaziland (Mucina & Rutherford, 2006), the proposed footprint(s) would historically have been covered in one broad vegetation type, namely

Swartland Granite Renosterveld, a vegetation type classified as “Endangered” in terms of the NEM: BA “revised national list of ecosystems that are threatened and in need of protection” (GN 2747, November 2022)(see Figure 6 below).

A terrestrial CBA was identified on the property; however, the development footprint avoids the CBA.

According to the Biodiversity Impact Assessment (**Appendix G2**), according to the 2020, DEA Land Cover (9-class) map of South Africa, the study area is considered cultivated land used for the cultivation of commercial annual crops on drylands. This was confirmed by the site visit. It also confirmed that the study area (and its immediate surroundings) does not support any remaining natural veld of any consequence.

Historical Google images show that the site was already cultivated during 2003 (the earliest historical Google image covering the terrain) and were physically cultivated (ploughed) at least up to 2014. Since then, the site seems to have laid fallow, but was used for livestock grazing. At the time of the site visit the western portion of the site was used for grazing by horses.

The site visit confirmed that the study area had been transformed as a result of historical cultivation practices over a long period of time. No remaining natural veld of any significance remains anywhere within the study area. Even though the veld had been lying fallow for approximately 9 years the only indigenous plant species observed where a few hardy pioneer shrubs and bulb species, species often associated with disturbed renosterveld.

Because of the degraded state of the study area, it is considered unlikely that the proposed solar facility will result in any significant additional impact on the plant species sensitivity theme. Also because of the degraded status of the site the Plant Species theme for this study area should be rated as **Low Sensitive**.

Freshwater:

A non-perennial river runs west to north-east through the property. The drainage line is not identified on the DWS or NFEPA overlays, but is evident on Google Earth and from site visit. The drainage line is however, identified as both a Terrestrial and a Wetland CBA on the Western Cape Biodiversity Spatial Plan (BSP).

According to the Freshwater Impact Assessment (**Appendix G1**), the drainage lines and their tributaries are identified as Restorable Ecological Support Areas. The drainage lines have been engineered and tilled. It would take a major effort to restore these drainage lines to assume its former ecological functioning.

No other watercourses or wetlands were identified on the property.

The development footprint of the proposed development has taken the drainage line and the CBAs into consideration, and avoided these areas.

Heritage;

A Heritage Notice of Intent to Develop was submitted to Heritage Western Cape. Final comment was received (dated 26 September 2023)(see Appendix E1). The Final comment states:

“This matter was discussed at the Heritage Officers Meeting held on 26 September 2023.

You are hereby notified that, since there is no reason to believe that the proposed solar facility on the remainder of Erf 551, off the R315 Road, Darling, will impact on heritage resources. No further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required.”

Environmental Sensitivities

A Site Sensitivity Verification (SSV) Report was undertaken in terms of the *Protocols for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes* (referred to “the Protocols” hereafter) as per Government Notice No. 320 (published in Government Gazette No. 43110 on 20 March 2020)¹. These Protocols, effected as on the 9th May 2020, must be complied with for every new application submitted after the effective date. According to the Protocols, the EAP must verify the current use of the proposed site for development as well as the site’s environmental sensitivity, in accordance with the DFFE Screening Tool Report,

¹ The Protocols are in line with Section 24(5)(a) and (h) and Section 44 of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998).

to determine the need for specialist inputs in relation to the themes (and proposed specialist assessments) included in the Protocols.

The aim of the SSV Report is to;

- Verify land use and theme sensitivities as identified by the DFFE Screening Tool;
- Confirm or motivate against or for the need for a particular specialist assessment(s) as indicated by the DFFE Screening Tool; and
- Should the need for a specialist assessment be refuted / challenged, provide a motivation as to why the proposed specialist assessment is not applicable to the proposed development.

According to the DFFE National Environmental Screening Tool Report (see Appendix I1), the following theme ratings were given, and verified.

Theme	DFFE Theme Rating	Verified Rating
Agriculture Theme	High	Medium
Animal Species Theme	High	Low
Aquatic Biodiversity Theme	Very High	Low
Archaeological and Heritage Theme	Low	Low
Avian Theme	Low	Low
Civil Aviation Theme	Low	Low
Defence Theme	Low	Low
Landscape (solar) Theme	Very High	High
Palaeontological Theme	Medium	Low
Plant Species Theme	Medium	Low
RFI Theme	Low	Low
Terrestrial Biodiversity Theme	Very High	Medium-low

Conclusion

The following specialist studies were undertaken as part of the Basic Assessment Report:

- Freshwater Assessment
- Biodiversity Assessment
- Agricultural Statement
- Visual Impact Assessment
- Socio-economic Impact Assessment

The specialist studies and information provided in the Basic Assessment Report, indicate that the proposed development does not pose any significant negative impact to the environment and can be implemented with strict adherence to the recommended mitigation measures.

Mitigation measures as recommended by the specialists must be enforced if the proposed development were to be approved. These mitigation measures and recommendations are discussed in Section I of this report and have been included in the Environmental Impact Report (EMPr) attached as **Appendix H**.

According to the Freshwater Assessment (**Appendix G1**), the environmental risks are small, even negligible, because of the low-impact nature of the project.

The construction and operation of the solar energy plant is because of its nature a low-impact project pertaining the aquatic environment. The project should go ahead.

The Biodiversity Impact Assessment (**Appendix G2**) concluded that the status of the vegetation within the study area is considered transformed (old agricultural land) and reduced to a weedy herbaceous bottom layer dominated by weeds or widespread species or disturbance indicator species. On the edges of the study area,

and scattered throughout the site, a number of hardy pioneer shrubs species were occasionally observed (usually dominated by disturbance indicator species such as *Galenia africana*).

The study area does not contain any intact natural vegetation of any significance and had been cultivated over a long period of time. Renosterveld is unlikely to restore itself (for many generations, if ever), even with active rehabilitation. Rehabilitation would only be possible if the study area is actively replanted and re-seeded with indigenous vegetation from surrounding intact veld and then protected as a conservation area. In this case, rehabilitation and conservation of the site is not considered a viable option as there would be many other areas in better condition more worthy of conservation efforts.

There are no specific sensitive areas within the study area.

According to the Visual Impact Assessment (**Appendix G3**), the proposed development will have a high impact on the landscape causing noticeable change to the visual environment. In summary, the nature of the impact is as follows: The development's visual impact has district extent, long-term duration, medium intensity, definite probability, and medium significance on the landscape.

According to the Agricultural Statement (**Appendix G4**), the assessed area is considered to be below the threshold for needing to be conserved as agricultural production land because of the limitations on its cropping potential. The production potential of the land is limited to only being suitable as grazing land, and there is no particular scarcity of such land in the country, in contrast to arable land, which is very scarce. The use of this land for renewable power generation will cause minimal loss of agricultural production potential in terms of national food security. Due to the fact that the energy facility will not occupy scarce, viable cropland, the overall negative agricultural impact of the development (loss of future agricultural production potential) is assessed here as being of low significance and as **acceptable**.

According to the Socio-economic Impact Assessment (**Appendix G5**), the proposed development will generate employment: During the construction phase, ±52 jobs is expected to be created and a wage bill of ±R6 million over 10 months and R5.5 million benefiting the locals, providing broadly 17 unskilled, 32 semi-skilled and 3 skilled people employment. During the operational phase, the generation of ±10 jobs, and a wage bill of R15.5 million for the first ten years of which R12 million will benefit locals and R1.6 million per annum is spend.

During construction, operations and decommissioning the facility contributes <1% to the Swartland GDP mainly from sales generated from the wage bill, materials and services, and selling R11.2 million's electricity.

The development will also enhance the supply of bulk services as 19.9MW and 6500 households are provided with electricity, during operations.

The proposed solar facility as a whole should be authorised.

Considering all the information, it is not envisaged that this proposed development will have a significant negative impact on the environment. Sensitive environmental areas such as the watercourses and Critical Biodiversity Areas are excluded from the development footprint. The socio-economic benefits of the project are expected to greatly outweigh the negative socio-economic impacts (loss of sense of place and loss of agricultural land) and any negative environmental impacts.

If authorised, the Environmental Authorisation should be valid for a minimum of five (5) years for construction to commence, with a further five (5) years for construction to be completed.

IMPORTANT INFORMATION TO BE READ PRIOR TO COMPLETING THIS BASIC ASSESSMENT REPORT

1. **The purpose** of this template is to provide a format for the Basic Assessment report as set out in Appendix 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) in order to ultimately obtain Environmental Authorisation.
2. The Environmental Impact Assessment ("EIA") Regulations is defined in terms of Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") hereinafter referred to as the "NEMA EIA Regulations".
3. The required information must be typed within the spaces provided in this Basic Assessment Report ("BAR"). The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided.
4. All applicable sections of this BAR must be completed.
5. Unless protected by law, all information contained in, and attached to this BAR, will become public information on receipt by the Competent Authority. If information is not submitted with this BAR due to such information being protected by law, the applicant and/or Environmental Assessment Practitioner ("EAP") must declare such non-disclosure and provide the reasons for believing that the information is protected.
6. This BAR is current as of **November 2019**. It is the responsibility of the Applicant/ EAP to ascertain whether subsequent versions of the BAR have been released by the Department. Visit this Department's website at <http://www.westerncape.gov.za/eadp> to check for the latest version of this BAR.
7. This BAR is the standard format, which must be used in all instances when preparing a BAR for Basic Assessment applications for an environmental authorisation in terms of the NEMA EIA Regulations when the Western Cape Government Department of Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority.
8. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this BAR must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this Report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.
9. This BAR must be duly dated and originally signed by the Applicant, EAP (if applicable) and Specialist(s) and must be submitted to the Department at the details provided below.
10. The Department's latest Circulars pertaining to the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must be taken into account when completing this BAR.
11. Should a water use licence application be required in terms of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"), the "One Environmental System" is applicable, specifically in terms of the synchronisation of the consideration of the application in terms of the NEMA and the NWA. Refer to this Department's Circular EADP 0028/2014: One Environmental Management System.
12. Where Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA") is triggered, a copy of Heritage Western Cape's final comment must be attached to the BAR.
13. The Screening Tool developed by the National Department of Environmental Affairs must be used to generate a screening report. Please use the Screening Tool link

<https://screening.environment.gov.za/screeningtool> to generate the Screening Tool Report. The screening tool report must be attached to this BAR.

14. Where this Department is also identified as the Licencing Authority to decide on applications under the National Environmental Management: Air Quality Act (Act No. 29 of 2004) ("NEM:AQA"), the submission of the Report must also be made as follows, for- Waste Management Licence Applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (Tel: 021-483-2728/2705 and Fax: 021-483-4425) at the same postal address as the Cape Town Office.

Atmospheric Emissions Licence Applications, this report must also be (i.e., another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (Tel: 021 483 2888 and Fax: 021 483 4368) at the same postal address as the Cape Town Office.

DEPARTMENTAL DETAILS

CAPE TOWN OFFICE: REGION 1 and REGION 2 (Region 1: City of Cape Town, West Coast District) (Region 2: Cape Winelands District & Overberg District)	GEORGE OFFICE: REGION 3 (Central Karoo District & Garden Route District)
<p>BAR must be sent to the following details:</p> <p>Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1 or 2) Private Bag X 9086 Cape Town, 8000</p> <p>Registry Office 1st Floor Utilitas Building 1 Dorp Street, Cape Town</p> <p>Queries should be directed to the Directorate: Development Management (Region 1 and 2) at: Tel: (021) 483-5829 Fax (021) 483-4372</p>	<p>BAR must be sent to the following details:</p> <p>Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530</p> <p>Registry Office 4th Floor, York Park Building 93 York Street George</p> <p>Queries should be directed to the Directorate: Development Management (Region 3) at: Tel: (044) 805-8600 Fax (044) 805 8650</p>

MAPS

Provide a location map (see below) as Appendix A1 to this BAR that shows the location of the proposed development and associated structures and infrastructure on the property.	
Locality Map:	<p>The scale of the locality map must be at least 1:50 000. For linear activities or development proposals of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map. The map must indicate the following:</p> <ul style="list-style-type: none"> • an accurate indication of the project site position as well as the positions of the alternative sites, if any; • road names or numbers of all the major roads as well as the roads that provide access to the site(s) • a north arrow; • a legend; and • a linear scale. <p>For ocean based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken.</p> <p>Where comment from the Western Cape Government: Transport and Public Works is required, a map illustrating the properties (owned by the Western Cape Government: Transport and Public Works) that will be affected by the proposed development must be included in the Report.</p>
Provide a detailed site development plan / site map (see below) as Appendix B1 to this BAR; and if applicable, all alternative properties and locations.	
Site Plan:	<p>Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following:</p> <ul style="list-style-type: none"> • The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be clearly indicated on the plan, preferably together with a linear scale. • The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan. • On land where the property has not been defined, the co-ordinates of the area in which the proposed activity or development is proposed must be provided. • The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be clearly indicated on the site plan. • The position of each component of the proposed activity or development as well as any other structures on the site must be indicated on the site plan. • Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the proposed development must be clearly indicated on the site plan.

	<ul style="list-style-type: none"> • Servitudes and an indication of the purpose of each servitude must be indicated on the site plan. • Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): <ul style="list-style-type: none"> ○ Watercourses / Rivers / Wetlands ○ Flood lines (i.e., 1:100 year, 1:50 year and 1:10 year where applicable); ○ Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&DP"): ○ Ridges; ○ Cultural and historical features/landscapes; ○ Areas with indigenous vegetation (even if degraded or infested with alien species). • Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted. • North arrow <p>A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas.</p>
Site photographs	Colour photographs of the site that shows the overall condition of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached to this BAR as Appendix C . The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.
Biodiversity Overlay Map:	A map of the relevant biodiversity information and conditions must be provided as an overlay map on the property/site plan. The Map must be attached to this BAR as Appendix D .
Linear activities or development and multiple properties	GPS co-ordinates must be provided in degrees, minutes and seconds using the Hartebeeshoek 94 WGS84 co-ordinate system. Where numerous properties/sites are involved (linear activities) you must attach a list of the Farm Name(s)/Portion(s)/Erf number(s) to this BAR as an Appendix. For linear activities that are longer than 500m, please provide a map with the co-ordinates taken every 100m along the route to this BAR as Appendix A3 .

ACRONYMS

DAFF:	Department of Forestry and Fisheries
DEA:	Department of Environmental Affairs
DEA& DP:	Department of Environmental Affairs and Development Planning
DHS:	Department of Human Settlement
DoA:	Department of Agriculture
DoH:	Department of Health
DWS:	Department of Water and Sanitation
EMPr:	Environmental Management Programme
HWC:	Heritage Western Cape
NFEPA:	National Freshwater Ecosystem Protection Assessment
NSBA:	National Spatial Biodiversity Assessment
TOR:	Terms of Reference
WCBSP:	Western Cape Biodiversity Spatial Plan
WCG:	Western Cape Government

ATTACHMENTS

Note: The Appendices must be attached to the BAR as per the list below. Please use a ✓ (tick) or a x (cross) to indicate whether the Appendix is attached to the BAR.

The following checklist of attachments must be completed.

APPENDIX			✓ (Tick) or x (cross)
Appendix A:	Maps		
	Appendix A1:	Locality Map	✓
	Appendix A2:	Coastal Risk Zones as delineated in terms of ICMA for the Western Cape by the Department of Environmental Affairs and Development Planning	X
	Appendix A3:	Map with the GPS co-ordinates for linear activities	X
Appendix B:	Appendix B1:	Site development plan(s)	✓
	Appendix B2	A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas;	✓
Appendix C:	Photographs		✓
Appendix D:	Biodiversity overlay map		✓
Appendix E:	Permit(s) / license(s) / exemption notice, agreements, comments from State Department/Organs of state and service letters from the municipality.		
	Appendix E1:	Final comment/ROD from HWC (Draft Comment)	✓
	Appendix E2:	Copy of comment from Cape Nature	
	Appendix E3:	Final Comment from the DWS (Draft comment from BGCMA)	
	Appendix E4:	Comment from the DEA: Oceans and Coast	
	Appendix E5:	Comment from the DAFF	
	Appendix E6:	Comment from WCG: Transport and Public Works	
	Appendix E7:	Comment from WCG: DoA	
	Appendix E8:	Comment from WCG: DHS	
	Appendix E9:	Comment from WCG: DoH	

	Appendix E10:	Comment from DEA&DP: Pollution Management	
	Appendix E11:	Comment from DEA&DP: Waste Management	
	Appendix E12:	Comment from DEA&DP: Biodiversity	
	Appendix E13:	Comment from DEA&DP: Air Quality	
	Appendix E14:	Comment from DEA&DP: Coastal Management	
	Appendix E15:	Comment from the local authority	
	Appendix E16:	Confirmation of all services (water, electricity, sewage, solid waste management)	
	Appendix E17:	Comment from the District Municipality	
	Appendix E18:	Copy of an exemption notice	
	Appendix E19	Pre-approval for the reclamation of land	
	Appendix E20:	Proof of agreement/TOR of the specialist studies conducted.	
	Appendix E21:	Proof of land use rights	
	Appendix E22:	Proof of public participation agreement for linear activities	
Appendix F:	<p>Public participation information: including a copy of the register of I&APs, the comments and responses Report, proof of notices, advertisements and any other public participation information as is required.</p> <ul style="list-style-type: none"> - Appendix F1 – Newspaper Advert - Appendix F2 – Proof of notifications – Registered Mail - Appendix F3 – Proof of email notifications - Appendix F4 – Proof of site posters 		✓
Appendix G:	<p>Specialist Report(s)</p> <ul style="list-style-type: none"> - Appendix G1 – Freshwater Assessment - Appendix G2 - Biodiversity Impact Assessment - Appendix G3 – Visual Impact Assessment - Appendix G4 – Agricultural Compliance Statement - Appendix G5 – Socio-economic Impact Assessment 		✓
Appendix H:	EMPr		✓
Appendix I:	Screening tool report		✓

Appendix J:	The impact and risk assessment for each alternative	✓
Appendix K:	Need and desirability for the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013)/DEA Integrated Environmental Management Guideline	
Appendix L:	Any other attachments must be included as subsequent appendices - Town Planning Motivational report	✓

SECTION A: ADMINISTRATIVE DETAILS

Highlight the Departmental Region in which the intended application will fall	CAPE TOWN OFFICE:		GEORGE OFFICE:
	REGION 1 (City of Cape Town, West Coast District)	REGION 2 (Cape Winelands District & Overberg District)	REGION 3 (Central Karoo District & Garden Route District)
Duplicate this section where there is more than one Proponent Name of Applicant/Proponent: Name of contact person for Applicant/Proponent (if other): Company/ Trading name/State Department/Organ of State: Company Registration Number: Postal address: Telephone: E-mail:	Swartland Local Municipality		
	Madelaine Terblanche		
	Private Bag X52		
	Malmesbury		Postal code: 7299
	022 487 9400		Cell:
swartlandmun@swartland.org.za		Fax: ()	
Company of EAP: EAP name: Postal address: Telephone: E-mail: Qualifications: EAPASA registration no:	EnviroAfrica CC		
	Clinton Geyser		
	P.O. Box 5367		
	Helderberg		Postal code: 7135
	021 851 1616		Cell:
	clinton@enviroafrica.co.za		Fax: (086) 512 0154
	Clinton Geyser – MSc: Geography and Environmental Management 2021/3287		
Duplicate this section where there is more than one landowner Name of landowner: Name of contact person for landowner (if other): Postal address: Telephone: E-mail:	Same as Applicant		
			Postal code:
			Cell: Fax: ()
Name of Person in control of the land: Name of contact person for person in control of the land: Postal address: Telephone: E-mail:	Same as Applicant		
			Postal code:
	()		Cell: Fax: ()
Duplicate this section where there is more than one Municipal Jurisdiction Municipality in whose area of jurisdiction the proposed activity will fall: Contact person: Postal address: Telephone: E-mail:	Same as the Applicant		
			Postal code:
			Cell: Fax: ()

SECTION B: CONFIRMATION OF SPECIFIC PROJECT DETAILS AS INCLUDED IN THE APPLICATION FORM

1.	Is the proposed development (please tick):	New	<input checked="" type="checkbox"/>	Expansion																					
2.	Is the proposed site(s) a brownfield of greenfield site? Please explain.																								
Brownfield. The proposed development will take place on land that has been utilised for agricultural purposes (cultivated land and livestock grazing) within the last 10 years																									
3.	For Linear activities or developments																								
3.1.	Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:																								
N/A																									
3.2.	Development footprint of the proposed development for all alternatives.			m ²																					
N/A																									
3.3.	Provide a description of the proposed development (e.g. for roads the length, width and width of the road reserve in the case of pipelines indicate the length and diameter) for all alternatives.																								
N/A																									
3.4.	Indicate how access to the proposed routes will be obtained for all alternatives.																								
N/A																									
3.5.	SG Digit codes of the Farms/Farm Portions/Erf numbers for all alternatives																								
3.6.	Starting point co-ordinates for all alternatives																								
	Latitude (S)	°	'	“																					
	Longitude (E)	°	'	“																					
	Middle point co-ordinates for all alternatives																								
	Latitude (S)	°	'	“																					
	Longitude (E)	°	'	“																					
	End point co-ordinates for all alternatives																								
	Latitude (S)	°	'	“																					
	Longitude (E)	°	'	“																					
Note: For Linear activities or developments longer than 500m, a map indicating the co-ordinates for every 100m along the route must be attached to this BAR as Appendix A3.																									
4.	Other developments																								
4.1.	Property size(s) of all proposed site(s):		371ha	3 713 634m ²																					
4.2.	Developed footprint of the existing facility and associated infrastructure (if applicable):			m ²																					
4.3.	Development footprint of the proposed development and associated infrastructure size(s) for all alternatives:			550 000m ²																					
4.4.	Provide a detailed description of the proposed development and its associated infrastructure (This must include details of e.g. buildings, structures, infrastructure, storage facilities, sewage/effluent treatment and holding facilities).																								
The proposed development includes the construction of a solar PV facility on Portion of Erf 551, Darling. The site is located on either side of the DR1156 (Burgerspan/ Kraalbosdam road), on the north-eastern side of the R315.																									
The facility will comprise Solar PV generation, lithium battery storage and electrical reticulation equipment on approximately 54ha. The modules will be mounted on a table array anchored to the ground utilising rammed or planted steel support posts. A concrete foot piece secured to a steel pen driven into the ground will be used where ramming does not prove feasible. The maximum height of the solar array tables in operation																									

would be approximately 5m and would allow sufficient ground clearance for the free flow of surface water underneath the panels.

The facility and associated infrastructure will be accessed via existing access road. A 6m management track will surround each block of photovoltaic arrays. These single-track management roads will be used as access roads to service and maintain structures and to serve as fire breaks. On full commissioning of the facility, any access points to the site which are not required during operational phase will be closed.

The proposed PV Plant of approximately 54ha (solar panels) will generate a projected power peak (electricity) of approximately 19.9 MWp. Solar PV technology is a method of generating electrical power by converting solar radiation using semiconductors through a process known as the photovoltaic effect. It is not the heat required from the sun but the amount of irradiation available that allows for electrical energy to be generated.

PV Panel technology has the following components which consist of:

- PV Cell: A basic PV device, which generates electricity when exposed to solar radiation. All PV cells produce Direct Current (DC) electricity;
- PV Module or Panel: The smallest complete assembly of interconnected PV cells. The modules are typically mounted in a lightweight
- PV Array: A group of PV panels connected together is termed as PV Array. An interconnected system of PV modules that function as a single electricity producing unit. The proposed PV panels are approximately 2.3m in height and 1.3m in width (later confirmed). These panels will be installed on single axis tracking mounting structures.
- Mounting Structure: The single axis tracking mounting structure is approx. 4.5 m in height. Total height is approximately 5m depending on the specific ground clearance allowed below the structure and make and model of the PV array secured steel posts, planted in the ground, providing structural support for the PV array. Each PV Array table is approximately 12m in length and 4.5m series to make a Solar Array tab typically varies from 260-360m. The rows are then arranged in a matrix throughout the Solar field with all energy generated being consolidated at the electrical reticulation points.

4.5. Indicate how access to the proposed site(s) will be obtained for all alternatives.

Access to the site will be from the service road leading from the DR1156

4.6.	SG Digit code(s) of the proposed site(s) for all alternatives:	C	0	4	6	0	0	0	0	0	0	0	0	0	5	5	1	0	0	0	0	0
4.7.	Coordinates of the proposed site(s) for all alternatives:																					
	Latitude (S)	33°	21'	52.20"																		
	Longitude (E)	18°	22'	39.20"																		

SECTION C: LEGISLATION/POLICIES AND/OR GUIDELINES/PROTOCOLS

1. Exemption applied for in terms of the NEMA and the NEMA EIA Regulations

Has exemption been applied for in terms of the NEMA and the NEMA EIA Regulations. If yes, include a copy of the exemption notice in Appendix E18.	YES	NO
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2. Is the following legislation applicable to the proposed activity or development.

The National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) ("ICMA"). If yes, attach a copy of the comment from the relevant competent authority as Appendix E4 and the pre-approval for the reclamation of land as Appendix E19.	YES	NO
The National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA"). If yes, attach a copy of the comment from Heritage Western Cape as Appendix E1.	YES	NO
The National Water Act, 1998 (Act No. 36 of 1998) ("NWA"). If yes, attach a copy of the comment from the DWS as Appendix E3.	YES	NO
The National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM:AQA"). If yes, attach a copy of the comment from the relevant authorities as Appendix E13.	YES	NO
The National Environmental Management Waste Act (Act No. 59 of 2008) ("NEM:WA")	YES	NO
The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004 ("NEMBA").	YES	NO
The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) ("NEMPAA").	YES	NO
The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). If yes, attach comment from the relevant competent authority as Appendix E5.	YES	NO

3. Other legislation

List any other legislation that is applicable to the proposed activity or development.
N/A

4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.
N/A

5. Guidelines

List the guidelines which have been considered relevant to the proposed activity or development and explain how they have influenced the development proposal.
<p>DEADP Guidelines - All guidelines were consulted and adhered to when undertaking this Impact Assessment Report, including but not limited to:</p> <ul style="list-style-type: none"> - DEA&DP's Circular EADP 0028/2014: One Environmental Management System - EIA Guideline and Information Document Series - Guideline on Public Participation - Guideline for Environmental Management Plans - Guideline for Involving Biodiversity Specialists in EIA processes. - Guideline on Alternatives - The Guideline on Need and Desirability

6. Protocols

Explain how the proposed activity or development complies with the requirements of the protocols referred to in the NOI and/or application form

The Assessment protocols identified in the DFFE Screening Tool, particularly pertaining to Terrestrial Biodiversity, Aquatic Biodiversity, Palaeontological, Archaeological and Heritage, Landscape (Visual) and Plant Species. Please refer to Table 2 of the Site Sensitivity Verification Report (Appendix I2).

In this regard, a Biodiversity Impact Assessment, Freshwater Assessment, Visual Impact Assessment and Socio-economic Impact Assessment have been conducted.

SECTION D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1	Describe the portion of the proposed development to which the applicable listed activity relates.
1	<p>The development of facilities or infrastructure for the generation of electricity from a renewable resource where-</p> <ul style="list-style-type: none"> (iii) the electricity output is more than 10 megawatts but less than 20 megawatts; or (iv) the output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare; <p>excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs</p> <ul style="list-style-type: none"> (a) within an urban area; or (b) On existing infrastructure 	<p>The proposed facility will have an output of approximately 19.9 MW.</p>
27	<p>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for;</p> <ul style="list-style-type: none"> (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan. 	<p>Although the site is predominantly covered in pastures and previously cultivated land, there are some hardy pioneer shrubs along the edges of the old fields. This will lead to the clearance of more than 1ha, but less than 20ha of indigenous vegetation.</p>
28.	<p>“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:</p> <ul style="list-style-type: none"> (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; <p>excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes”</p>	<p>The proposed development will cover an area of approximately 54 ha, and is outside an urban area. The development can be considered a commercial and/or industrial development. The property is zoned Agricultural.</p>
Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3	Describe the portion of the proposed development to which the applicable listed activity relates.
4	<p>“The development of a road wider than 4 metres with a reserve less than 13,5 metres.</p> <p>In the Western Cape:</p>	<p>The proposed development will require roads wider than 4 metres (6m). The site is outside an urban area, and contains some indigenous vegetation.</p>

	<p>i. Areas zoned for use as public open space or equivalent zoning;</p> <p>ii. Areas outside urban areas;</p> <p>(aa) Areas containing indigenous vegetation;</p> <p>(bb) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined; or</p> <p>iii. Inside urban areas:</p> <p>(aa) Areas zoned for conservation use; or</p> <p>(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority.”</p>	
12	<p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>In the Western Cape:</p> <p>vi. 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;</p> <p>vii. Within critical biodiversity areas identified in bioregional plans;</p> <p>viii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas;</p> <p>ix. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or</p> <p>x. On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister</p>	<p>Although the site is predominantly covered in pastures, there are some hardy pioneer shrubs along the edges of the old fields. The site would historically have been covered in Swartland Granite Renosterveld (Endangered)</p>
<p>Note:</p> <ul style="list-style-type: none"> • The listed activities specified above must reconcile with activities applied for in the application form. The onus is on the Applicant to ensure that all applicable listed activities are included in the application. If a specific listed activity is not included in an Environmental Authorisation, a new application for Environmental Authorisation will have to be submitted. • Where additional listed activities have been identified, that have not been included in the application form, and amended application form must be submitted to the competent authority. 		

List the applicable waste management listed activities in terms of the NEM:WA

Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Category A	Describe the portion of the proposed development to which the applicable listed activity relates.
N/A		

List the applicable listed activities in terms of the NEM:AQA

Activity No(s):	Provide the relevant Listed Activity(ies)	Describe the portion of the proposed development to which the applicable listed activity relates.
N/A		

SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

1.	Provide a description of the preferred alternative.
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It is proposed that a solar photovoltaic (PV) facility including associated infrastructure be developed on Portion of Erf 551, Darling.

The proposed site is located on the western side, just outside, of Darling, at the corner of the R315 (road between Yzerfontein and Malmesbury) and on either side of the DR1156 (Burgerspan / Kraalbosdam Road).

Site co-ordinates (estimated central point): 33° 21' 52.20" S, 18° 22' 39.20" E.

The proposed development will cover an area of approximately 54ha. The solar PV array will cover an area of approximately 53.4ha, with a total generating capacity of approximately 19.9MW. The development will include a laydown area (2 000m²) and maintenance offices (5600m²).

This will be connected to the existing municipal substation located on the southern corner of the property via an approximately 100m underground 11kv line.

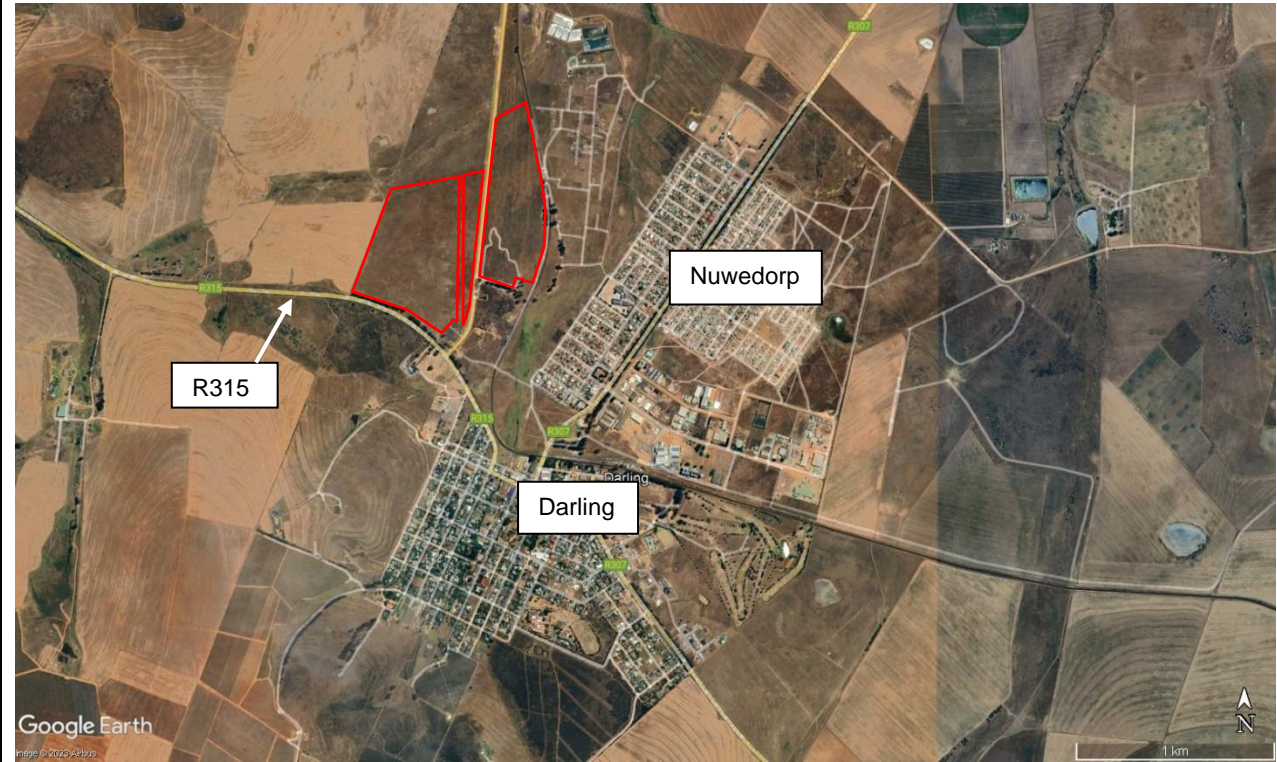


Figure 1: Google Earth image showing the locality of the proposed solar PV site (red polygons).

The facility will comprise Solar PV generation, lithium battery storage and electrical reticulation equipment on approximately 54ha. The modules will be mounted on a table array anchored to the ground utilising rammed or planted steel support posts. A concrete foot piece secured to a steel pen driven into the ground will be used where ramming does not prove feasible. The maximum height of the solar array tables in operation would be approximately 5m and would allow sufficient ground clearance for the free flow of surface water underneath the panels.

The facility and associated infrastructure will be accessed via existing access road. A 6m management track will surround each block of photovoltaic arrays. These single-track management roads will be used as access roads to service and maintain structures and to serve as fire breaks. On full commissioning of the facility, any access points to the site which are not required during operational phase will be closed.

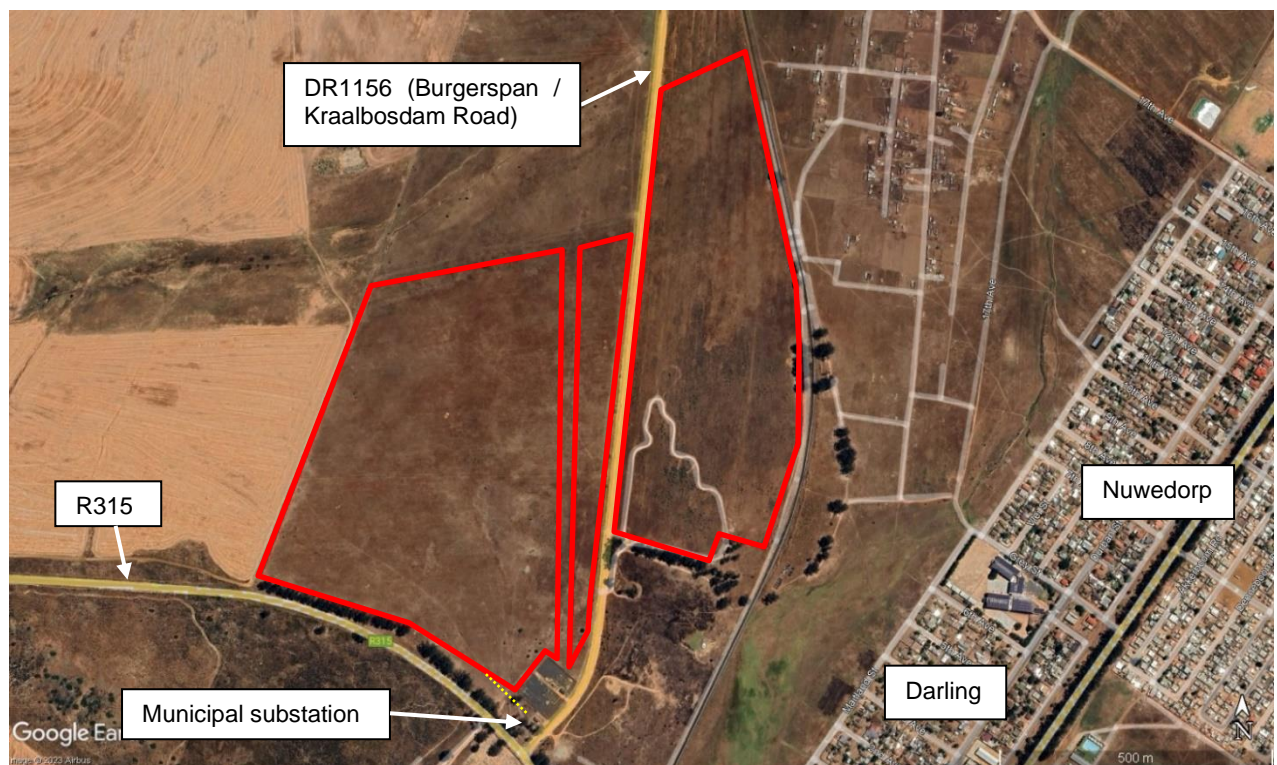


Figure 2: Google Earth image of the proposed solar PV site (red polygons). The underground powerline to the existing municipal substation is indicated by the yellow dashed line.

The proposed PV Plant of approximately 54ha (solar panels) will generate a projected power peak (electricity) of approximately 19.9 MWp. Solar PV technology is a method of generating electrical power by converting solar radiation using semiconductors through a process known as the photovoltaic effect. It is not the heat required from the sun but the amount of irradiation available that allows for electrical energy to be generated. PV Panel technology has the following components which consist of:

- PV Cell: A basic PV device, which generates electricity when exposed to solar radiation. All PV cells produce Direct Current (DC) electricity;
- PV Module or Panel: The smallest complete assembly of interconnected PV cells. The modules are typically mounted in a lightweight
- PV Array: A group of PV panels connected together is termed as PV Array. An interconnected system of PV modules that function as a single electricity producing unit. The proposed PV panels are approximately 2.3m in height and 1.3m in width (later confirmed). These panels will be installed on single axis tracking mounting structures.
- Mounting Structure: The single axis tracking mounting structure is approx. 4.5 m in height. Total height is approximately 5m depending on the specific ground clearance allowed below the structure and make and model of the PV array secured steel posts, planted in the ground, providing structural support for the PV array. Each PV Array table is approximately 12m in length and 4.5m series to make a Solar Array tab typically varies from 260-360m. The rows are then arranged in a matrix throughout the Solar field with all energy generated being consolidated at the electrical reticulation points.

2.	Explain how the proposed development is in line with the existing land use rights of the property as you have indicated in the NOI and application form? Include the proof of the existing land use rights granted in Appendix E21.
----	---

The property is zoned Agricultural I. A Consent Use Application is required and currently being applied for.

3.	Explain how potential conflict with respect to existing approvals for the proposed site (as indicated in the NOI/and or application form) and the proposed development have been resolved.
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There are no conflicts with respect to existing approvals.

4. Explain how the proposed development will be in line with the following?

4.1 The Provincial Spatial Development Framework.

Western Cape Spatial Development Framework (WCSDP), 2014, 2020 Amendment

The Western Cape government has set an ambitious goal of becoming the 'Green' Economic Hub of the African continent and introduced several strategic frameworks to achieve this goal. It was the first of South Africa's provinces to develop a Sustainable Energy Strategy and it has also launched a Green Economic Strategic Framework that targets job creation in the sector and building a strong environmentally conscious economy in the province. To support these objectives, the province is building institutional capacity and creating a conducive policy environment, with several renewable energy projects already implemented in the province.

In particular, GreenCape provides support to renewable energy IPPs to unlock the potential for renewable energy production in the province. Other related provincial strategies include OneCape 2040 (the province's long term socio-economic vision), the Western Cape Infrastructure Framework, the Draft Western Cape Climate Change Response Strategy and 110% Green, the Western Cape Premier's green economy programme that aims to create a platform for mobilising society around the green economy through practical action, partnerships and networks.

The Province's green economy strategic framework emphasises the need for a sustainable growth path that is accompanied by job growth. The strategic framework also identifies opportunities beyond energy infrastructure development and includes unlocking manufacturing and employment opportunities in the broader 'green' economy. These efforts, in combination with the IPPPP, are contributing to the creation of new direct and indirect job opportunities. The provincial electricity industry is likely to receive a substantial boost from the electrical energy projects located in the province as a result of the IPPPP. With the newly developed IPP capacity, the province will produce around 8% of its own electrical power needs from renewable energy sources and will save a gross Eskom grid equivalent of 1.8 million tonnes CO₂ emissions per annum.

Growing the economy is the Western Cape Government's number one development priority. The PSDF's role is to open-up opportunities for inclusive economic growth in urban and rural areas. The significance of the Province's spatial asset base stems from the fact that it:

- is the origin of life-supporting ecosystem services (e.g. clean air and water, pollination);
- underpins the economy, particularly agriculture which provides food security, sustains rural livelihoods and draws income into the Province, and tourism;
- comprises globally significant and diverse habitats and ecosystems.

Resource management policy objectives include:

- The protection of biodiversity and agricultural resources;
- Minimisation of consumption of scarce environmental resources (particularly water, fuel and land);
- Conservation and strengthening the sense of place of important natural, cultural and productive landscapes.

The Western Cape Provincial Spatial Development Framework (Provincial Government of the Western Cape (2014)), refers to the importance of a coherent framework for the Province's urban and rural areas that gives spatial expression to the National and Provincial development agendas. The Spatial Development Plan proposed a number of spatial policies, including policy R4 which relates to "Recycle and recover waste, deliver clean sources of energy to urban consumers, shift from private to public transport, and adapt to and mitigate against climate change". Specific objectives related to energy include pursuing energy diversification and energy efficiency for the Western Cape to transition to a low carbon, sustainable energy future, and delink economic growth from energy use. Furthermore, emergent Independent Power Producers (IPPs) and sustainable energy producers (wind, solar, biomass and waste conversion initiatives) should be supported in suitable rural locations.

In short, the Western Cape's energy is primarily drawn from the national grid which is dominated by coal based power stations and the goal is to develop the renewable energy sector. All main objectives of the PSDF are in line with the current project's expected and desired outcomes, as various critical factors are taken into consideration, namely the provision of renewable energy to the South African and potentially SADC countries' energy grid, use and reuse of water, the conservation of biodiversity areas and boosting the area's economy and the livelihoods of its population.

The Western Cape infrastructure framework stated that "Spatial policy must support the City's efforts to address vulnerabilities through actions aimed at improving energy efficiency and renewable energy in municipal operations. These include the prioritization of inward growth on the back of investment in public and non-motorised transport, encouraging embedded renewable electricity generation in the commercial and residential sectors, and providing the required planning support to the diversification of large-scale energy supply with solar, wind, energy storage solutions and possibly natural gas." There is a rising demand for less carbon intensive and renewable energy as evidenced above. The proposal will therefore comply with the guidelines of the WCSDF to provide sustainable clean energy.

4.2	The Integrated Development Plan of the local municipality.
-----	--

The Economic Development Plan is aligned with the Swartland's Integrated Development Plan (IDP), which is a municipality's principal strategic plan that deals with the most critical development needs of the municipal area (external focus) as well as the most critical governance needs of the organisation (internal focus).

Swartland's priorities for the future:

a) Sustainability

- Electricity sustainability – green energy
- Long term Infrastructure planning, implementation and maintenance to ensure sufficient capacity for expansion and economic growth

b) Opportunities

- Promote our towns to attract investment and economic development and growth.
- Local economic development

c) Good governance and financial management

- Creates confidence and attracts investment, ease of doing business.

When taking into account the future priorities, the proposal will provide green energy; contribute to providing sufficient capacity electricity, contribute to economic investment and create an attractiveness to invest/develop in Darling.

The need for renewable energy: A meeting was held with big businesses in the Swartland on 19 October 2022. The following inputs were received at the meeting: "Work on a solution for electricity (sustainable/renewable energy)."

The Municipality is also looking at making municipal land available for the possible development of renewable energy plants from which the municipality can purchase energy to lessen the reliance on Eskom and possible reduce the input cost of bulk electricity purchases.

Considering the above, the Swartland IDP supports the provision of renewable energy facilities to help combat the energy crisis, as the proposal will be located on municipal land.

4.3.	The Spatial Development Framework of the local municipality.
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Swartland Municipality Spatial Development Framework (2023)

The following are extracts from the Swartland SDF: "The availability of bulk infrastructure and services contribute to the economy and future development in Swartland settlements." "Green/renewable projects for Swartland are provided for in Malmesbury and Darling". The proposal will contribute to providing bulk electricity to Swartland Municipality, which can be utilised for either future development or can be fed back into the Eskom grid. The proposal will either way contribute to the relief of the energy crisis in South Africa.

The SDF also emphasizes the need to address vulnerabilities in the local economy, particularly in sectors such as the fishing industry, agriculture, and tourism. This can be achieved through the following measures:

- Diversify of activities,
- Strengthen municipal and communal disaster risk management and preparedness.
- Find and support alternative resources for energy and adopt renewable energy technology.

The proposal therefore complies with addressing these vulnerabilities in the local economy by proposing an additional renewable energy facility.

The proposed development is located within a high irradiation zone. The proposal to operate a solar facility in this location is therefore highly favourable.

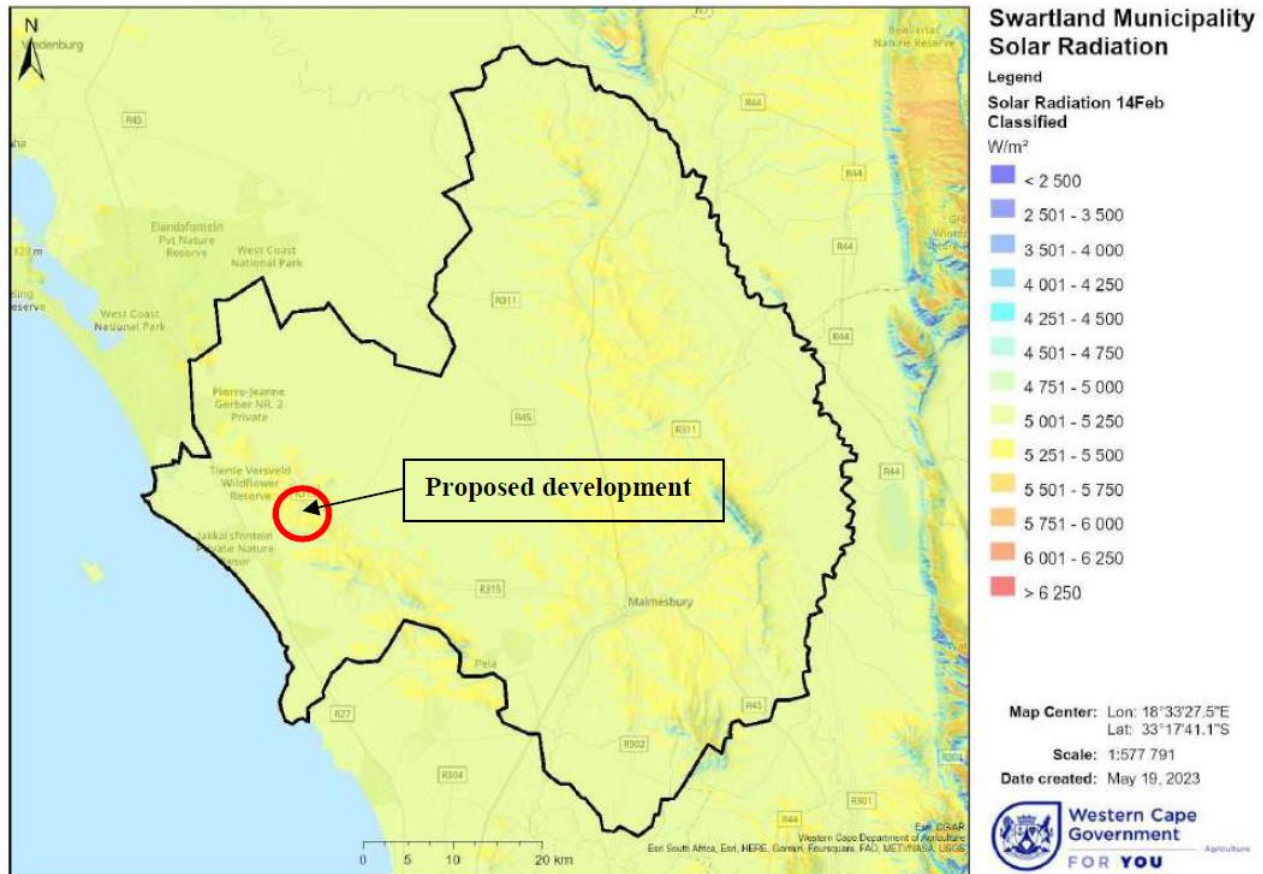


Figure 3: Extract from Swartland radiation zones

Alternative Solar Energy Facilities (extracts from the Swartland SDF)

- Change:
 - Provide for solar facilities to cater for future urban expansion. Generate alternative energy:
 - Plan for future urban expansion. Generate alternative energy.
 - Provide for expansion of transmission infrastructure.
 - Generate and use of alternative/renewable energy as per energy zones identified. Including
 - generation and use on small & large farms.
 - Ensure maintenance of adequate electricity reticulation.

- Develop:
 - Develop and encourage the use of alternative/renewable energy resources in the identified zones: Zone A, medium to high wind speeds, ideal for wind turbines. Zone B, high windspeed zone and C, northern section, high irradiation zone: photovoltaic plants photovoltaic plants; Ward 5: home to Darling Wind Farm (four wind turbines). Ward 6: home to solar panels.

While the Swartland SDF has identified specific zones for promoting renewable energy, it's important to note that these zones are not restricted exclusively to a particular type of renewable structure.

From Figure 3 it becomes evident that the town of Darling is situated within the radiation zone, making it an ideal candidate for the development of a solar energy facility. The Swartland SDF makes provision for the development and expansion of solar facilities and since Darling already has an approved solar facility on Erf 3778 (which will be implemented within the next year or so), the proposal can be seen as an extension of the approved solar facility. The proposal aligns seamlessly with the Swartland SDF guidelines and recommendations for future development in the region.

The area proposed for development is located outside the urban edge of Darling. A small portion of the area proposed for the facility is earmarked for Small Scale Agriculture. It should further be noted that the Spatial Development Framework is only a guiding document and cannot give rights nor take it away. It is very likely that both the Small Scale Agriculture and the proposed solar PV facility can be accommodated on this portion of land (since a much larger area is included in the study area than required for the PV facility).

4.	The Environmental Management Framework applicable to the area.
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No intersections with EMF areas found according to the DFFE Screening Tool Report.

5.	Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development.
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Authorities are yet to comment on the Basic Assessment Report and the Specialists reports.

6.	Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development.
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The Western Cape Biodiversity Spatial Plan has been considered, and has been assessed in the Biodiversity Impact Assessment (**Appendix G2**). According to the 2017 Western Cape Biodiversity Spatial Plan (WCBSP) (CapeNature, 2017), the property overlaps a Critical Biodiversity Area (CBA) (see Figure 5 below), however, the development footprint has been placed to avoid any CBAs.

7.	Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA.
----	--

N/A

8.	Explain whether the screening report has changed from the one submitted together with the application form. The screening report must be attached as Appendix I.
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The Screening Report has changed. Plant Species theme changed from High to Medium Sensitivity.

9.	Explain how the proposed development will optimise vacant land available within an urban area.
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N/A

10.	Explain how the proposed development will optimise the use of existing resources and infrastructure.
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The proposed development is for a solar PV renewable energy facility.

11.	Explain whether the necessary services are available and whether the local authority has confirmed sufficient, spare, unallocated service capacity. (Confirmation of all services must be included in Appendix E16).
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No additional services will be required from the local authority.

12.	In addition to the above, explain the need and desirability of the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013) or the DEA's Integrated Environmental Management Guideline on Need and Desirability. This may be attached to this BAR as Appendix K.
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While the concept of need and desirability relates to the *type* of development being proposed, essentially, the concept of need and desirability can be explained in terms of the general meaning of its two components in which *need* refers to *time* and *desirability* to *place* – i.e. is this the right time and is it the right place for locating

the type of land-use/activity being proposed? Need and desirability can be equated to *wise use of land* – i.e. the question of what is the most sustainable use of land.

- **NEED**

The current energy crisis in South Africa, emphasized the important role that renewable energy can play to generate electricity. The release of solar energy into developments will reduce the pressure of non-renewable resources.

According to the Town Planning Motivational Report (Appendix L), the proposed solar photovoltaic facility on a portion of Erf 551 will not only be in the interest of Swartland Municipality's local economy but also in the national interest as it contributes to the goals of the White Paper on Renewable Energy. Renewable energy provides an environmentally friendly alternative to energy generation and can contribute to the restriction of pollution and global warming. The application can be seen positively in the light of the following:

- The facility will increase electricity capacity to contribute to the alleviation of SA's energy crisis;
- The facility will meet the demand for diversified energy sources;
- Ensure the future of sustainable energy use;
- Provide local employment opportunities;
- Reduce CO₂ emissions and the nation's carbon footprint;
- The proposed development is supported by the Swartland Spatial Development Framework (SDF) that guides sustainable future development;
- The proposed development supports spatial sustainability in terms of LUPA and SPLUMA;
- The proposed development is supported by the Swartland Local Economic Development (LED);
- The proposed development is supported by the Western Cape Provincial Spatial Development Framework (WCPSDF) that guides sustainable future development in the Western Cape area.;
- The proposed development is supported by the Swartland Integrated Development Plan (IDP);
- The proposed development is supported by the national Development Plan 2030 (NDP)
- The development will not adversely affect the character of the area, due to its scale.

- **DISERABILITY**

The site is ideally located on municipal property, that is underutilised, with little to no environmental constraints. It is directly adjacent to the municipal substation, thereby avoiding the need for additional overhead powerlines.

There are also no restrictions on-site or in the title deed that would prohibit the development of the solar facility on the property.

The topography is also ideal, as the property is generally flat, with very little gradient.

It is therefore ideally located.

SECTION F: PUBLIC PARTICIPATION

The Public Participation Process ("PPP") must fulfil the requirements as outlined in the NEMA EIA Regulations and must be attached as Appendix F. Please note that If the NEM: WA and/or the NEM: AQA is applicable to the proposed development, an advertisement must be placed in at least two newspapers.

1. Exclusively for linear activities: Indicate what PPP was agreed to by the competent authority. Include proof of this agreement in Appendix E22.

N/A

2. Confirm that the PPP as indicated in the application form has been complied with. All the PPP must be included in Appendix F.

Yes, all PPP has been complied with.

Interested and Affected Parties (I&APs) have been and will be identified throughout the process. Landowners adjacent to the proposed site, relevant organs of state, organizations, ward councillors and the Local and District Municipality were added to this database. A complete list of organisations and individual groups identified to date is shown in **Appendix F**.

Public Participation will be conducted for the proposed development in accordance with the requirements outlined in Regulation 41 of the NEMA EIA Regulations 2014. The issues and concerns raised during the pre-Application phase will be dealt with in the Draft BAR phase of this application.

As such each subsection of Regulation 41 contained in Chapter 6 of the NEMA EIA Regulations 2014 will be addressed separately to thereby demonstrate that all potential Interested and Affected Parties (I&AP's) were notified of the proposed development.

R41 (2) (a):

R41 (2) (a) (i): Three site notices (2 x A2 and 1 x A3) were placed on the site boundary fence (one at the corner of the R315 and DR1156, one on the corner at the ESKOM substation, and one further up the DR1156 at an entrance gate to the property). A3 posters were placed at municipal offices in Malmesbury, at the Spar public notice board in Darling, and one on the kraal fences at the entrance to the community to the east of the site (see Appendix F4).

The posters contained all details as prescribed by R41(3) (a) & (b) and the size of the on-site poster was at least 60cm by 42cm as prescribed by section R41 (4) (a).

R41 (2) (a) (ii): N/A. There is no alternative site.

R41 (2) (b):

R41 (2) (b) (i): Initial Notifications have been sent to the landowner. **N/A, Applicant is the landowner**

R41 (2) (b) (ii): Initial notification letters was circulated to neighbouring landowners via letter drops and registered mail (Appendix F2).

R41 (2) (b) (iii): An initial notification letter was sent to the municipal Ward councillor in the Swartland Local Municipality.

R41 (2) (b) (iv): An initial notification letter was sent to the West Coast District Municipality.

R54 (2) (b) (v): Initial notification letter (please refer to **Appendix F3** for proof of notification letters sent) will be sent to the following organs of state having jurisdiction in respect of any aspect of the activity:

- Department of Agriculture
- Department of Water and Sanitation
- Heritage Western Cape
- CapeNature
- Swartland Local Municipality
- West Coast District Municipality

- Eskom

R41 (2) (c) (i): An advertisement was placed in the local newspaper, Swartland Joernaal (please refer to **Appendix F1** for proof of advertisement).

R41 (2) (d): N/A

R41 (6):

R41 (6) (a): All relevant facts in respect of the application were made available to potential I&AP's.

R41 (6) (b): I&AP's were given more than a 30-day registration and comment period on the proposed application during the first round of public participation.

R42 (a), (b), (c) and R43(2): A register of interested and affected parties was opened, maintained and is available to any person requesting access to the register in writing (please refer to **Appendix F** for the list of Interested and Affected Parties).

Please find attached in **Appendix F**:

- Proof of Notice boards, advertisements and notices that were sent out
- List of potential interested and affected parties (Appendix F5)
- Summary of issues raised by interested and affected parties (Appendix F6)

3. Confirm which of the State Departments and Organs of State indicated in the Notice of Intent/application form were consulted with.

- Department of Agriculture
- Department of Water and Sanitation
- BOCMA
- Heritage Western Cape
- CapeNature
- Central Karoo District Municipality
- Eskom
- BirdLife SA

4. If any of the State Departments and Organs of State were not consulted, indicate which and why.

None

5. if any of the State Departments and Organs of State did not respond, indicate which.

No comment has been received from Department of Agriculture to date. However, the Department did comment on the Section 53 LUPA Application. In their letter dated 05 December 2023, the Western Cape Department of Agriculture stated that they had no objection to the proposed application.

6. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated into the development proposal.

No issues of concern have been raised during the initial public participation period.

No other significant issues were raised during the Pre-Application Draft BAR public participation; however, some concerns were raised by the developers of Darling Green Solar facility on Erf 3778, Darling. These have been addressed in the Comments and Response Report (**Appendix F6**).

Note:

A register of all the I&AP's notified, including the Organs of State, and all the registered I&APs must be included in Appendix F. The register must be maintained and made available to any person requesting access to the register in writing.

The EAP must notify I&AP's that all information submitted by I&AP's becomes public information.

Your attention is drawn to Regulation 40 (3) of the NEMA EIA Regulations which states that *"Potential or registered interested and affected parties, including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in subregulation (1) prior to submission of an application but **must** be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority."*

All the comments received from I&APs on the pre -application BAR (if applicable and the draft BAR must be recorded, responded to and included in the Comments and Responses Report and must be included in Appendix F.

All information obtained during the PPP (the minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded) and must be included in Appendix F.

Please note that proof of the PPP conducted must be included in Appendix F. In terms of the required "proof" the following is required:

- a site map showing where the site notice was displayed, dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;
- in terms of the written notices given, a copy of the written notice sent, as well as:
 - if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);
 - if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);
 - if a facsimile was sent, a copy of the facsimile Report;
 - if an electronic mail was sent, a copy of the electronic mail sent; and
 - if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and
- a copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).

SECTION G: DESCRIPTION OF THE RECEIVING ENVIRONMENT

All specialist studies must be attached as Appendix G.

1. Groundwater

1.1.	Was a specialist study conducted?	YES	NO
1.2.	Provide the name and or company who conducted the specialist study.		
N/A			
1.3.	Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.		
<p>According to CapeFarmMapper, an underlying aquifer (West Coast aquifer), classified as minor with a medium-high vulnerability is located below the property.</p> <p>The proposed development is not expected to have any substantial impact on this aquifer.</p>			
1.4.	Indicate the depth of groundwater and explain how the depth of groundwater and type of aquifer (if present) has influenced your proposed development.		
According to CapeFarmMapper, the groundwater depth is between 7.97mbgl.			

2. Surface water

2.1.	Was a specialist study conducted?	YES	NO
2.2.	Provide the name and/or company who conducted the specialist study.		
Dr. Dirk van Driel – Watsan Africa			
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		
<p>A non-perennial river runs west to north-east through the property. The drainage line is not identified on the DWS or NFEPA overlays, but is evident on Google Earth and from site visit. The drainage line is however, identified as both a Terrestrial and a Wetland CBA on the Western Cape Biodiversity Spatial Plan (BSP).</p> <p>According to the Freshwater Impact Assessment (Appendix G1), the drainage lines and their tributaries are identified as Restorable Ecological Support Areas. The drainage lines have been engineered and tilled. It would take a major effort to restore these drainage lines to assume its former ecological functioning.</p> <p>No other watercourses or wetlands were identified on the property.</p> <p>The development footprint of the proposed development has taken the drainage line and the CBAs into consideration, and avoided these areas (see Figure 4 and 5 below).</p>			

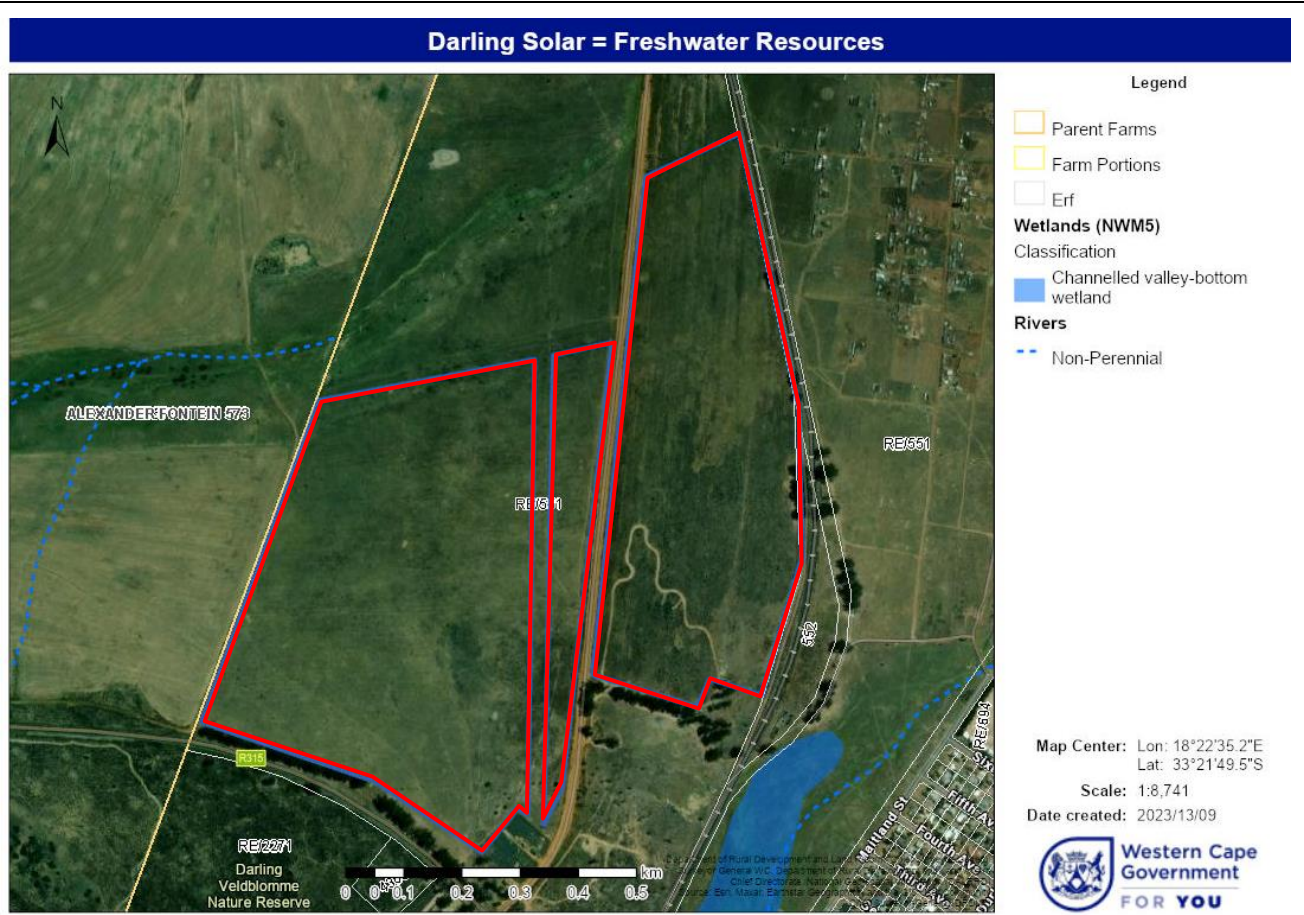


Figure 4: CapeFarmMapper image of the watercourses around the site (red polygons).

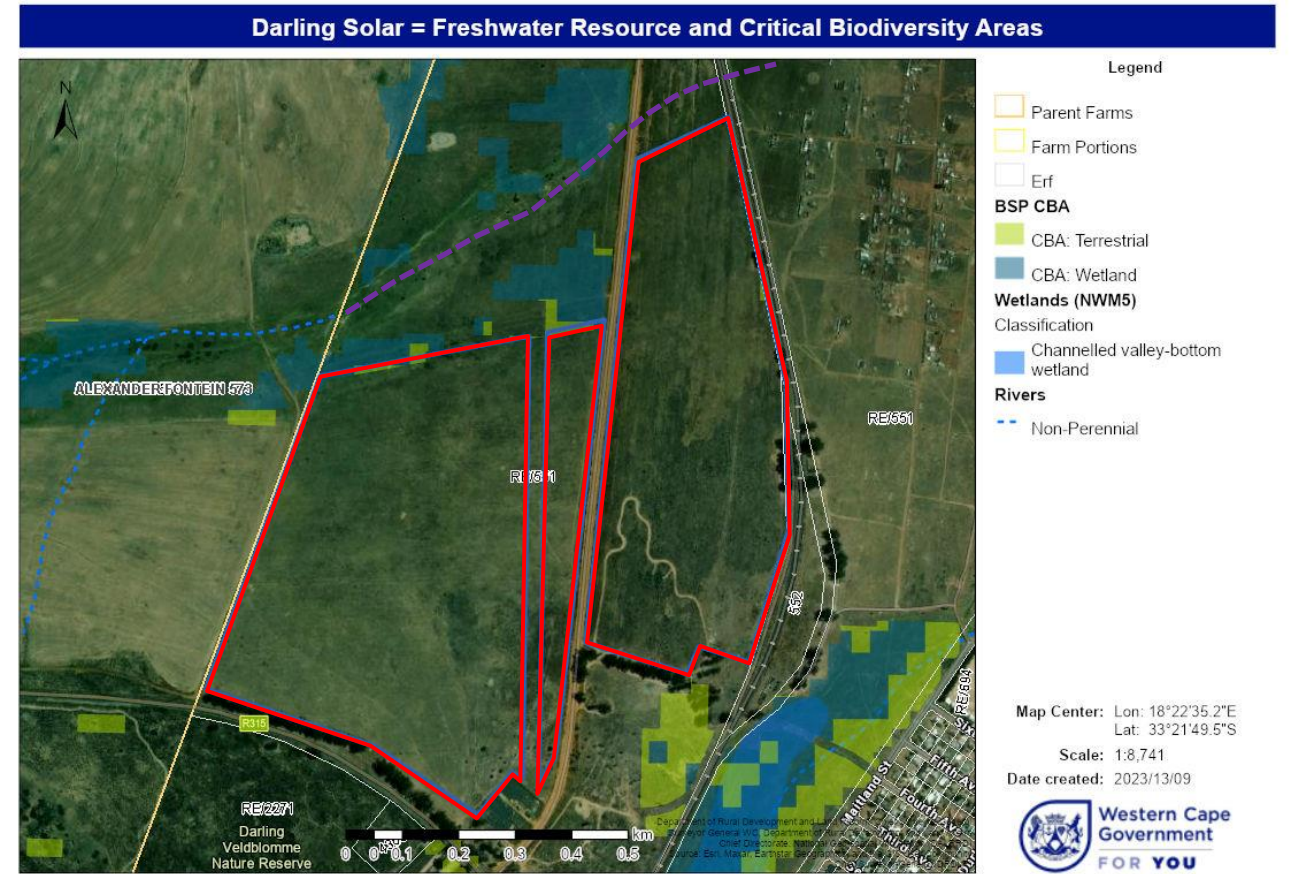


Figure 5: CapeFarmMapper image of the watercourses and Critical Biodiversity Area around the site (red polygons). The drainage lines identified in the Freshwater Assessment is indicated by the purple dashed line.

3. Coastal Environment

3.1.	Was a specialist study conducted?	YES	NO
3.2.	Provide the name and/or company who conducted the specialist study.		
N/A			
3.3.	Explain how the relevant considerations of Section 63 of the ICMA were taken into account and explain how this influenced your proposed development.		
N/A			
3.4.	Explain how estuary management plans (if applicable) has influenced the proposed development.		
N/A			
3.5.	Explain how the modelled coastal risk zones, the coastal protection zone, littoral active zone and estuarine functional zones, have influenced the proposed development.		
N/A			

4. Biodiversity

4.1.	Were specialist studies conducted?	YES	NO
4.2.	Provide the name and/or company who conducted the specialist studies.		
Peet Botes – PB Consult			
4.3.	Explain which systematic conservation planning and other biodiversity informants such as vegetation maps, NFEPA, NSBA etc. have been used and how has this influenced your proposed development.		
<p>In accordance with the 2018 Vegetation map of South Africa, Lesotho and Swaziland (Mucina & Rutherford, 2006), the proposed footprint(s) would historically have been covered in one broad vegetation type, namely Swartland Granite Renosterveld, a vegetation type classified as “Endangered” in terms of the NEM: BA “revised <i>national list of ecosystems that are threatened and in need of protection</i>” (GN 2747, November 2022)(see Figure 6 below).</p> <p>A terrestrial CBA was identified on the property; however, the development footprint avoids the CBA (see Figure 6 below).</p>			

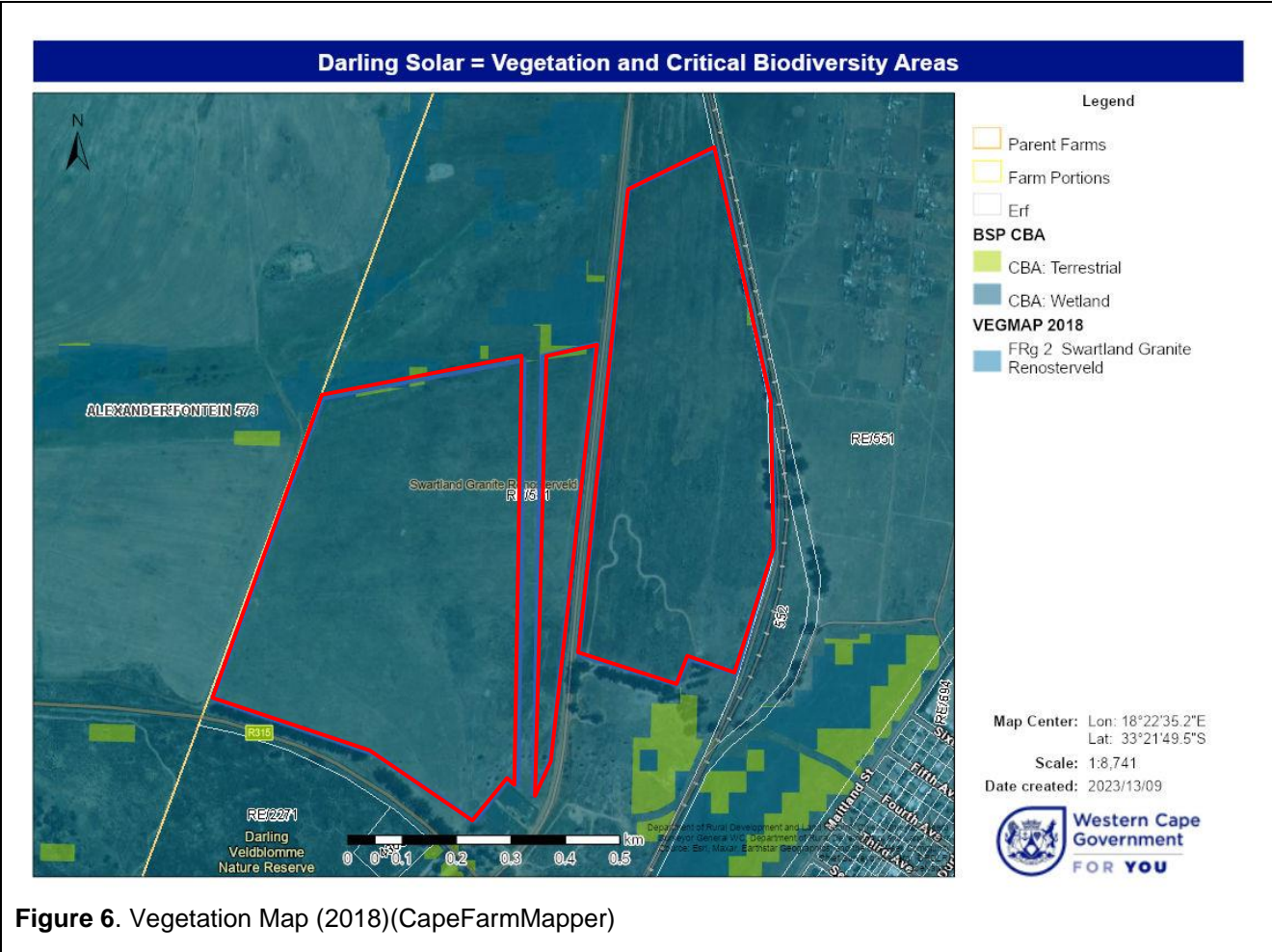


Figure 6. Vegetation Map (2018)(CapeFarmMapper)

4.4.	Explain how the objectives and management guidelines of the Biodiversity Spatial Plan have been used and how has this influenced your proposed development.
<p>According to the Biodiversity Impact Assessment (Appendix G2), according to the 2017 Western Cape Biodiversity Spatial Plan (WCBSP) (CapeNature, 2017), the property overlaps a Critical Biodiversity Area (CBA) (see Figure 5 above), however, the development footprint has been placed to avoid any CBAs.</p>	
4.5.	Explain what impact the proposed development will have on the site specific features and/or function of the Biodiversity Spatial Plan category and how has this influenced the proposed development.
<p>According to the Biodiversity Impact Assessment (Appendix G2), according to the 2020, DEA Land Cover (9-class) map of South Africa, the study area is considered cultivated land used for the cultivation of commercial annual crops on drylands. This was confirmed by the site visit. It also confirmed that the study area (and its immediate surroundings) does not support any remaining natural veld of any consequence.</p> <p>Historical Google images show that the site was already cultivated during 2003 (the earliest historical Google image covering the terrain) and were physically cultivated (ploughed) at least up to 2014. Since then, the site seems to have laid fallow, but was used for livestock grazing. At the time of the site visit the western portion of the site was used for grazing by horses.</p> <p>The site visit confirmed that the study area had been transformed as a result of historical cultivation practices over a long period of time. No remaining natural veld of any significance remains anywhere within the study area. Even though the veld had been lying fallow for approximately 9 years the only indigenous plant species observed where a few hardy pioneer shrubs and bulb species, species often associated with disturbed renosterveld.</p>	



Figure 7. General view of the site, showing current condition of the vegetation and that the site is still utilised for livestock grazing.

It is common knowledge that Renosterveld, once cultivated, will not restore itself for many generations (if ever). In this case the indigenous vegetation had been transformed into a low weedy herbaceous landscape as a result of agriculture and associated activities. In addition, the only remaining natural veld in close proximity is small patch of veld to the south of the property (across the R315), protected as part of the Darling Local Nature Reserve. Even the small seasonal drainage line to the north of the property had been severely degraded (probably ploughed and planted during times past) over time and does not support any clear riparian vegetation.

The remaining vegetation throughout the study area, was reduced to a weedy herbaceous bottom layer dominated by weedy widespread species or disturbance indicator species such as *Trifolium repens* (white clover), weedy asteraceous species (e.g., *Cotula turbinata*, *Chrysocoma ciliata* etc.) and other weedy herbs such as *Indigofera* cf. *digitata*, *Echium vulgare*, *Limonium sinuatum*, *Rumex* cf. *acetosella* (Boksuring), *Silene gallica* and *Trachyandra flexifolia*. A few hardy bulb species were observed, such as *Ornithogalum thyrsoides*, *Albuca* cf. *flaccida*, *Oxalis* species *Pterygodium orobanchoides* and *Moraea flaccida* (tulp).

On the edges of the study area, and scattered throughout the site, a number of hardy pioneer shrub species and disturbance indicator species were occasionally observed. They were usually dominated by *Galenia africana* (Kraalbos), but also included other hardy species such as *Aspalathus acuminata* (occasional large bushes observed), *Aspalathus hispida* (rarely observed), *Asparagus rubicundus*, *Eriocephalus africanus*, *Lycium ferocissimum*, the climber *Cissampelos capensis* and *Searsia laevigata*.

No red-listed species, no species protected in terms of NEM: BA and no species protected in terms of the NFA was observed.

According to the NEMA EIA screening tool report the relative plant species sensitivity is considered as of High Sensitivity, because the original vegetation type is classified as endangered and specifically because of the potential that quite an extensive number of sensitive plants might occur in this area (or is known to have a distribution within the broader area or this vegetation type).

A list of these plants is given within the screening report. The list includes 20 Sensitive species (not named in the screening report).

Unfortunately, Erf 511 had been under cultivation (dry-land commercial annual crops) over a long period of time. It is common knowledge that Renosterveld, once cultivated, will not restore itself for many generations (if ever). In this case the indigenous vegetation had been transformed into a low weedy herbaceous landscape as a result of agriculture and associated activities. Only a few hardy or indigenous pioneer species had managed to survive the continual impact of agriculture, altered fire regimes. None of the species listed in the screening report were observed.

Because of the degraded state of the study area, it is considered unlikely that the proposed solar facility will result in any significant additional impact on the plant species sensitivity theme. Also because of the degraded status of the site the Plant Species theme for this study area should be rated as **Low Sensitive**.

The Biodiversity Impact Assessment (**Appendix G2**) concluded that the status of the vegetation within the study area is considered transformed (old agricultural land) and reduced to a weedy herbaceous bottom layer dominated by weeds or widespread species or disturbance indicator species. On the edges of the study area, and scattered throughout the site, a number of hardy pioneer shrubs species were occasionally observed (usually dominated by disturbance indicator species such as *Galenia africana*).

The study area does not contain any intact natural vegetation of any significance and had been cultivated over a long period of time. Renosterveld is unlikely to restore itself (for many generations, if ever), even with active rehabilitation. Rehabilitation would only be possible if the study area is actively replanted and re-seeded with indigenous vegetation from surrounding intact veld and then protected as a conservation area. In this case, rehabilitation and conservation of the site is not considered a viable option as there would be many other areas in better condition more worthy of conservation efforts.

4.6.	If your proposed development is located in a protected area, explain how the proposed development is in line with the protected area management plan.
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N/A. The proposed development is not located within a Protected Area. However, the Darling Veldblomme Local Nature Reserve is located adjacent to the site, across the R315.

4.7.	Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development.
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The potential presence of fauna on the site required that a Biodiversity Impact Assessment, including an assessment on the fauna. The assessment found no limiting factors, or the need for a site or layout amendment. It did identify “no-go” areas (CBAs), but these are outside of the development footprint.

5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.

No geographical aspects are expected to be significantly impacted by the proposed development.
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6. Heritage Resources

6.1.	Was a specialist study conducted?	YES	NO
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6.2.	Provide the name and/or company who conducted the specialist study.
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N/A. A Heritage Notice of Intent to Develop was submitted to Heritage Western Cape. Final comment was received (dated 26 September 2023)(see Appendix E1). The Final comment states:

“This matter was discussed at the Heritage Officers Meeting held on 26 September 2023.

You are hereby notified that, since there is no reason to believe that the proposed solar facility on the remainder of Erf 551, off the R315 Road, Darling, will impact on heritage resources. No further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required.”

6.3.	Explain how areas that contain sensitive heritage resources have influenced the proposed development.
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N/A

7. Historical and Cultural Aspects

Explain whether there are any culturally or historically significant elements as defined in Section 2 of the NHRA that will be affected and how has this influenced the proposed development.

N/A

8. Socio/Economic Aspects

8.1. Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.

According to the Socio-economic Impact Assessment (**Appendix G5**), in 2020 the Swartland population of 147 225 people represented 39 929 households with an average household size of 3.5 people. Darling has 14 828 residents representing 10% of the Swartland population.

The average annual growth rate of the Swartland population is calculated as 3.3%. The population is fairly equally distributed in terms of gender with 50.4% females and 49.6% males. Of note are the 28.5% female-headed households whilst 39.2% of households have partners who are married or live as married partners. Thus, 60% of households are single parents in one way or another (never married, widowed, separated or divorced). The population of the Swartland is relatively young as the Youth (0-14) represents 25%, the working-age population (15 – 64) represents 69.1% and the Elderly (65+) 5.9% of the total population.

According to StatsSA (2011) half (49.8% or 14 603) of the households within the municipal area earned less than R3 500 per month and qualify for subsidized housing and indigent services provision.

More than half (51%) of the working-age (15-64) Swartland population are employed, 39% are not economically active while 8% are unemployed and 2% are discouraged work-seekers (StatsSA 2011).

In 2017 the Swartland unemployment rate of 10.4% was slightly less than that of the West Coast District unemployment rate of 11.1% (StatsSA) and the youth unemployment rate was 17.9%.

The decrease in employment opportunities in agriculture, forestry and fishing will most likely cause discomfort for the 50.1% of the workforce that is low-skilled and the 34.6% of the workforce that is semi-skilled. The growth in the secondary economic sector such as wholesale, retail and trade and tertiary economic sectors such as financial and business services will most likely favour the 15.2% of the population that are skilled.

The competitive strengths of the region reside in its food value chain (processing), including a stable Agricultural sector producing for the export and local market, as well as associated agricultural industries. However, a reliable and constant power supply is key for the agri-industrial activities.

In Swartland, basic services are accessed by the 90.9% households that live in formal dwellings and those not so fortunate:

- Water (piped water inside the dwelling): 80.6%.
- Energy / Electricity for lighting: 97.8%
- Sanitation: Flush toilet connected to sewerage: 77.3%
- Weekly refuse removal: 76.1%

Whilst forty four percent (43.6%) of households own and nearly nine percent (8.6%) of households pay off their homes, 28% of households rent their homes.

The Swartland has the second largest economy in the WCD, with a regional gross domestic product (GDP) of R7.4 billion in 2016 with Malmesbury comprising the economic hub. More than three quarters (77.5%) of the contribution to Swartland's economy comes from the five main sectors. These are manufacturing (R1 689.0 million or 22.9%), wholesale and retail, catering and accommodation (R1 289.2 million or 17.5%) and agriculture, forestry and fishing (R1 173.4 million or 15.9% in 2016). Government services are the fourth biggest contributor (R851.0 million or 11.5%) whilst finance, insurance, real estate and business services (R704.7 million or 9.6%) follows as the fifth biggest contributor as Swartland is renowned as a sought after tourist destination.

Though income disparity, and hence the poverty rate is high, the community is stable and resilient.

8.2.	Explain the socio-economic value/contribution of the proposed development.
<p>According to the Socio-economic Impact Assessment (Appendix G5), direct positive impacts include:</p> <ul style="list-style-type: none"> • Generating employment: During construction, the generation of ±52 jobs and a wage bill of ±R6 million over 10 months and R5.5 million benefiting the locals, providing broadly 17 unskilled, 32 semi-skilled and 3 skilled people employment. During operations, the generation of ±10 jobs, and a wage bill of R15.5 million for the first ten years of which R12 million will benefit locals and R1.6 million per annum is spend. - During decommissioning, the creation of a similar number of jobs (±52) with a wage bill of R2.5 million over 4 months and R1 million benefitting the locals, providing a similar number of unskilled, semi-skilled and skilled local people employment opportunities and contributing <1% to the Swartland GDP. • Contributing to the Swartland GDP: <ul style="list-style-type: none"> - During construction, operations and decommissioning the facility contributes <1% to the Swartland GDP mainly from sales generated from the wage bill, materials and services, and selling R11.2 million's electricity. • Generating work within <1km proximity, during operations. • Enhancing supply of bulk services as 19.9MW and 6500 households are provided with electricity, during operations. 	
8.3.	Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.
N/A. See 8.2 above.	
8.4.	Explain whether the proposed development will impact on people's health and well-being (e.g. in terms of noise, odours, visual character and sense of place etc) and how has this influenced the proposed development.
<p>The proposed development is not expected to have any additional significant negative impacts on people's health and well-being. There are no additional noise or odour impacts expected from a development of this nature.</p> <p>The development will however have an impact on the visual character of the area, and the agricultural potential of the site.</p> <p>Visual: According to the Visual Impact Assessment (Appendix G3), the area of the proposed solar storage facility is a flat to gently undulating field situated over on the northwestern outskirts of Darling. The site is currently used for grazing of sheep and horses and also allowed a beautiful wildflower display in spring. Parts of the site are also a wetland. The area is located on the edge of the foothills west of Darling and can be easily seen when driving into the town from the west/Yzerfontein side. There are no significant historic homesteads overlooking the site with <i>Alexanderfontein</i> being the nearest. An old double avenue of gum trees lines the southern boundary along the R307 partially obscuring the view from this major road.</p> <p>According to the Visual Impact Assessment (Appendix G3), the proposed development will have a high impact on the landscape causing noticeable change to the visual environment. In terms of visibility, the development has moderate–high visual exposure; moderate–high visual absorption capacity; low compatibility; and moderate–high visibility.</p> <p>In summary, the nature of the impact is as follows: The development's visual impact has district extent, long-term duration, medium intensity, definite probability, and medium significance on the landscape.</p>	

Agriculture:

According to the Agricultural Statement (**Appendix G4**), the assessed area is considered to be below the threshold for needing to be conserved as agricultural production land because of the limitations on its cropping potential.

The production potential of the land is limited to only being suitable as grazing land, and there is no particular scarcity of such land in the country, in contrast to arable land, which is very scarce. The use of this land for renewable power generation will cause minimal loss of agricultural production potential in terms of national food security. Due to the fact that the energy facility will not occupy scarce, viable cropland, the overall negative agricultural impact of the development (loss of future agricultural production potential) is assessed here as being of low significance and as acceptable.

SECTION H: ALTERNATIVES, METHODOLOGY AND ASSESSMENT OF ALTERNATIVES

1. Details of the alternatives identified and considered

1.1. Property and site alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred property and site alternative.

The proposed property, Portion of Erf 551, Darling, is the only property considered, since it is owned by the municipality and is directly adjacent to the municipal substation, thereby not requiring any additional overhead powerlines.

Provide a description of any other property and site alternatives investigated.

An initial site was considered by the municipality. This site is also on Portion of erf 551, Darling, but was located completely on the western side of the dirt road DR1156.

It was firstly considered since the entire development would be concentrated in one portion. However, the development footprint would overlap the Terrestrial and Aquatic Critical Biodiversity Areas on the site (see Figure 9) and the drainage line running through the site. Creating a meaningful buffer around these CBAs to avoid impacting them would have lost too much development area for the solar panels and therefore generating power.

This was therefore not feasible and was not further considered.



Figure 8. Google Earth image of the Alternative site.

Darling Solar - Alternative Site

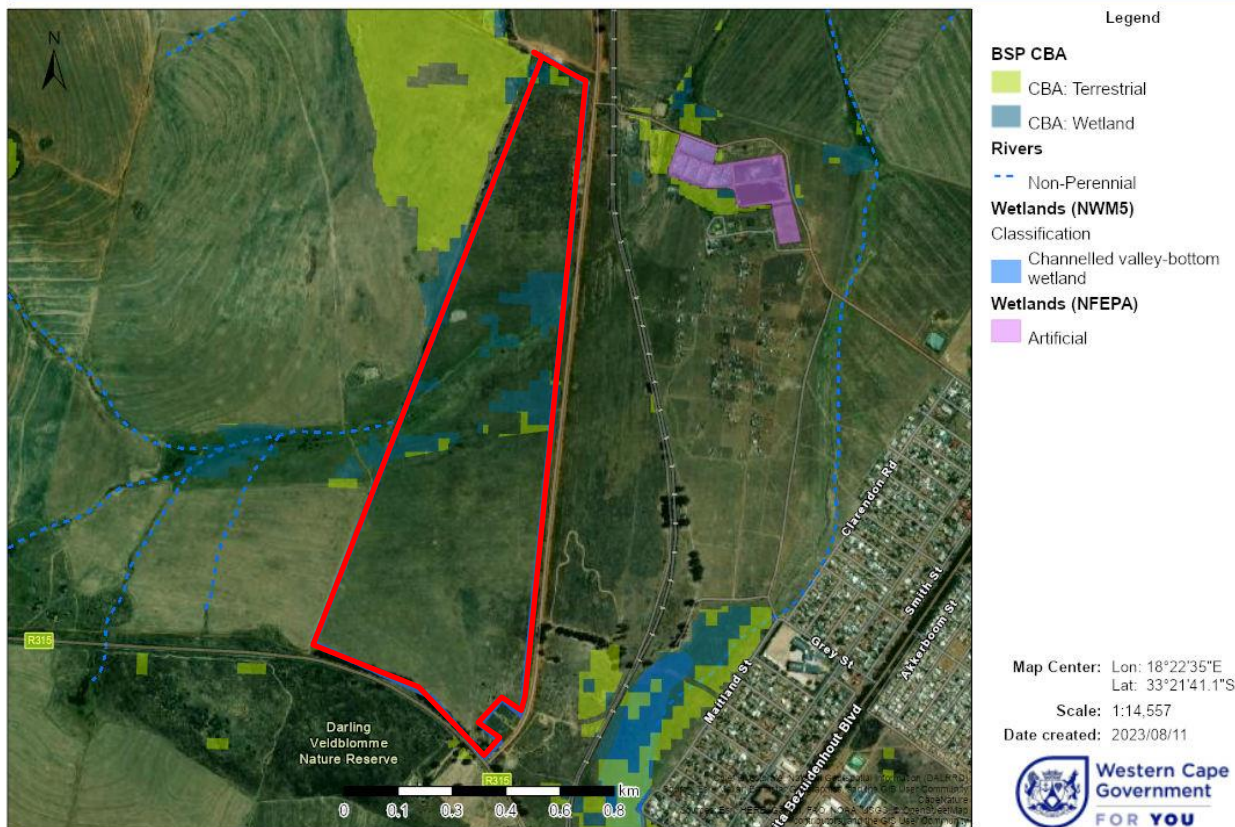


Figure 9. Critical Biodiversity Areas within the Alternative site.

Provide a motivation for the preferred property and site alternative including the outcome of the site selectin matrix.

The preferred site avoids the Critical Biodiversity Areas located on the property. To provide sufficient area for the solar panels and to provide sufficient generating capacity, these CBAs would need to developed over and therefore lost. The impact on the CBAs would therefore be Very High. Providing a buffer around the CBAs would therefore not provide sufficient development area and therefore generating capacity.

Provide a full description of the process followed to reach the preferred alternative within the site.

Areas within the property that were identified to not overlap any CBAs, wetlands or drainage lines, and that were also previously impacted by cultivation were considered for development. The preferred Alternative was therefore identified.

Provide a detailed motivation if no property and site alternatives were considered.

N/A

List the positive and negative impacts that the property and site alternatives will have on the environment.

Preferred Site Alternative:

- Avoids impacting on the Terrestrial and Aquatic Critical Biodiversity Areas
- Avoids impacting on the drainage line running through the property
- Located within previously disturbed land
- Provides sufficient area for solar panels to provide sufficient generating capacity.

1.2. Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred activity alternative.

No other activity alternative has been investigated.

Provide a description of any other activity alternatives investigated.

No other activity alternatives have been investigated, as this is the only viable option for providing additional, renewable, power generation for the municipality.

Provide a motivation for the preferred activity alternative.

N/A

Provide a detailed motivation if no activity alternatives exist.

N/A

List the positive and negative impacts that the activity alternatives will have on the environment.

N/A

1.3. Design or layout alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts

Provide a description of the preferred design or layout alternative.

Two design alternatives have been considered by the Swartland Municipality, (1) a Solar PV array facility, and (2) a Container Solar Facility.

The preferred Alternative is the Solar PV array:

The facility will comprise Solar PV generation, lithium battery storage and electrical reticulation equipment on approximately 54ha. The modules will be mounted on a table array anchored to the ground utilising rammed or planted steel support posts. A concrete foot piece secured to a steel pen driven into the ground will be used where ramming does not prove feasible. The maximum height of the solar array tables in operation would be approximately 5m and would allow sufficient ground clearance for the free flow of surface water underneath the panels.

The facility and associated infrastructure will be accessed via existing access road. A 5m management track will surround each block of photovoltaic arrays. These single-track management roads will be used as access roads to service and maintain structures and to serve as fire breaks. On full commissioning of the facility, any access points to the site which are not required during operational phase will be closed.

The proposed PV Plant of approximately 54ha (solar panels) will generate a projected power peak (electricity) of approximately 19.9 MWp. Solar PV technology is a method of generating electrical power by converting solar radiation using semiconductors through a process known as the photovoltaic effect. It is not the heat required from the sun but the amount of irradiation available that allows for electrical energy to be generated. PV Panel technology has the following components which consist of:

- PV Cell: A basic PV device, which generates electricity when exposed to solar radiation. All PV cells produce Direct Current (DC) electricity;
- PV Module or Panel: The smallest complete assembly of interconnected PV cells. The modules are typically mounted in a lightweight
- PV Array: A group of PV panels connected together is termed as PV Array. An interconnected system of PV modules that function as a single electricity producing unit. The proposed PV panels are approximately 2.3m in height and 1.3m in width (later confirmed). These panels will be installed on single axis tracking mounting structures.
- Mounting Structure: The single axis tracking mounting structure is approx. 4.5 m in height. Total height is approximately 5m depending on the specific ground clearance allowed below the structure and make and model of the PV array secured steel posts, planted in the ground, providing structural support for the PV array. Each PV Array table is approximately 12m in length and 4.5m series to make a Solar Array tab typically varies from 260-360m. The rows are then arranged in a matrix throughout the Solar field with all energy generated being consolidated at the electrical reticulation points.

The Alternative design is the Container Solar facility:

Solar containers, also known as solar power containers or solar farms in a box, are self that house solar power generation equipment within a standardized are designed to make solar energy installations more modular, portable, and easy to deploy.

Provide a description of any other design or layout alternatives investigated.

The Alternative design is the Container Solar facility:

Solar containers, also known as solar power containers or solar farms in a box, are self that house solar power generation equipment within a standardized are designed to make solar energy installations more modular, portable, and easy to deploy.

Inside the container you typically find solar panels, inverters, batteries (if applicable), and the necessary control and monitoring systems.

The container's roof or sides are equipped with solar panels that capture sunlight and convert it into direct current (DC) electricity using photovoltaic (PV) cells. These panels are designed to efficiently harness sunlight and generate electricity even in challenging environmental conditions. The DC electricity generated by the solar panels needs to be converted into alternating current (AC), which is the type of electricity used in most buildings and for various appliances. Inverters inside the container perform this conversion. They ensure that the electricity produced is suitable for immediate use or for feeding into the grid.

Some solar containers also incorporate energy storage systems, usually in the form of batteries. These batteries store excess electricity generated during sunny periods so that it can be used during cloudy periods or at night when solar generation is not possible. This enhances the stability and reliability of the energy supply. Solar containers are equipped with sophisticated control systems that manage the operation of the solar panels, inverters, and batteries. These systems optimize energy production, monitor system health, and can be remotely controlled and monitored. This remote management capability is particularly useful for maintenance and troubleshooting.

Solar containers offer a flexible and relatively quick way to set up solar power installations. They can be transported to various locations, making them suitable for temporary or remote power needs, such as disaster relief, events, construction sites, or off-grid applications. Additionally, they can be integrated into the existing power grid, feeding excess energy back to the grid and potentially earning revenue through net metering or other incentive programs.

In essence, solar containers provide a convenient and modular solution for generating clean energy from sunlight. They are designed to simplify the process of deploying solar power systems and can contribute to reducing reliance on traditional fossil fuels while promoting renewable energy adoption.

Provide a motivation for the preferred design or layout alternative.

The Solar PV array is the preferred design alternative, as this is the typical technology used. The visual impact from the Container facility is expected to be higher than with the solar PV array.

Provide a detailed motivation if no design or layout alternatives exist.

N/A

List the positive and negative impacts that the design alternatives will have on the environment.

N/A

1.4.	Technology alternatives (e.g., to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
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Provide a description of the preferred technology alternative:

No viable technology alternatives were assessed. Other renewable energy sources such as concentrated solar power and wind turbines were not considered feasible or appropriate for the development and site.

Provide a description of any other technology alternatives investigated.

No viable technology alternatives were assessed.

Provide a motivation for the preferred technology alternative.

-

Provide a detailed motivation if no alternatives exist.

List the positive and negative impacts that the technology alternatives will have on the environment.

See above

1.5. Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred operational alternative.

No viable operational alternatives were assessed.

Provide a description of any other operational alternatives investigated.

No viable operational alternatives were assessed.

Additional power from other solar facilities in Darling, including the Darling Green Facility (DFFE EA Ref: 14/12/16/3/3/1/2448) located on Erf 3778, Darling, is also considered, However, this would still not be sufficient for the municipalities needs, and the proposed Darling Solar facility (this application) will still be required.

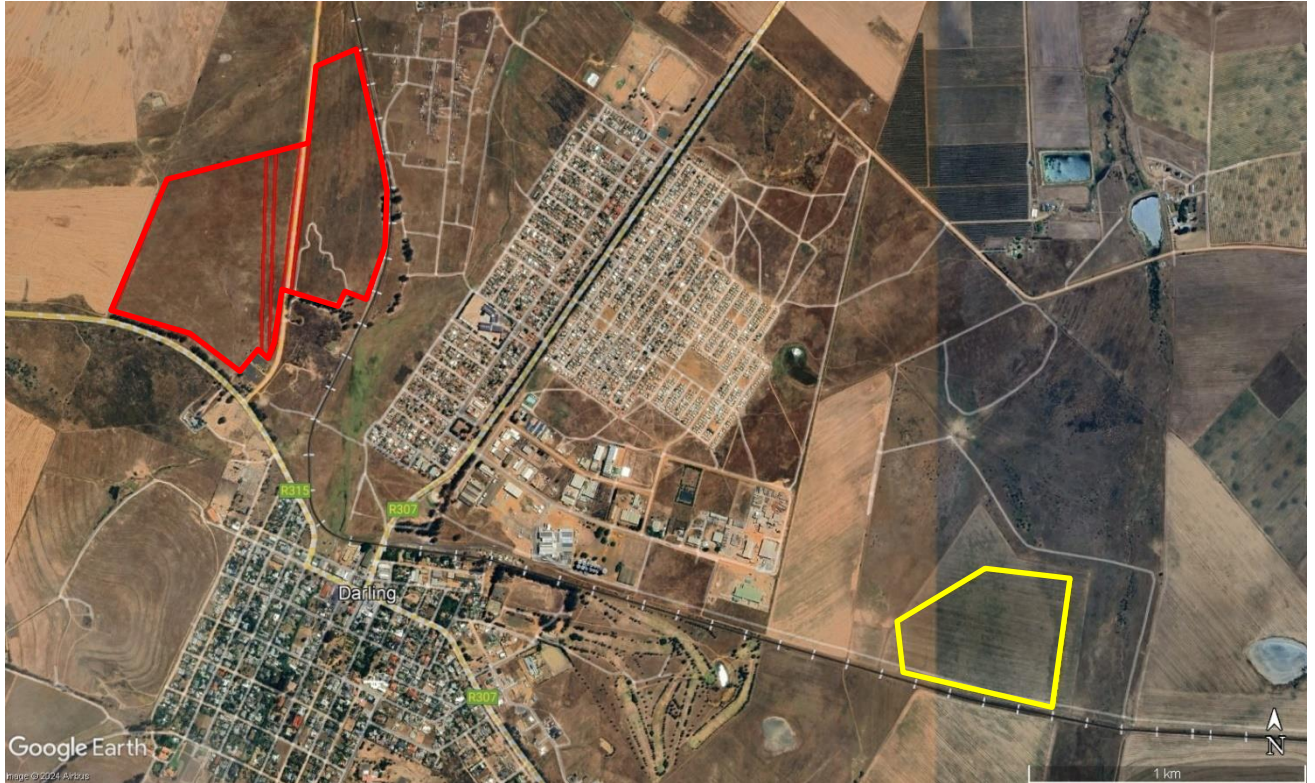


Figure 10. Google Earth image showing the location of the approved Darling Green PV facility (yellow polygon) on Erf 3778, Darling.

According to the Motivational Report (**Appendix L**), the Swartland SDF makes provision for the development and expansion of solar facilities and since Darling already has an approved solar facility on Erf 3778 (which will be implemented within the next year or so), the proposal can be seen as an extension of the approved solar facility. The proposal aligns seamlessly with the Swartland SDF guidelines and recommendations for future development in the region.

Provide a motivation for the preferred operational alternative.

No viable operational alternatives were assessed.

Provide a detailed motivation if no alternatives exist.

No viable operational alternatives were assessed.

List the positive and negative impacts that the operational alternatives will have on the environment.

N/A

1.6.	The option of not implementing the activity (the 'No-Go' Option).
Provide an explanation as to why the 'No-Go' Option is not preferred.	
<p>This is the option of not developing the solar PV facility.</p> <p>This would mean that no-development would take place and the proposed site will remain as is.</p> <p>Although this option would result in no potential negative environmental impacts, the socio-economic benefits from implementing the activity would not be achieved. The provision of additional, renewable energy, reducing the impact of loadshedding on the economy of Darling will not be realised.</p> <p>It would also mean that no new jobs (temporary jobs during the construction phase, and permanent jobs during the operational phase) would be created.</p> <p>The no-go option would only have been recommended if it were found that the development might potentially cause substantial detrimental harm to the environment.</p> <p>According to the Biodiversity Assessment (Appendix G2), Erf 511 is municipal commonage used for agriculture. These agricultural activities are likely to be ongoing, which mean that agricultural impacts will continue. Renosterveld is unlikely to be restored itself, even with active rehabilitation.</p> <p>According to the Socio-economic Impact Assessment (Appendix G5), the No-Go Alternative would lose an opportunity for South Africa to supplement its current energy needs with clean, renewable energy and achieve its targets. Not reaching its targets and being one of the highest per capita producers of carbon emissions in the world (80% emission for energy use vs. 49% for developing countries) this alternative represents a negative impact socially and environmentally.</p> <p>Furthermore, the No-Go Alternative will also:</p> <ul style="list-style-type: none"> a) Result in a loss of employment opportunities generated during construction and operations. b) Result in no social investment to support specific social (improvement of education in scarce subjects) and economic (enhancing small businesses) initiatives as identified by the specialist studies and developers. <p>This alternative represents a negative social cost particularly for the local community.</p>	
1.7.	Provide an explanation as to whether any other alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist.
No other feasible alternatives, besides those described above, have been assessed.	
1.8.	Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.
The preferred alternative is the solar PV array on the site/layout within the property as described in Figure 2. This alternative avoids the CBA and freshwater resources on the property.	

2. "No-Go" areas

Explain what "no-go" area(s) have been identified during identification of the alternatives and provide the co-ordinates of the "no-go" area(s).
No specific "no-go" areas were identified from a botanical and freshwater perspective, except for the CBA area and drainage line to the north of the development footprint (see figure 11 below).

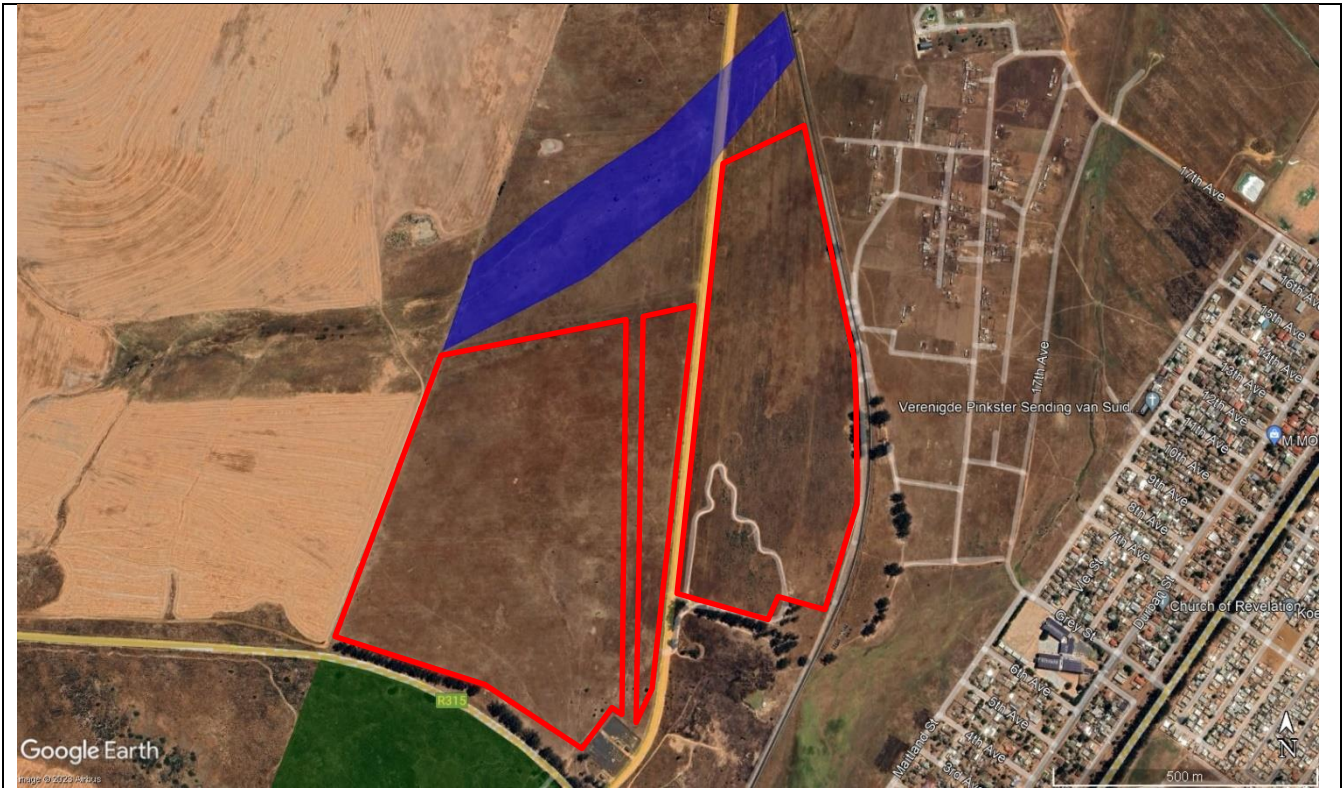


Figure 11. Google Earth image showing the “no-go areas” (indicated by the blue polygon).

3. Methodology to determine the significance ratings of the potential environmental impacts and risks associated with the alternatives.

Describe the methodology to be used in determining and ranking the nature, significance, consequences, extent, duration of the potential environmental impacts and risks associated with the proposed activity or development and alternatives, the degree to which the impact or risk can be reversed and the degree to which the impact and risk may cause irreplaceable loss of resources.

Please refer to Appendix J.

4. Assessment of each impact and risk identified for each alternative

Note: The following table serves as a guide for summarising each alternative. The table should be repeated for each alternative to ensure a comparative assessment. The EAP may decide to include this section as Appendix J to this BAR.

Alternative:	
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	
Nature of impact:	
Extent and duration of impact:	
Consequence of impact or risk:	
Probability of occurrence:	
Degree to which the impact may cause irreplaceable loss of resources:	
Degree to which the impact can be reversed:	
Indirect impacts:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be avoided:	
Degree to which the impact can be managed:	
Degree to which the impact can be mitigated:	

Proposed mitigation:	
Residual impacts:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	
OPERATIONAL PHASE	
Potential impact and risk:	
Nature of impact:	
Extent and duration of impact:	
Consequence of impact or risk:	
Probability of occurrence:	
Degree to which the impact may cause irreplaceable loss of resources:	
Degree to which the impact can be reversed:	
Indirect impacts:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be avoided:	
Degree to which the impact can be managed:	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Residual impacts:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	
Nature of impact:	
Extent and duration of impact:	
Consequence of impact or risk:	
Probability of occurrence:	
Degree to which the impact may cause irreplaceable loss of resources:	
Degree to which the impact can be reversed:	
Indirect impacts:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be avoided:	
Degree to which the impact can be managed:	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Residual impacts:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	

SECTION I: FINDINGS, IMPACT MANAGEMENT AND MITIGATION MEASURES

1.	Provide a summary of the findings and impact management measures identified by all Specialist and an indication of how these findings and recommendations have influenced the proposed development.
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Freshwater Assessment:
 According to the Freshwater Assessment (**Appendix G1**), the environmental risks are small, even negligible, because of the low-impact nature of the project.

The construction and operation of the solar energy plant is because of its nature a low-impact project pertaining the aquatic environment.

The mitigating measures are readily implementable and should have positive results. The impacts assessment does not indicate any prohibition.

- Prevent loose soil and sediments from moving down the drainage line along with stormwater.
- Prevent litter and rubbish entering the drainage line

The project should go ahead.

Biodiversity Assessment:
 According to the Biodiversity Impact Assessment (**Appendix G2**), the status of the vegetation within the study area is considered transformed (old agricultural land) and reduced to a weedy herbaceous bottom layer dominated by weeds or widespread species or disturbance indicator species. On the edges of the study area, and scattered throughout the site, a number of hardy pioneer shrubs species were occasionally observed (usually dominated by disturbance indicator species such as Galenia africana).

The study area does not contain any intact natural vegetation of any significance and had been cultivated over a long period of time. Renosterveld is unlikely to restore itself (for many generations, if ever), even with active rehabilitation. Rehabilitation would only be possible if the study area is actively replanted and re-seeded with indigenous vegetation from surrounding intact veld and then protected as a conservation area. In this case, rehabilitation and conservation of the site is not considered a viable option as there would be many other areas in better condition more worthy of conservation efforts.

There are no specific sensitive areas within the study area.

Visual:
 According to the Visual Impact Assessment (**Appendix G3**), the proposed development will have a high impact on the landscape causing noticeable change to the visual environment. In terms of visibility, the development has moderate–high visual exposure; moderate–high visual absorption capacity; low compatibility; and moderate–high visibility.

In summary, the nature of the impact is as follows: The development’s visual impact has district extent, long-term duration, medium intensity, definite probability, and medium significance on the landscape.

Agriculture:
 According to the Agricultural Statement (**Appendix G4**), the assessed area is considered to be below the threshold for needing to be conserved as agricultural production land because of the limitations on its cropping potential.

The production potential of the land is limited to only being suitable as grazing land, and there is no particular scarcity of such land in the country, in contrast to arable land, which is very scarce. The use of this land for renewable power generation will cause minimal loss of agricultural production potential in terms of national food security.

Due to the fact that the energy facility will not occupy scarce, viable cropland, the overall negative agricultural impact of the development (loss of future agricultural production potential) is assessed here as being of low significance and as acceptable.

Socio-economic:

According to the Socio-economic Impact Assessment (**Appendix G5**), the proposed development has the following positive and negative impacts:

The direct positive impacts include:

- Generating employment:
- During construction, the generation of ±52 jobs and a wage bill of ±R6 million over 10 months and R5.5 million benefiting the locals, providing broadly 17 unskilled, 32 semi-skilled and 3 skilled people employment.
- During operations, the generation of ±10 jobs, and a wage bill of R15.5 million for the first ten years of which R12 million will benefit locals and R1.6 million per annum is spend.
- During decommissioning, the creation of a similar number of jobs (±52) with a wage bill of R2.5 million over 4 months and R1 million benefitting the locals, providing a similar number of unskilled, semi-skilled and skilled local people employment opportunities and contributing <1% to the Swartland GDP.
- Contributing to the Swartland GDP:
- During construction, operations and decommissioning the facility contributes <1% to the Swartland GDP mainly from sales generated from the wage bill, materials and services, and selling R11.2 million's electricity.
- Generating work within <1km proximity, during operations.
- Enhancing supply of bulk services as 19.9MW and 6500 households are provided with electricity, during operations.

The indirect positive impacts are:

- Improved skills and educational levels:
- During construction, operations and decommissioning, skills development as informal training takes place.
- During construction and operations raising awareness of career options having skilled and semi-skilled others present in the community working on the solar facility;
- During operations, increased levels of education as personal choices in the world of work are enhance by supporting the teaching of scarce school subjects.
- Increased SMME participation as services, including maintenance services are rendered, during operations .

Residual Impacts are:

- Improved self-image, being held in high esteem and family coherence of vulnerable people
- Improved family coherence as young women and youth are hold in high-esteem, during construction, operations and decommissioning.
- Youth's self-esteem developed and found employment (employment equity) and development opportunities resulted from social investment during construction, operations and decommissioning.
- Family structure changes as family members are becoming available to work.

The direct negative impacts are:

- Changed sense of place:
- During construction and decommissioning and within limits, though negative, increased use of social amenities and services, decreased road safety and increased noise and dust.
- During construction, operations and decommissioning, the change in the sense of place. During decommissioning the land returns to fallow fields.
- Loss of agricultural land:
 - During operations, Loss of ±54ha agricultural land.
- Loss of employment:
 - During decommissioning Retrenchment and loss of income for 10 employees maintaining the solar facility.

- Loss of social benefits:
- During decommissioning, social benefits ceased enabling individual achievement and development benefits the Swartland community.

The indirect negative impacts are:

- Though unlikely, increased crime during construction and decommissioning.

Negative Residual Impacts:

- Dilution of local economy and culture, during construction and decommissioning.

Cumulative Impacts:

Cumulative Impacts of similar facilities in the region, including within Darling, include the following:

Positive Cumulative Impacts:

- Job Creation
- Bulk infrastructure/ alternative energy generation contributes to the national goal of reducing the carbon footprint and prohibiting global warming and climate change.

Negative Cumulative Impacts:

- Change in sense of place. The visual nature of the western entrance change from fallow agricultural land to solar facility, is moderate on the local sense of place. As Darling is a tourism destination, the change of sense of place being of a visual nature (the presence of the PV panels and associated infrastructure) at the western entrance of Darling will become part of the new association with Darling, and will negatively affect tourism.

The impact of the proposed development will be a sufficient addition, given its extent and longer term presence, to change the association with Darling from rural (natural, conservation and agricultural landscape) to an uneasiness because of the visibility of utilities, bulk service infrastructure and unguided road interface development and in the longer term landscape deterioration, which become the replacement association. The replacement association will impact negatively on Darling as tourist destination which will be counterproductive to the gains of the proposed development.

Likely cumulative impacts that do not contribute to regional impacts:

There are three impacts which do not add to surrounding impacts as the loss anticipated could be mitigated or avoided:

- Loss of agricultural land:
 - It is grazing land of which there is no shortage and does not impact on food security.
 - It seldom contributed to the livelihood of a farming entity renting the land and do not affect farmers, their families or agri-workers as it is owned by the Swartland Municipality. As it is not a scarce resource, the loss is not assessed as cumulative.
 - The remainder of the land can still be used for small scale agriculture and agricultural reform.
- Loss of biodiversity and ecological infrastructure:
 - The impact is diverted and ecological infrastructure is being protected by avoiding the water course and biodiversity. There is thus no addition to impacts of biodiversity loss that may occur because of the solar projects in the Swartland region.
- The influx of outsider looking for work and remaining in the area during the various phases of the proposed facility causing increased use of social amenities, competition to find employment, unemployment, poverty and crime can be mitigated and do not result into a cumulative impact. The culminative impact of employment and economic growth, will ultimately absorb the influx.
 - Partnerships with entities promoting education and government should enhance provision of service and opportunities to participate in the economy.

- Community structure could be strengthened and partnerships with communities can be managed by establishing Trusts, securing benefits for local communities.

In conclusion, the proposed solar facility is deemed acceptable as it is:

- Generating employment equal to ±36 full-time job during all three phases benefitting the locals
- Contributing at least R1.2 million per annum to the local wage bill
- Generating work within <1km proximity, during operations.
- Enhancing supply of bulk services as 19.9MWh and approximately 6 500 households are provided with electricity, during operations.

The proposed solar facility as a whole should be authorised.

2. List the impact management measures that were identified by all Specialist that will be included in the EMP

Freshwater:

No specific mitigation required.

- Prevent loose soil and sediments from moving down the drainage line along with stormwater.
- Prevent litter and rubbish entering the drainage line

Biodiversity:

The study area is considered transformed with no intact or natural veld of any significance remaining. However, potential additional impacts on the watercourse to the north (even though degraded) should be minimised.

The following recommendations aims at the protection of seasonal watercourse .

- The aquatic CBA area must be considered a no-go area (to be protected).
- Indiscriminate clearing of any area outside of the footprint must be avoided.

Agriculture

No impact management or mitigation measures required.

Visual

Planning phase:

1. **Site Vegetation and Gum Trees:** excessive clearance of perimeter areas and even areas in-between the solar panels should be avoided (not as per the example in Figure 2-7 which has stripped the site completely). Furthermore, no interference with the historic gum tree avenue on the southern boundary or anywhere else should be allowed. An Arborist must do any tree pruning. This will help conserve the valuable landscape heritage of the area and its essential screening and contextual character.
2. **Screening:** where possible, the scheme should be screened at ground level with shrubs that will screen off views of the 2.5m high PV panel rows. These should preferably be endemic from the natural vegetation occurring on site or in the area (FRg 2 Swartland Granite Renosterveld). This screening can either be done on site or on the boundary using natural hedging species like *Searsia spp.* and others.
3. **Planting:** the scheme intention should be to maintain the natural vegetation and/or underplanted with *Carpobrotus* species (*suurvy*), the range of plants could be broadened to include endemic FRg 2 Swartland Granite Renosterveld species as well. Alternatively, the agro-photovoltaic option of interplanting with some crop species is also good. The planting of small trees in the any leftover areas will help break the monotony of the facility and provide shade to any associated buildings.
4. **Fencing:** an intention of using Clear-View to secure the site perimeter is advisable as it is neat, strong and semi-permeable. Colouration should be a dull natural colour like a sage/khaki that will blend into both the summer and winter landscape.
5. **Structures:** the likely container style facility structures is low key and should likewise be coloured a dull natural colour like a sage/khaki that will blend into both the summer and winter landscape. The

support structures of the PV panels could likewise be coloured naturally.

6. **Maintenance:** Planting maintenance covering the proposed screening and under-planting or intercropping will be needed to ensure the establishment of the screening vegetation and an ongoing maintenance programme for any other vegetation.

Construction phase:

1. **Damage Control:** All parties must make every effort to control the destruction of soils and vegetation on site, especially any remnants of natural vegetation. These must not be damaged under any circumstances.
2. **Pollution:** Chemical damage by cement mixing directly on the ground and by diesel, etc spills must also be prevented at all costs, as should vandalism of the plants and accidental damage to limbs by workers and machinery. Fires must be prevented also at all costs in all areas. Penalties and incentives should be implemented as can fencing off areas.
3. **Monitoring:** Monitoring of the landscape, soils and vegetation during construction is very important and must be attended to regularly. Damage to some is all too inevitable and often irreversible. Adequate indigenous (preferably endemic) vegetation must be planted.

Operational phase:

1. **Lighting:** Lighting should be minimised and carefully controlled as part of the project's management plan. The use of green energy fittings and concepts should be encouraged and lighting developed with sensitivity to the rural landscape.
2. Waterwise landscaping should be used wherever possible and green star building practices.
3. **Landscape Maintenance:** must be carried out at all times in line with these recommendations to help keep the scheme green and encouraging local biodiversity.

Heritage

No specific mitigation measures required.

Socio-economic:

- **Preferential procurement of goods, services and labour**

Construction, Operation and Demolition

Contractors, employing or seeking to employ local HDIs who are suitably qualified, should get preference;

The municipality, local community and local community organizations should be informed of the project and potential job opportunities by the developer;

The developer should, where necessary, assist local HDI owned firms to complete and submit the required tender forms on condition that local labour is used;

Construction & Operation

- Reserve a number of jobs for women.
- Facilitate mechanisms to enable women to access employment.
- Pay men and women doing the same job, equally.
- Ensure that women gain equal access to training and education opportunities than men do.

Construction and Demolition

- A database of locally based firms, including SMME's owned and run by HDIs that qualify as service providers (construction companies, catering companies, waste collection companies, site cleaning companies etc.) should be compiled by the developer prior to the commencement of the tender process. These firms should be invited to bid for tenders;
- Establish a Monitoring Committee for the construction and decommissioning phase in collaboration with representatives of the local community. The Monitoring Committee has to ensure that the EMPr is

implemented and that any problems that arise which are associated with the construction and decommissioning phase, are addressed.

- Developer and contractor to act as reference for locals employed.
- Developer and contractor to liaise with existing or future projects to access employment for locals.
- Reserve a number of jobs (80%) for local labour (un- & semi-skilled labour).
- Facilitate mechanisms to enable locals to access employment and learning opportunities offered by the proposed solar facility.

Operations and Demolition

- Developer and contractor to act as reference for locals employed.
- Developer and contractor to liaise with existing or future projects to enhance employment opportunities for locals.

- **Skills transfer**

Construction

- The proposed development should enhance formal and informal skills transfer:
 - Should skilled persons from outside the community be employed, the developer should consider implementing a training and skills development programme to enhance the opportunities for local historically disadvantaged individuals in the construction and maintenance industry. Measures should be put in place to ensure successful training and development i.e. structured job shadowing and learnerships. Such a programme should be offered in liaison with an accredited Further Education and Training College or University of Technology;
 - Some basic skills can be tutored at school level in a joint venture established by the developer between the primary schools in Malmesbury and the schools or education and skills training providers. In the long-term (generationally) the improved skills level will ultimately lead to improved levels of education.
 - An “access to education support service” assisting future students should be considered attending to application fees for bursaries, career and financial planning and strategies for the period of studying.
- The proposed development should invest in teacher training to offer scarce subjects such as mathematics, science and physical science. Besides investing in teacher training the proposed development should fund the tuition of the scarce subjects.

Operational

- Skills transfer and development, formally and informally, should be implemented together with local education and skills training providers (e.g. job shadowing).
- Facilitate mechanisms to enable local young people to access the educational opportunities to attend courses in scarce subjects.
- Ensure local employees do benefit from on the job training.
- The educational opportunities should include formal and informal education:
- On successful completion of subjects and courses, opportunities to access further education should be made accessible.
- Facilitate mechanisms to enable local young people (who are not necessarily employed) to access the skills training opportunities.
- On the job training should include formal and informal opportunities.

- **Security Control**

Construction

- Regularly alternated twenty four hour security to guard the development.
- Documentation of all movement and vehicles entering and leaving the premises.
- Regular searching of all vehicles entering and leaving the premises.
- No persons not concerned with the development to enter on the premises.

- Limit access points to one point.

- **Safety Management**

Construction and Demolition

- Adhere to international construction health and safety standards and precaution measures.
- Provide health and social training amongst the project team and in the community.
- Make effort to ensure that the construction team and their families meet regularly (monthly).

- **Traffic Regulation**

Construction and Demolition

- Rehabilitate the gravel road during and particularly after construction and decommissioning to at least the same standard as is currently.
- Upgrade road signs to address the movement conflict at the intersection.
- Road signs for protecting pedestrians crossing and accessing the road should be displayed.
- Provide transport to decrease pedestrian traffic.
- Restrict heavy vehicles to specific hours.
- Erect road signs signal times when heavy vehicles will make use of the road.

Construction

- Adhere to national traffic safety standards and precaution measures.
- Provide traffic safety awareness amongst the project team and the community.

- **Dust and Noise control**

Construction & Demolition

- Dust creation must be controlled as per construction and demolition management and control code.
- Noise creation should be controlled as per construction and demolition management and control code.
- Appoint an Environmental Control Officer to supervise construction and building and demolition.
- Adhere to the Environmental Management Plan (EMPr) for the Construction and Decommissioning Phase.
- All workers and management must undergo an induction course.
- Any natural habitat destroyed by constructing infrastructure should be rehabilitated.
- Enforce strict operating hours for heavy vehicles and construction activities on site to reduce noise and dust impacts on adjacent landowners.
- Implementation dust suppression measures;
- Access must be on recognized routes.
- Litter and littering must be strictly controlled.
- All construction waste and building rubble and demolition waste and rubble must be removed off site.

Construction

- All road construction must be limited to the road reserve.
- Cut and fill should be kept to a minimum and should be rehabilitated immediately.

- **Enhancing the economy**

Construction, Operations and Demolition

- Contractors should be directed by tender criteria to purchase locally and to make use of local service providers.
- Spending money locally purchasing from locals and South African should benefit employees. The proposed development should leverage discount in the local economy of the municipal area and employees should be made aware of it.

- Small businesses should be supported (i.e. skills training, assistance and guidance to set up small businesses) and joint ventures with previously disadvantaged persons should be promoted.
- The promotion of joint ventures between small businesses (owned by previously disadvantaged persons) and more established businesses should be encouraged.

Operations

- Market the photovoltaic electricity generation facility as a tourist destination.
- Create links with other tourism activities in Malmesbury through a website and the local tourism office.
- The promotion of joint ventures between small businesses (owned by previously disadvantaged persons) and more established businesses.
- Implement formal small business training and mentoring programmes.

- **Maintenance of Sense of place:**

Design and Planning phase

- Prepare an environmental constraints plan to establish the environmentally sensitive areas and those areas upon which the development may occur.
- Plan the establishment of vegetated and landscaped berms around the perimeter of the project site to minimize visual impacts onto the site.
- Design buildings to reflect the local architecture and sense of place of the environment. Buildings and similar structures must be in keeping with regional planning policy documents, especially the principles of critical regionalism, namely sense of place, sense of history, sense of nature, sense of craft and sense of limits.
- Consider raising the PV platforms sufficiently so that cattle, sheep, and goats can roam underneath.
- Should it be required, install anti-reflective coating or glass to reduce the sunlight that is reflected and increase the amount of sunlight that is absorbed.
- Consider installing all electrical cables underground en-route to the substation.
- Where cables cannot be laid underground and electricity towers (pylons) need to be erected, install H-frame wooden poles, or similar structures, to transmit electrical lines instead of steel towers.

Construction phase

- An Environmental Control Officer (ECO) must be appointed to oversee the construction process and ensure compliance with conditions of approval.
- Contractor to sign and undertake to comply with Environmental Specifications.
- Demarcate sensitive areas and no-go areas with danger tape to prevent disturbance during construction.
- Pre-construction, keep disturbed areas to a minimum. No clearing of land to take place outside the demarcated footprint.
- Throughout construction, identify suitable areas within the construction site for fuel storage, temporary workshops, eating areas, ablution facilities and washing areas.
- Throughout construction institute a solid waste management programme to minimize waste generated on the construction site and recycle where possible.
- Throughout construction reduce and control dust using approved dust suspension techniques as and when required.
- Throughout construction to occur only during daytime. Should the ECO authorize night work, low flux and frequency lighting shall be used.
- Throughout construction, rehabilitate all disturbed areas in accordance with the development plan.
- A photographic record of the site and its immediate surrounding area must be kept as part of the EMP to serve as a baseline for measurement of all future visual impacts and as an aid to the full rehabilitation of the site should the facility be decommissioned in future.
- Excavation on the site is to be kept to the absolute minimum required for the successful implementation of the project.

- The fencing design is to imitate the agricultural fencing in the area while at the same time providing the security. It is to be visually permeable. No barbed wire is to be used.
- Any necessary lighting must be shielded in such a way that no direct light is allowed to escape into the surrounding terrain or up into the sky. Only the areas that are necessary to be lit must be lit with the surrounding.

Operational

- Maintain the general appearance of the facility as a whole (i.e. the PV panels, buildings and associated infrastructure, roads and natural environment).
- Littering is to be strictly controlled over the entire life of the project.
- All waste is to be regularly removed from the facility to a recognized transfer or dumping site. Waste, in any form, should not be allowed to be collected on the site.
- Monitor land surface below PV 'strings' to prevent loss of vegetation and first signs of desertification.
- The use of any cleaning materials or defoliant to aid in the control of vegetation is to be strictly monitored so that their long-term use does not cause future problems should the site be decommissioned.
- Maintain access roads to prevent scouring and erosion, especially after rains.
- Monitor the use of lighting over the entire life of the project to minimize light pollution.
- Strictly control outdoor lighting to prevent light pollution.
- All lighting must be installed at downward angles.
- Sources of light must as far as possible be shielded by physical barriers such as planted trees and shrubs or built structures.
- Consider the application of motion detectors to allow the application of lighting only where and when it is required.
- Only minimum wattage light fixtures must be used.
- A strict fire prevention policy must be implemented and monitored.
- Screen the site with endemic vegetation to minimize the visual impact.

Decommissioning

- Prepare a decommissioning plan to establish a timeframe and order of decommissioning of the plant.
- During demolition the site should be returned to as near as its existing state as is possible.
- All waste material has to be removed.
- Removal of all infrastructure introduced into the landscape (i.e. PV panels, ancillary infrastructure such as a maintenance workshop, storage building and offices).
- Rehabilitate all new access roads created during the construction period.
- Institute monitoring of all decommissioned and rehabilitated sections of the project site at regular intervals.

- **Loss of ecological infrastructure (freshwater and biodiversity)**

All phases

- Proper drainage infrastructure around the roads in and around the PV units to prohibit preferential flow paths.
- Immediate stabilisation and rehabilitation of disturbed areas during the construction phase as stormwater can wash sand and mud into small wetlands, trenches and streams (towards the north of the sub-catchment).
- Keep solar energy panels 32m away not to disturb vegetation in and around the drainage lines
- Controlling invasive vegetation on the PV installation site as an ongoing standard operating procedure.
- Livestock should and will not be permitted to graze on the site of the PV installation. Over utilization will cease.
- Groundwater table will be kept stable as no water will be required and subsequently less dehydration of waterways than the current farming operation.
- Conservancy tanks will be installed that will be emptied by tanker trucks.

- The proposed development has no direct impact (low negative) on the ecological infrastructure and mitigation measures will enhance the ecological support areas supporting the stream in the north (low positive).
- Prevent the loss of biodiversity and the protection of seasonal watercourse:
 - o Consider the aquatic CBA area as a no-go area (to be protected).
 - o Indiscriminate clearing of any area outside of the footprint must be avoided.

- **Loss of Agricultural land and activities**

General

- Implement recommendations of Visual Impact Assessment and Agricultural Impact Assessment.
- Implement Environmental Management Plan.

Construction Phase:

The site should be developed with as little disturbance as possible to be able to rehabilitate it back to its natural form:

- Control vehicle access and constructional activity on roads and minimal footprint areas only.
- Strip and stockpile topsoil from all areas where soil will be disturbed.
- After cessation of disturbance, re-spread topsoil over the surface.
- Dispose of any sub-surface, clay spoils from excavations where they will not impact on vegetated land, or where they can be effectively covered with topsoil.

Construction, Operational and Decommissioning

- Promotes strict stormwater management and erosion control: Implementation of an effective system of stormwater run-off control; maintenance of vegetation cover; and stripping, stockpiling and re-spreading of topsoil.
- Implement an effective system of run-off control which collects and disseminates run-off water from hardened surfaces and prevents potential down slope erosion (all phases).

- **Maintaining Social Benefits**

Decommissioning

- The social benefit fund should explore partnerships and other sources of funding.
- Some funds should be invested as a source for future support to local children.

- **Mitigate Retrenchments**

Decommissioning

- During the contract period, provision should be made for those employed to obtain an additional skill set.
- Efforts should be made to obtain placement for contract workers in either their current or their alternative field of expertise.
- The developer should establish a fund from which these contractors could benefit.

3.	List the specialist investigations and the impact management measures that will not be implemented and provide an explanation as to why these measures will not be implemented.
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No impact measurement measures recommended by the specialists will not be implemented.

4.	Explain how the proposed development will impact the surrounding communities.
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The proposed development will have a positive impact in that it will provide additional job opportunities, especially during the construction and operational phases.

The proposed development will have a negative visual impact on the area.

5.	Explain how the risk of climate change may influence the proposed activity or development and how has the potential impacts of climate change been considered and addressed.
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The proposed development is a renewable energy solar PV facility, and will therefore unlikely contribute in any significant way to climate change. The proposed development will reduce CO2 emissions.

Renewable energy provides an environmentally friendly alternative to energy generation and can contribute to the restriction of pollution and global warming.

6.	Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved.
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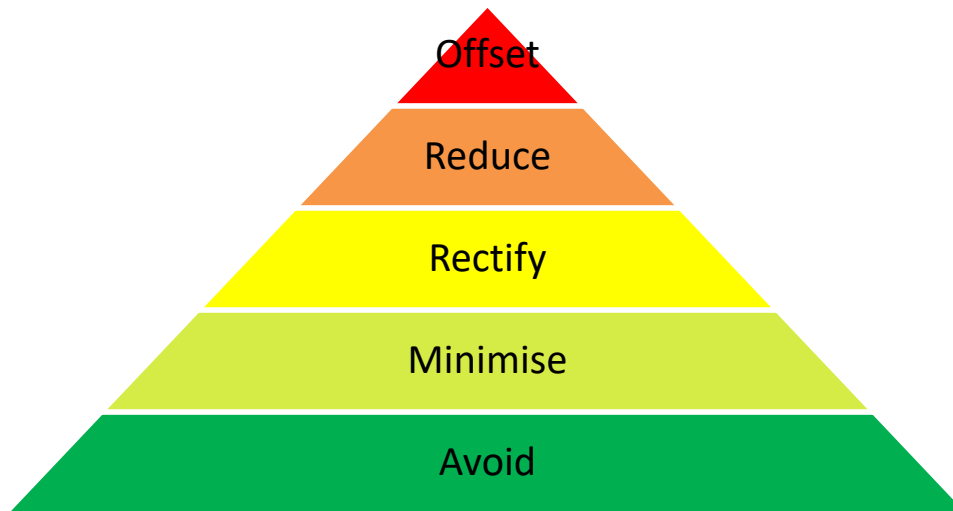
No conflicting recommendations between the specialists.

7.	Explain how the findings and recommendations of the different specialist studies have been integrated to inform the most appropriate mitigation measures that should be implemented to manage the potential impacts of the proposed activity or development.
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All mitigation measures recommended by the Specialists can be implemented, and therefore all have been included in the Environmental Management Programme.

8.	Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option.
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The mitigation hierarchy is as follows:



The proposed development avoids the following impacts:

- The CBAs and drainage lines to the north of the site will be avoided and will be regarded as “no-go areas”.

The proposed development minimises the following potential impacts:

- Reliance on fossil fuel energy generation.

The proposed development reduces the following potential impacts:

- CO2 emissions from electricity generation

SECTION J: GENERAL

1. Environmental Impact Statement

1.1.	Provide a summary of the key findings of the EIA.
<p>The current energy crisis in South Africa, emphasized the important role that renewable energy can play to generate electricity. The release of solar energy into developments will reduce the pressure of non-renewable resources.</p> <p>According to the Town Planning Motivational Report (Appendix L), the proposed solar photovoltaic facility on a portion of Erf 551 will not only be in the interest of Swartland Municipality's local economy but also in the national interest as it contributes to the goals of the White Paper on Renewable Energy. Renewable energy provides an environmentally friendly alternative to energy generation and can contribute to the restriction of pollution and global warming. The application can be seen positively in the light of the following:</p> <ul style="list-style-type: none">• The facility will increase electricity capacity to contribute to the alleviation of SA's energy crisis;• The facility will meet the demand for diversified energy sources;• Ensure the future of sustainable energy use;• Provide local employment opportunities;• Reduce CO₂ emissions and the nation's carbon footprint;• The proposed development is supported by the Swartland Spatial Development Framework (SDF) that guides sustainable future development;• The proposed development supports spatial sustainability in terms of LUPA and SPLUMA;• The proposed development is supported by the Swartland Local Economic Development (LED);• The proposed development is supported by the Western Cape Provincial Spatial Development Framework (WCPSDF) that guides sustainable future development in the Western Cape area.;• The proposed development is supported by the Swartland Integrated Development Plan (IDP);• The proposed development is supported by the national Development Plan 2030 (NDP)• The development will not adversely affect the character of the area, due to its scale. <p>According to the Freshwater Assessment (Appendix G1), the environmental risks are small, even negligible, because of the low-impact nature of the project.</p> <p>The construction and operation of the solar energy plant is because of its nature a low-impact project pertaining the aquatic environment. The mitigating measures are readily implementable and should have positive results. The impacts assessment does not indicate any prohibition. The project should go ahead.</p> <p>According to the Biodiversity Impact Assessment (Appendix G2), the status of the vegetation within the study area is considered transformed (old agricultural land) and reduced to a weedy herbaceous bottom layer dominated by weeds or widespread species or disturbance indicator species. On the edges of the study area, and scattered throughout the site, a number of hardy pioneer shrubs species were occasionally observed (usually dominated by disturbance indicator species such as <i>Galenia africana</i>).</p> <p>The study area does not contain any intact natural vegetation of any significance and had been cultivated over a long period of time. Renosterveld is unlikely to restore itself (for many generations, if ever), even with active rehabilitation. Rehabilitation would only be possible if the study area is actively replanted and re-seeded with indigenous vegetation from surrounding intact veld and then protected as a conservation area. In this case, rehabilitation and conservation of the site is not considered a viable option as there would be many other areas in better condition more worthy of conservation efforts.</p> <p>There are no specific sensitive areas within the study area.</p> <p>According to the Visual Impact Assessment (Appendix G3), the area of the proposed solar storage facility is a flat to gently undulating field situated over on the northwestern outskirts of Darling. The site is currently used for grazing of sheep and horses and also allowed a beautiful wildflower display in spring. Parts of the site are also a wetland. The area is located on the edge of the foothills west of Darling and can be easily seen when</p>	

driving into the town from the west/Yzerfontein side. An old double avenue of gum trees lines the southern boundary along the R307 partially obscuring the view from this major road.

According to the Visual Impact Assessment (**Appendix G3**), the proposed development will have a high impact on the landscape causing noticeable change to the visual environment. In summary, the nature of the impact is as follows: The development's visual impact has district extent, long-term duration, medium intensity, definite probability, and medium significance on the landscape.

According to the Agricultural Statement (**Appendix G4**), the assessed area is considered to be below the threshold for needing to be conserved as agricultural production land because of the limitations on its cropping potential. The production potential of the land is limited to only being suitable as grazing land, and there is no particular scarcity of such land in the country, in contrast to arable land, which is very scarce. The use of this land for renewable power generation will cause minimal loss of agricultural production potential in terms of national food security. Due to the fact that the energy facility will not occupy scarce, viable cropland, the overall negative agricultural impact of the development (loss of future agricultural production potential) is assessed here as being of low significance and as **acceptable**.

According to the Socio-economic Impact Assessment (**Appendix G5**), the proposed development will generate employment: During the construction phase, ±52 jobs is expected to be created and a wage bill of ±R6 million over 10 months and R5.5 million benefiting the locals, providing broadly 17 unskilled, 32 semi-skilled and 3 skilled people employment. During the operational phase, the generation of ±10 jobs, and a wage bill of R15.5 million for the first ten years of which R12 million will benefit locals and R1.6 million per annum is spend.

During construction, operations and decommissioning the facility contributes <1% to the Swartland GDP mainly from sales generated from the wage bill, materials and services, and selling R11.2 million's electricity.

The development will also enhance the supply of bulk services as 19.9MW and 6500 households are provided with electricity, during operations.

The proposed solar facility as a whole should be authorized.

Considering all the information, it is not envisaged that this proposed development will have a significant negative impact on the environment. Sensitive environmental areas such as the watercourses and Critical Biodiversity Areas are excluded from the development footprint. The socio-economic benefits of the project are expected to greatly outweigh the negative socio-economic impacts (loss of sense of place and loss of agricultural land) and any negative environmental impacts.

1.2.	Provide a map that that superimposes the preferred activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. (Attach map to this BAR as Appendix B2)
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1.3.	Provide a summary of the positive and negative impacts and risks that the proposed activity or development and alternatives will have on the environment and community.
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Preferred Alternative:

Positive Impacts:

- The facility will Increase electricity capacity to contribute to the alleviation of SA's energy crisis;
- The facility will meet the demand for diversified energy sources;
- Ensure the future of sustainable energy use;
- Reduce CO2 emissions and the nation's carbon footprint;
- Generating employment equal to ±36 full-time job during all three phases benefitting the locals
- Contributing at least R1.2 million per annum to the local wage bill
- Generating work within <1km proximity, during operations.
- Enhancing supply of bulk services as 19.9MWh and approximately 6 500 households are provided with electricity, during operations.

Negative Impacts:

- Impact on the sense of place
- loss of future agricultural production potential

2. Recommendation of the Environmental Assessment Practitioner (“EAP”)

2.1.	Provide Impact management outcomes (based on the assessment and where applicable, specialist assessments) for the proposed activity or development for inclusion in the EMPr
<ul style="list-style-type: none"> - Any loss of natural vegetation is limited to only the construction footprint, and must be minimised. The construction site must be clearly demarcated. - Access to “no-go areas” are prevented - All staff must be provided with environmental training before the commencement of construction and operational phases. - Undertake responsible water usage to prevent unnecessary loss of water. - Undertake responsible waste management - Undertake proper site rehabilitation after construction activities - Socio-economic management guidelines provided in Section I to be implemented 	
2.2.	Provide a description of any aspects that were conditional to the findings of the assessment either by the EAP or specialist that must be included as conditions of the authorisation.
<ul style="list-style-type: none"> • The watercourses and CBAs to the north of the western site must be considered “no-go areas”. • Visual Impact mitigation measures and socio-economic management guidelines to be implemented as far as possible. 	
2.3.	Provide a reasoned opinion as to whether the proposed activity or development should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be included in the authorisation.
<p>Considering all the information, it is not envisaged that this proposed development will have a significant negative impact on the environment. Although the development will involve the loss of some agricultural land, this is considered of low significance and as acceptable.</p> <p>The proposed development will have an impact on the sense of place and will have a negative visual impact. Although the development’s visual impact has district extent, long-term duration, medium intensity, definite probability, and medium significance on the landscape. This is also seen as acceptable, as the socio-economic benefits to Darling and the community is considered to outweigh these negative impacts.</p> <p>The potential impact on freshwater resources are also expected to be negligible, as the development will not directly impact on the surrounding watercourses, which are considered “no-go” areas.</p> <p>The overall impact on the environment is expected to be Medium-Low (Negative). However, with the mitigation measures proposed above, and their implementation and compliance in the Environmental Management Programme during the construction and operational phases of the development, the expected overall impact is expected to be <u>Low (Negative)</u>.</p> <p>The potential socio-economic benefits, including energy security and providing job opportunities during the construction and operational phase, is expected to outweigh the potential negative environmental and socio-economic impacts.</p>	
2.4.	Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.
<p>The following assumptions are made:</p> <ul style="list-style-type: none"> - The information on which the report is based (i.e. project information) is correct. - The construction and management of this proposed development will be in line with the recommendations in this report, which will be enforced by the implementation of a detailed Environmental Management Programme. Much of the long-term success lies in the effective implementation of the measures prescribed in the Environmental Management Programme. <p>There are no significant gaps of knowledge that have been identified.</p> <p>There are no uncertainties that we are aware of at present.</p>	
2.5.	The period for which the EA is required, the date the activity will be concluded and when the post construction monitoring requirements should be finalised.

It is recommended that the EA be made valid for 5 years in which construction must commence. A maximum of 5 years should be provided for construction of all phases to be completed.

3. Water

Since the Western Cape is a water scarce area explain what measures will be implemented to avoid the use of potable water during the development and operational phase and what measures will be implemented to reduce your water demand, save water and measures to reuse or recycle water.

The proposed development will not use any municipal potable water. Trucks will be used to transport water for the washing of the solar panels.

The estimated annual average daily domestic water demand for the development is 800 l/day.

4. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.

The only significant waste that will be produced during construction is some general construction waste. During the operational phase, only general domestic waste will be produced.

The solar PV panels and the BESS can be recycled to a degree.

5. Energy Efficiency

8.1. Explain what design measures have been taken to ensure that the development proposal will be energy efficient.

The proposed development is a renewable solar photovoltaics facility.

SECTION K: DECLARATIONS

DECLARATION OF THE APPLICANT

Note: Duplicate this section where there is more than one Applicant.

I....., ID numberin my personal capacity or duly authorised thereto hereby declare/affirm that all the information submitted or to be submitted as part of this application form is true and correct, and that:

- I am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment ("EIA") Regulations, and any relevant Specific Environmental Management Act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- I am aware of my general duty of care in terms of Section 28 of the NEMA;
- I am aware that it is an offence in terms of Section 24F of the NEMA should I commence with a listed activity prior to obtaining an Environmental Authorisation;
- I appointed the Environmental Assessment Practitioner ("EAP") (if not exempted from this requirement) which:
 - meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
 - meets all the requirements other than the requirement to be independent in terms of Regulation 13 of the NEMA EIA Regulations, but a review EAP has been appointed who does meet all the requirements of Regulation 13 of the NEMA EIA Regulations;
- I will provide the EAP and any specialist, where applicable, and the Competent Authority with access to all information at my disposal that is relevant to the application;
- I will be responsible for the costs incurred in complying with the NEMA EIA Regulations and other environmental legislation including but not limited to –
 - costs incurred for the appointment of the EAP or any legitimately person contracted by the EAP;
 - costs in respect of any fee prescribed by the Minister or MEC in respect of the NEMA EIA Regulations;
 - Legitimate costs in respect of specialist(s) reviews; and
 - the provision of security to ensure compliance with applicable management and mitigation measures;
- I am responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority, hereby indemnify, the government of the Republic, the Competent Authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which I or the EAP is responsible in terms of the NEMA EIA Regulations and any Specific Environmental Management Act.

Note: If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.

Signature of the Applicant:

Date:

Name of company (if applicable):

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (“EAP”)

I, EAPASA Registration number as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- The inclusion of comments and inputs from stakeholders and I&APs;
- The inclusion of inputs and recommendations from the specialist reports where relevant; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties, and that:
- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application;
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to and submitted to the Competent Authority in respect of this application;
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations;

Signature of the EAP:

Date:

Name of company (if applicable):

DECLARATION OF THE REVIEW EAP

I, EAPASA Registration number as the appointed Review EAP hereby declare/affirm that:

- I have reviewed all the work produced by the EAP;
- I have reviewed the correctness of the information provided as part of this Report;
- I meet all of the general requirements of EAPs as set out in Regulation 13 of the NEMA EIA Regulations;
- I have disclosed to the applicant, the EAP, the specialist (if any), the review specialist (if any), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.

Signature of the EAP:

Date:

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

Signature of the EAP:

Date:

Name of company (if applicable):

DECLARATION OF THE REVIEW SPECIALIST

I, as the appointed Review Specialist hereby declare/affirm that:

- I have reviewed all the work produced by the Specialist(s):
- I have reviewed the correctness of the specialist information provided as part of this Report;
- I meet all of the general requirements of specialists as set out in Regulation 13 of the NEMA EIA Regulations;
- I have disclosed to the applicant, the EAP, the review EAP (if applicable), the Specialist(s), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.

Signature of the EAP:

Date:

Name of company (if applicable):