C-N014-08 Akkerboom

Draft Basic Assessment Report

THE PROPOSED ESTABLISHMENT OF AN ELECTRIC VEHICLE CHARGING FACILITY, SOLAR PV PLANT AND ASSOCIATED INFRASTRUCTURE AT AKKERBOOM FARM STALL (PORTIONS 19 & 47 OF FARM FRIER'S DALE, NO. 466) ALONG THE N14, BETWEEN KAKAMAS AND KEIMOES, NORTHERN CAPE

APPLICATION FOR:

Environmental Authorisation

PREPARED FOR:

Zero Carbon Charge

P.O. Box 671
Groenhoek, Vredendal
8160
Tel: 027 213 2431

PREPARED BY:

EnviroAfrica cc

P.O. Box 5367
Helderberg
7135
Tel: 021 851 1616
enviroafrica.co.za

EnviroAfrica
Environmental Management and Impact Assessment | Omgewingsbestuur en Impakbeoordeling

CHARGE

SITE CODE: C-N014-08

DRAFT BAR FOR THE PROPOSED ESTABLISHMENT OF AN ELECTRIC VEHICLE CHARGING FACILITY, SOLAR PV PLANT AND ASSOCIATED INFRASTRUCTURE AT AKKERBOOM FARM STALL (PORTIONS 19 & 47 OF FARM FRIER'S DALE, NO. 466) ALONG THE N14, BETWEEN KAKAMAS AND KEIMOES, NORTHERN CAPE

DENC Ref. No.: To be provided

DRAFT BASIC ASSESSMENT REPORT

DECEMBER 2024

P.O. Box 5367
Helderberg 7135
Tel: +27 (0)21 851 1616

e-mail: info@enviroafrica.co.za

Unit 7 Pastorie Park
Cnr Reitz & Lourens St.,Somerset West
CK 97/46008/23
VAT4870170513

DRAFT BAR FOR THE PROPOSED ESTABLISHMENT OF AN ELECTRIC VEHICLE CHARGING FACILITY, SOLAR PV PLANT AND ASSOCIATED INFRASTRUCTURE AT AKKERBOOM FARM STALL (PORTIONS 19 & 47 OF FARM FRIER'S DALE, NO. 466) ALONG THE N14, BETWEEN KAKAMAS AND KEIMOES, NORTHERN CAPE

PREPARED FOR:

Department of Environment and Nature Conservation (DENC)

90 Long Street, Sasko Building
Kimberly
8300
Tel: 053 807 7430
Fax: 053 831 3530

PREPARED BY:

EnviroAfrica cc

P.O. Box 5367
Helderberg
7135
Tel: 021 851 1616
Fax: 086 512 0154

agriculture, environmental affairs,
rural development and land reform

Department:
agriculture, environmental affairs,
rural development and land reform .
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

SASKO Building, 90 Long Street, Private Bag X6102, Kimberley 8300 Tel. 053-8077300 Fax: 053-8077328

Project applicant:	***Zero Carbon Charge***		
Business reg. no. /ID. no.:	***2022/232376/07***		
Contact person:	***Joubert Roux (Director)/ Anton Beukes (Environmental Manager)***		
Postal address:	***P.O. Box 671, Vredendal***		
Telephone:	***027 213 2431***	Cell:	[redacted]
E-mail:	***joubert@charge.co.za*** ***anton@charge.co.za***	Fax:	

Prepared by:

Environmental Assessment Practitioner/Firm:	***Clinton Geyser (Reviewer and Supervisor)*** ***Zandria Jordaan (Compiler)***		
Business reg. no. /ID. no.:	***CK 97 46008/23***		
Contact person:	***Zandria Jordaan***		
Postal address:	***P. O. Box 5367, Helderberg***		
Telephone:	***021 851 1616***	Cell:	[redacted]
E-mail:	***zandria@enviroafrica.co.za***	Fax:	

(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

Basic Assessment Report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of07 April 2017. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section? **YES** [redacted]
If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. ACTIVITY DESCRIPTION

a) Describe the project associated with the listed activities applied for

The proponent intends to establish a fully renewable energy-powered electric vehicle (EV) charging facility at the Akkerboom Farm Stall. The project site is situated on Portions 19 & 47 of Farm Frier's Dale, No. 466, along the N14, between Kakamas and Keimoes (Figure 1), in the Northern Cape. The project will encompass the development of a solar photovoltaic (PV) plant, a battery energy storage system (BESS), and associated infrastructure to enable sustainable energy generation in order to efficiently charge EV's.

Project Components:

1. **Solar PV Plant:**
   The PV plant will consist of an array of solar panels installed in 2 steps: Stage 1 and stages 2-7 (Appendix 12). The development will take place in stages as the demand for electricity increases. The solar panels are expected to generate an electrical output of approximately 7 megawatts (MW), which will be transmitted to the battery storage units and the EV charging infrastructure. The solar panels will be strategically placed to optimize energy capture, considering site-specific environmental factors such as solar irradiation levels and shading.
2. **Battery Energy Storage System (BESS):**
   The project will incorporate battery energy storage units that will store the electricity generated by the solar PV plant. These batteries will be housed in secure containers alongside other energy management equipment to ensure optimal efficiency and safety. The storage system will provide consistent power to the EV charging infrastructure, ensuring uninterrupted service even during periods of low solar generation or high demand.
3. **Electric Vehicle Charging Infrastructure:**
   The EV charging facility will accommodate approximately six electric vehicles at any given time. This infrastructure will be powered entirely by the solar PV plant and the energy stored in the BESS, making it a sustainable and eco-friendly solution for travellers and locals using electric vehicles along the N14 corridor. The facility will be equipped with fast-charging stations, designed to minimize downtime for EV users.
4. **Electricity Transmission Infrastructure:**
   The electricity transmission infrastructure will connect the solar PV plant and the battery storage units to the EV charging stations. The initial stage of the project will involve the installation of approximately 300 meters of transmission cabling, with additional stages extending the cabling by a further 450 meters to support the expansion (stages 2-7).
5. **Development Footprint:**
   The total development footprint of the project, including the solar PV plant, BESS, and EV charging infrastructure, will cover approximately 8 hectares at the Akkerboom Farm Stall. This footprint includes the installation of necessary utilities, access roads, and support structures, ensuring seamless integration of the renewable energy generation systems with the EV charging facility.

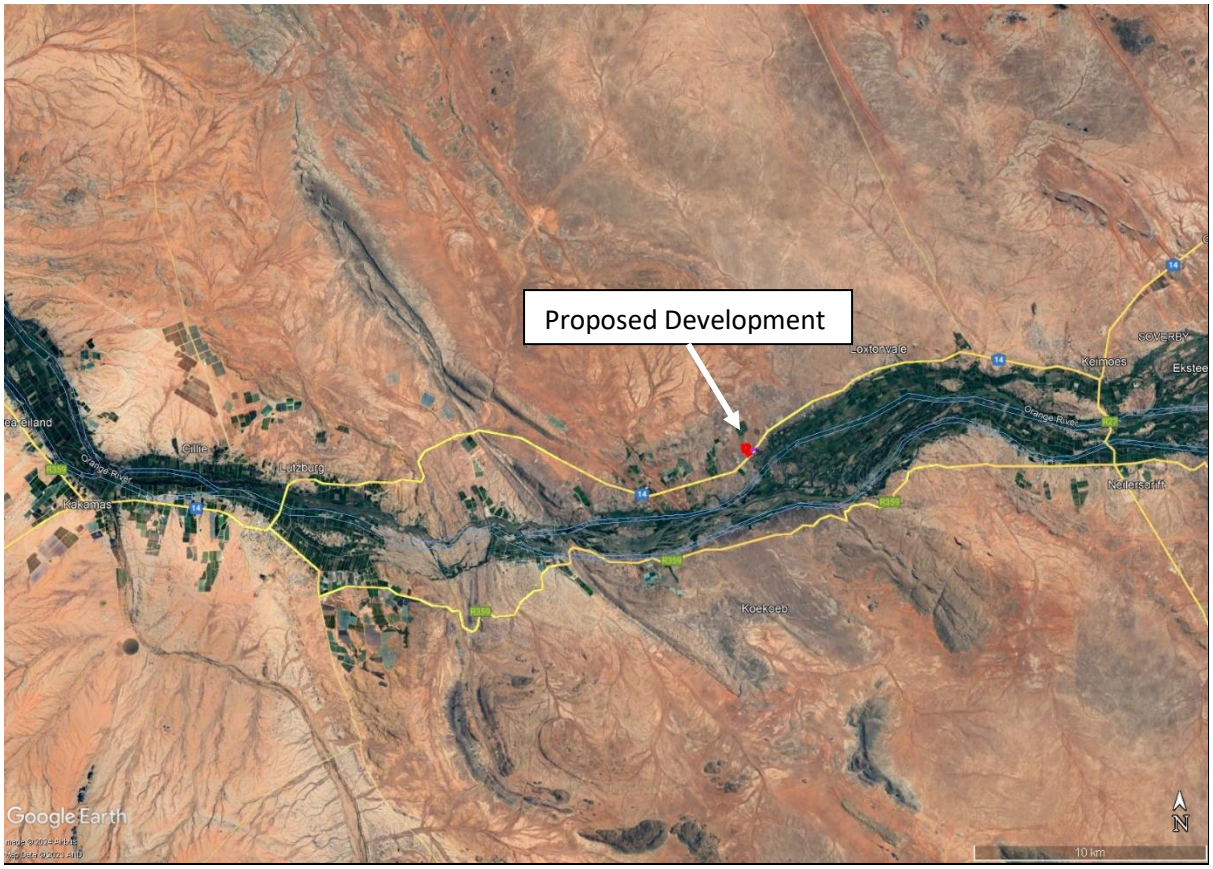


Figure 1. Location of the proposed development (red polygon) alongside the N14 between Kakamas and Keimoes.

b) Provide a detailed description of the listed activities associated with the project as applied for

Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 1**	Description of project activity
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."*	***The renewable energy generation development and associated structures will cover an area of approximately 8 ha and the electricity generated will be approximately 7 MW.***
11.	*"The development of facilities or infrastructure for the transmission and distribution of electricity—* *(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or*	***The electricity transmission cable will be 2 kilometres (approximately 300 m for stage 1 and an additional 450 m for stages 2-7) in length from the renewable energy generation plant to the EV charging facility and the cable will have a capacity of 33 kilovolts.***

	(ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more; *excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is —* *(a) temporarily required to allow for maintenance of existing infrastructure;* *(b) 2 kilometres or shorter in length;* *(c) within an existing transmission line servitude; and* *(d) will be removed within 18 months of the commencement of development."*	
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."*	***The renewable energy generation development and associated structures will cover an area of approximately 8 ha.***
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."*	***The renewable energy generation development and associated structures will be located on land that was previously used for agriculture and outside an urban area, covering an area more than 1ha.***
Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 3**	Describe the portion of the proposed project to which the applicable listed activity relates.
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.* ***Northern Cape*** *(i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA 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;*	***The proposed development is situated within a Critical Biodiversity Area (Figure 2) and will cover an area of approximately 8 ha.***

	(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 estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas; or* *(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."*	
14.	*"The development of-* *(i) canals exceeding 10 square metres in size;* *(ii) channels exceeding 10 square metres in size;* *(iii) bridges exceeding 10 square metres in size;* *(iv) dams, where the dam, including infrastructure and water surface area exceeds 10 square metres in size;* *(v) weirs, where the weir, including infrastructure and water surface area exceeds 10 square metres in size;* *(vi) bulk storm water outlet structures exceeding 10 square metres in size;* *(vii) marinas exceeding 10 square metres in size;* *(viii) jetties exceeding 10 square metres in size;* *(ix) slipways exceeding 10 square metres in size;* *(x) buildings exceeding 10 square metres in size;* *(xi) boardwalks exceeding 10 square metres in size; or* *(xii) infrastructure or structures with a physical footprint of 10 square metres or more; Where such development occurs –* *(a) within a watercourse;* *(b) in from of a development setback; or* *(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;* *Excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.* ***Northern Cape*** *(i) In an estuary;* *(ii) Outside urban areas:* *(aa) A protected area identified in terms of NEMPAA, excluding conservancies;*	***The proposed development is located within 32m of a drainage line and surrounded by 2 sub-catchments to the south west and north east (Figure 5 of the Freshwater Report, Appendix D4).***

	(bb) National Protected Area Expansion Strategy Focus areas; *(cc) World Heritage Sites;* *(dd) Sensitive areas as identified in an Environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the competent authority;* *(ee) Sites or areas identified in terms of an international convention;* *(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;* *(gg) Core areas in biosphere reserves;* *(hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;* *(ii) Areas seawards of the development setback line or within 1 kilometre from the highwater mark of the sea if no such development setback line is determined; or* *(iii) Inside urban areas:* *(aa) Areas zoned for use as public open space;* *(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, zoned for a conservation purpose; or* *(cc) Areas seawards of the development setback line.*	

Note:

- The Minister responsible for mineral resources is the Competent Authority to deal with all applications where the listed or specified activity is directly related to-
  (a) prospecting or exploration of a mineral or petroleum resource; or
  (b) extraction and primary processing of a mineral or petroleum resource.
- Where the National Minister for the Environmental Affairs is the Competent Authority in terms of Section 24C of NEMA, your request for the determination of the applicability of the NEMA EIA Regulations must be submitted to the National Department of Environmental Affairs.

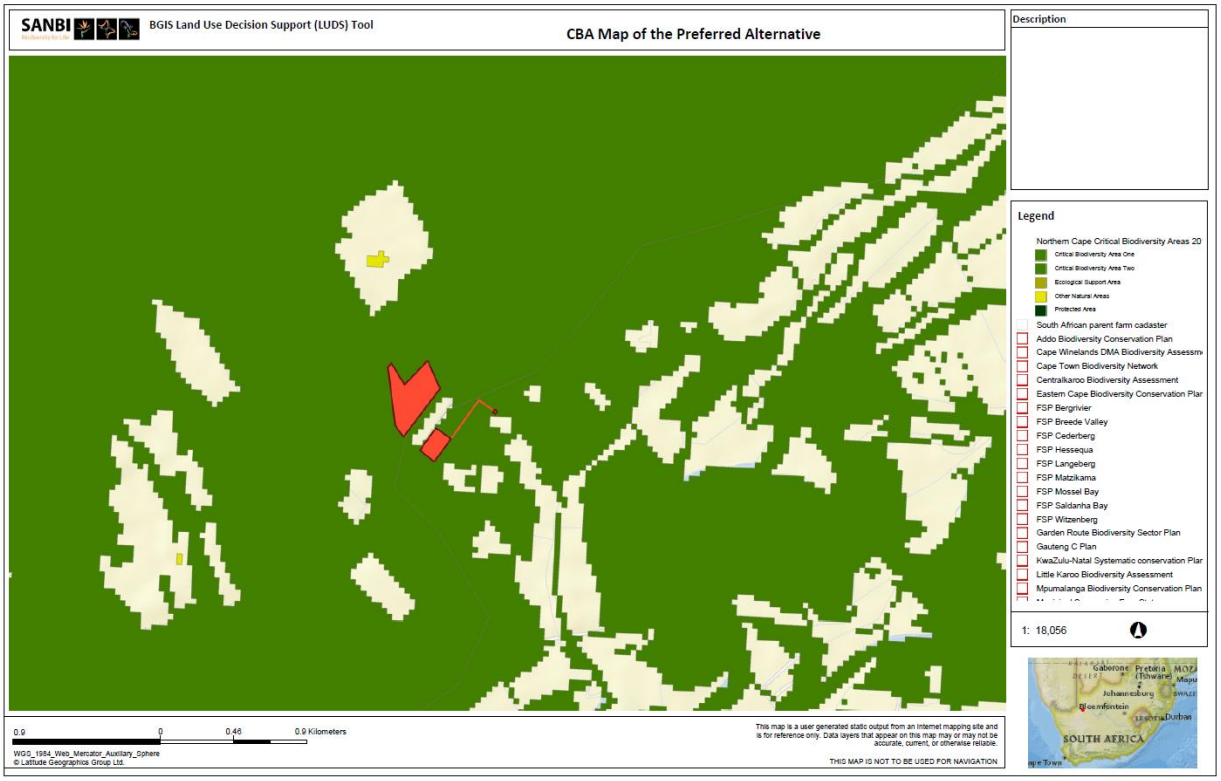


Figure 2. CBA Map of the preferred alternative where an area of approximately 8 ha will be cleared.

2. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2014.Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	**Lat (DDMMSS)**	**Long (DDMMSS)**
Electric Vehicle Charging Stations	28°44'19.89"S	20°49'47.23"E
Solar Panels – Stage 1	28°44'25.37"S	20°49'35.18"E
Solar Panels – Stages 2 to 7	28°44'16.20"S	20°49'30.15"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity	***NA***	***NA***
• Middle/Additional point of the activity	***NA***	***NA***
• End point of the activity	***NA***	***NA***
Alternative S2 (if any)		
• Starting point of the activity	***NA***	***NA***
• Middle/Additional point of the activity	***NA***	***NA***
• End point of the activity	***NA***	***NA***
Alternative S3 (if any)		
• Starting point of the activity	***NA***	***NA***
• Middle/Additional point of the activity	***NA***	***NA***
• End point of the activity	***NA***	***NA***

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description		
The preferred alternative involves developing the proposed facility within the area delineated by the red polygons (Figure 3). This layout covers a smaller portion of the property, minimising the overall development footprint. It focuses on optimising land use by utilising only the essential area required for the solar PV plant, battery storage units, and EV charging infrastructure. The preferred alternative ensures that existing agricultural or natural spaces are preserved to the greatest extent possible. Advantages of the Preferred Alternative: • Reduced Environmental Impact: By occupying less space, this alternative minimises disturbances to the existing environment, including vegetation, fauna, and potential heritage resources. • Efficient Land Use: The compact layout enables the same energy and charging outputs as the larger alternative while preserving more of the property for other uses or natural regeneration. • Improved Visual Impact: The reduced footprint makes the development less visually intrusive, aligning with community and aesthetic considerations for the area.		
	Lat (DDMMSS)	**Long (DDMMSS)**
Charging Station Corner coordinates (Blue Polygon Figure 3)		
Corner 1	28°44'19.54"S	20°49'47.09"E
Corner 2	28°44'19.79"S	20°49'47.58"E
Corner 3	28°44'20.31"S	20°49'47.19"E
Corner 4	28°44'20.00"S	20°49'46.72"E
Solar Panels - Stage 1 Corner coordinates (Red Polygon Figure 3)		
Corner 1	28°44'22.71"S	20°49'35.21"E
Corner 2	28°44'24.73"S	20°49'38.24"E
Corner 3	28°44'28.74"S	20°49'34.84"E
Corner 4	28°44'24.77"S	20°49'38.22"E
Solar Panels - Stages 2 to 7 Corner coordinates (Red Polygon Figure 3)		
Corner 1	28°44'10.92"S	20°49'33.49"E
Corner 2	28°44'15.76"S	20°49'36.02"E
Corner 3	28°44'24.17"S	20°49'26.99"E
Corner 4	28°44'22.58"S	20°49'27.06"E
Corner 5	28°44'11.93"S	20°49'25.55"E
Corner 6	28°44'11.31"S	20°49'26.22"E
Corner 7	28°44'15.16"S	20°49'28.93"E

Alternative 2 (*Yellow Polygon Figure 3)*		
Description		
Alternative 1 proposes utilising the entire property, as indicated by the yellow polygon. This option allows for maximum land development, encompassing all available space for the solar PV plant, energy storage, and EV charging infrastructure, including the agricultural land. Disadvantages of Alternative 1: • Higher Environmental Impact: Developing the entire property would lead to greater habitat disruption and land transformation. • Increased Costs: A larger area would require more extensive site preparation and infrastructure development, raising the overall project cost. • Lower Sustainability Appeal: This alternative may contradict sustainable development principles by unnecessarily using more land than needed. • Visual Intrusiveness: The larger development footprint could significantly alter the visual landscape, potentially attracting negative feedback from stakeholders or surrounding communities.		
	Lat (DDMMSS)	Long (DDMMSS)
Solar Panels - Stages 1 to 7 Corner coordinates		
Corner 1	28°44'0.16"S	20°49'27.22"E
Corner 2	28°44'15.19"S	20°49'36.10"E
Corner 3	28°44'17.95"S	20°49'38.19"E
Corner 4	28°44'21.43"S	20°49'35.34"E
Corner 5	28°44'22.69"S	20°49'36.24"E
Corner 6	28°44'20.33"S	20°49'42.06"E
Corner 7	28°44'33.53"S	20°49'29.88"E
Corner 8	28°44'31.80"S	20°49'27.59"E
Corner 9	28°44'27.78"S	20°49'31.18"E
Corner 10	28°44'22.36"S	20°49'27.02"E
Corner 11	28°44'11.83"S	20°49'25.20"E
Corner 12	28°44'10.49"S	20°49'25.86"E
Corner 13	28°44'4.82"S	20°49'22.15"E

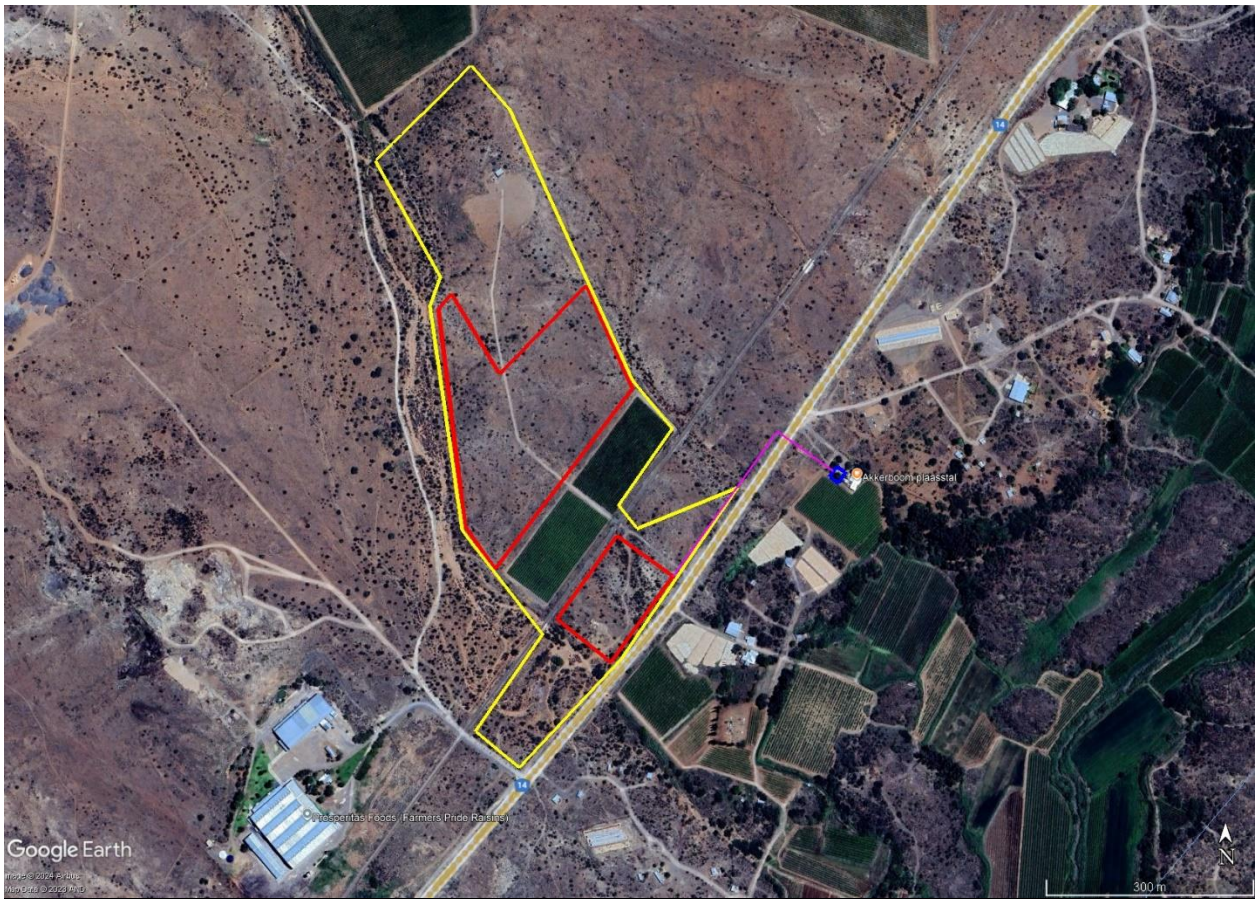


Figure 3. Image illustrating the location of the charging station (blue polygon), transmission cable (purple line), preferred alternative for the solar panels (red polygons) and alternative 1 for the solar panels (yellow polygon) (Appendix A).

c) Technology alternatives

Alternative 1 (preferred alternative)
The proposed project will utilise cutting-edge renewable energy and electric vehicle (EV) charging technologies, focusing on efficiency, safety, and sustainability. The core components include: 1. **Bifacial Monocrystalline PV Panels**: o The solar panels capture sunlight from both sides, enhancing energy generation. With a capacity of approximately 7 MW, the panels will generate solar power for the EV charging facility. 2. **Lithium Iron Phosphate Batteries**: o These batteries provide reliable energy storage and are known for their long lifespan, safety, and stability. They feature liquid cooling systems to maintain optimal temperature and include fire suppression mechanisms to ensure safety. 3. **Ultra-Fast EV Chargers**: o These high-capacity chargers (480 kW each) are equipped with liquid-cooled cables and connectors, enabling rapid charging of EVs. Each ultra-fast charger has 6 charging points, supporting fast turnaround times for vehicles. 4. **Slow EV Chargers**: o For users who do not require rapid charging, the facility will also feature slow chargers, each with a capacity of 22 kW, ideal for longer charging durations. 5. **Backup Generator**:

○ A backup generator will ensure uninterrupted power to the facility in case of any system failures or power shortages, enhancing reliability. Additionally, the project will utilize approximately 300 meters of transmission cables for stage 1, with an extra 450 meters required for future stages (2–7), ensuring the seamless distribution of energy across the infrastructure.
Alternative 2
NA
Alternative 3
NA

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)		
NA		
Alternative 2		
NA		
Alternative 3		
NA		

e) No-go alternative

This would mean that no-development would take place, and the proposed site will remain as is. The positive impacts of the development, as discussed extensively in section A:10 and Section B:8 of this report, will not be met. The no-go option would only have been recommended if it were found that the construction of the proposed development on this site or in this area might potentially cause substantial detrimental harm to the environment. According to the Terrestrial Biodiversity Report (Appendix D2), the "No Go" alternative means there would be no change to the status quo. The site will continue to be used as grazing. The No-Go alternative will mean no loss of vegetation or connectivity. The impact on the National and Provincial protected plant species will not occur. The land would remain in its natural state and any changes that would occur would only be attributable to agriculture and external factors such as climate change.

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	**Size of the activity:**
Alternative A1[1] (preferred activity alternative)	Approximately 78 247m^2
Alternative A2 (if any)	Approximately 215 893 m^2
Alternative A3 (if any)	

[1] "Alternative A.." refer to activity, process, technology or other alternatives.

or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	[redacted]
Alternative A2 (if any)	
Alternative A3 (if any)	

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)	Approximately 78 247m^2
Alternative A2 (if any)	Approximately 215 893 m^2
Alternative A3 (if any)	[redacted]

4. SITE ACCESS

Does ready access to the site exist?	**YES** [redacted]
If NO, what is the distance over which a new access road will be built	[redacted]

Describe the type of access road planned:

The charging station will utilise the already existing access road to Akkerboom Padstal, just of the N14 (Figure 4).

Figure 4. Existing road to be utilised to access the proposed charging station.

The solar panels will be accessed using the already existing farm roads (Figure 5).

Figure 5. Existing farm road to be used to access the solar panels.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities 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:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;

- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	**YES**	[redacted]
The property is zoned **Agricultural I**. A Consent Use Application is required and currently being applied for.		

2. Will the activity be in line with the following?

(a) Provincial Spatial Development Framework (PSDF)	**YES**	

The proposed development aligns well with the Northern Cape Provincial Spatial Development Framework (PSDF) goals (Northern Cape PSDF 2020). Key areas of alignment include:

- **Renewable Energy Focus**: The PSDF emphasizes the development of renewable energy, aiming for 25% of the province's energy generation capacity to come from renewable sources by 2030. The proposed solar PV plant directly supports this by contributing to sustainable energy production.
- **Economic Development**: The PSDF identifies renewable energy as a significant mechanism for economic development. The solar plant, along with its supporting infrastructure, aligns with this by fostering local economic growth through clean energy initiatives.
- **Infrastructure Coordination**: The PSDF encourages the concentration of renewable energy projects along bulk electrical infrastructure. The proposed development's inclusion of battery storage and electric vehicle infrastructure further supports this coordinated approach.
- **Sustainability Principles**: The PSDF promotes sustainable development, including the responsible use of resources and minimizing environmental impacts. By implementing solar panels and sustainable energy systems, the development aligns with these sustainability goals.

In addition, the construction and operation of this facility can generate direct employment opportunities in both the construction phase (engineering, assembly, and installation jobs) and the operational phase (maintenance, security, and facility management). Moreover, the PSDF stresses the importance of economic diversification and creating linkages between sectors, which suggests that the local community could benefit from increased disposable income and the demand for goods and services.

In summary, the development aligns with the PSDF's objectives of job creation, economic development, and sustainable infrastructure, particularly through private-sector investments in high-potential nodes like renewable energy.

(b) Urban edge / Edge of Built environment for the area		**NO**

The proposed development is located alongside the N14 between Keimoes and Kakamas and is located on **Agricultural Land**. However, the proposed development will play an essential role to the rural economic development, thereby justifying an exception of the urban edge.

(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	**YES**	

The proposed development aligns well with the Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Kai! Garib Local Municipality.

The IDP emphasizes **renewable energy** as a strategic priority for economic development, job creation, and infrastructure growth in the region. The municipality has already welcomed solar developments due to its favourable climate for solar energy. The IDP also highlights the potential for **job creation** linked to the construction and maintenance of solar energy projects, which fits well with the proposed development. Additionally, the Kai! Garib Municipality is actively pursuing partnerships with the private sector to promote renewable energy.

The SDF promotes the development of **renewable energy** projects, especially in areas that meet environmental criteria. The proposed development fits into the municipality's focus on green energy development. Furthermore, the SDF supports such projects as long as they do not compromise agricultural activities, which is addressed by ensuring the facility is located in a suitable area. The screening tool (Appendix J) shows the area to be medium agriculture sensitivity, and the Agricultural report supports that the development continues (Appendix D1).

The proposed activity will contribute positively to local economic goals and green energy initiatives, in line with both the IDP and SDF. It will not compromise the integrity of the municipality's existing development plans but will rather enhance them by contributing to economic growth and renewable energy targets.

(d) Approved Structure Plan of the Municipality	**YES**	

The proposed development appear to align with the approved structure plan of the Kai! Garib Local Municipality, according to the Spatial Development Framework (SDF).

The SDF emphasizes the need for sustainable development, including the promotion of renewable energy projects. The solar PV facility fits into this framework by contributing to energy sustainability while aligning with the broader goals of green energy promotion.

The SDF supports developments that enhance infrastructure, economic growth, and job creation in line with the municipality's strategic goals.

The municipality's spatial plans also encourage development in nodal areas, ensuring that projects like these are appropriately located to support regional economic nodes without disturbing existing urban boundaries.

Given these points, the proposed development is in line with the approved structure plan of the municipality. The project contributes to the municipality's strategic goals without compromising the integrity of the spatial plan.

(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)		**NO**	

The proposed development appears to align with the Environmental Management Framework (EMF) of the ZF Mgcawu District[2] (formerly Siyanda District) (Figure 6). The EMF emphasizes sustainable development that is appropriate to the unique environmental features of the region while integrating municipal and provincial decision-making.

Figure 6. Environmental Management Framework (Siyanda District Municipality EMF) relevant to the application according to the DFFE Screening Tool.

Sustainable Development:
The project aligns with the EMF's goal of promoting sustainable development by utilizing solar energy, a renewable resource, which reduces the dependence on non-renewable energy sources and mitigates the environmental impacts associated with traditional energy generation.

Alignment with Land Use and Environmental Priorities:
The EMF identifies appropriate land uses that support both economic growth and environmental conservation. The proposed development fits well within the district's goals for renewable energy and economic development, particularly in an area with high solar potential. The project also respects the sensitive environmental zones outlined in the EMF by minimizing impacts on biodiversity and prioritizing sustainable practices.

Water and Resource Management:
The EMF highlights the importance of managing scarce water resources, especially in the arid Northern Cape region. Solar PV projects generally have low water usage compared to other industrial activities, aligning with the framework's focus on conserving water and reducing environmental degradation

The approval of this application would not compromise the integrity of the existing environmental management priorities set out in the EMF. In fact, the project contributes positively to sustainability

goals by promoting renewable energy and economic growth in a manner that is compatible with the region's environmental constraints and resources. Therefore, it can be justified in terms of sustainability considerations.

(f) Any other Plans (e.g. Guide Plan)	**YES**	

The proposed activity aligns well with the structure plan and spatial planning goals, supporting both local and broader municipal objectives for sustainable development.

3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	**YES**	

The land use associated with the proposed development appears to be considered within the timeframe intended by the existing approved Spatial Development Framework (SDF) of the Kai! Garib Municipality. The SDF and Integrated Development Plan (IDP) clearly prioritize sustainable infrastructure development, including renewable energy projects, as key elements in their plans.

1. Alignment with SDF Goals: The SDF supports development that contributes to economic growth while maintaining environmental sustainability. The focus on renewable energy, particularly solar energy, aligns with the strategic objectives set out in the SDF to boost economic development while minimizing environmental impacts (if the preferred alternative is granted environmental authorisation)
2. Coordination with Environmental Authorities: The approved SDF highlights the need for environmental assessments for any projects involving land use changes, which would apply to renewable energy projects like this one. It ensures that projects comply with both municipal and environmental authority regulations.
3. IDP Priorities: The IDP underscores the importance of infrastructure investments in line with national energy priorities, and renewable energy projects have been identified as a means of achieving these goals. The proposed project supports the IDP's aim of diversifying the local economy and ensuring sustainable growth.

Given these factors, the proposed development is consistent with the priorities and timelines outlined in the municipality's SDF and IDP, thus aligning with the projects and programs identified as key priorities for the area.

[2] https://screening.environment.gov.za/ScreeningDownloads/EMF/SIYANDA_EMF_REPORT_2008.pdf

4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	**YES**	

The proposed development would meet both strategic and local needs, based on several factors outlined in the Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Kai! Garib Local Municipality.

Renewable energy is a national priority in South Africa, as part of the government's commitment to transitioning to a low-carbon economy and reducing greenhouse gas emissions by 2025. The New Growth Path emphasizes job creation within green industries, including the development of renewable energy projects, which is crucial for both economic growth and sustainability.

At the local level, renewable energy projects are essential for addressing electricity shortages and promoting economic development. Additionally, the region's favourable climate for solar energy supports the development of such projects.

Moreover, renewable energy development aligns with the IDP's emphasis on job creation and local economic growth, particularly through partnerships with the private sector. This project could provide significant employment opportunities during both the construction and operational phases, addressing local unemployment challenges.

Given this context, the proposed development addresses both strategic and local societal priorities, enhancing the area's renewable energy capacity without compromising local needs.

5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)		**NO**	

No additional services will be required from the local authority.

6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	

No additional services will be required from the local authority.

7. Is this project part of a national programme to address an issue of national concern or importance?	**YES**	

Yes, the proposed project is part of a national programme addressing a national concern—specifically, the transition to net-zero carbon emissions and the promotion of electric vehicle (EV) infrastructure powered by renewable energy.

Key Points of Alignment with National Concerns:

1. Transition to Renewable Energy: The project aligns with South Africa's national priorities for reducing reliance on fossil fuels and transitioning to renewable energy sources. The government's Integrated Resource Plan (IRP) and climate commitments aim to shift toward renewable energy, and this project directly contributes to these goals by utilizing solar power to support EV charging stations.
2. National Electric Vehicle Infrastructure: The roll-out of electric vehicle charging stations across South Africa addresses the critical need for infrastructure to support the future adoption of electric vehicles (EVs). This is crucial in reducing carbon emissions from the transport sector, which is a national priority.
3. Relief to National Grid: By using renewable energy to power these charging stations, the project contributes to easing the burden on South Africa's national electricity grid. This proactive measure prepares the country for the expected increase in EVs and helps prevent potential infrastructure bottlenecks as the EV market grows.

Thus, this project addresses national issues of carbon reduction and energy infrastructure improvements and is part of a broader national effort toward sustainable development and climate action.

8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	**YES**	

The location's solar energy potential, strategic positioning along major roads, and alignment with local economic goals favor this land use at the proposed site, making it a suitable and contextually appropriate development.

9. Is the development the best practicable environmental option for this land/site?	**YES**	

Given the area's high solar potential, minimal environmental impact compared to alternative land uses, and the development's alignment with both local and national sustainability goals, the proposed project is the best practicable environmental option for the site. It maximizes the efficient use of natural resources while minimizing environmental harm and giving future travelers/tourists in South Africa the opportunity to charge their Electric Vehicle.

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	**YES**	

Overall, the benefits of the proposed land use and development are expected to outweigh the negative impacts, making it a valuable and sustainable project for the region and for South Africa's broader environmental and economic goals.

11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	**YES**
The proposed development will indeed set a positive precedent for similar renewable energy projects and EV infrastructure development within the local municipality. It provides a model for sustainable growth and demonstrates the economic and environmental viability of such projects, encouraging future developments in line with regional and national goals.	
12. Will any person's rights be negatively affected by the proposed activity/ies?	**NO**
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	**NO**
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	**NO**

15. What will the benefits be to society in general and to the local communities?	Please explain

The proposed project will bring a wide range of benefits to both society and local communities. It will promote clean energy, job creation, economic growth, and sustainability while contributing to South Africa's long-term environmental and energy goals:

Benefits to Society in General:

1. Contribution to Carbon Reduction and Climate Goals:
   - The project directly supports South Africa's efforts to reduce carbon emissions by promoting clean energy and reducing reliance on fossil fuels. It is aligned with the national goal of achieving net-zero carbon emissions and combating climate change. This is essential for meeting the country's international climate commitments under agreements like the Paris Agreement.
2. Support for Electric Vehicle Adoption:
   - By establishing a network of EV charging stations, this project will facilitate the adoption of electric vehicles, reducing emissions from the transport sector. As more EVs enter the market, there will be a growing need for charging infrastructure, and this project will play a key role in building that network.
3. Energy Independence and Security:
   - The use of renewable solar energy reduces dependence on the national grid and fossil-fuel-based electricity, contributing to energy security. This is especially important as South Africa experiences challenges with power supply due to the ongoing strain on the national grid.

Benefits to Local Communities:

1. Job Creation:
   - The project will create direct employment opportunities during both the construction and operational phases. Jobs can become available in construction, maintenance, and operations, which will benefit local communities by providing a source of income and skills development.
2. Economic Development:
   - The development will stimulate local businesses, especially those integrated with the charging stations, such as farm stalls, shops, and guest houses. This could lead to increased tourism and business opportunities, generating economic growth for the area.
3. Infrastructure Improvement:
   - The establishment of EV charging stations will improve local infrastructure, making the region more accessible to electric vehicle owners and travelers. This contributes to sustainable transportation options for both residents and visitors.
4. Access to Clean Energy:
   - The use of solar power in the project will ensure that clean, renewable energy is used to power local infrastructure, reducing the environmental footprint of energy consumption. This aligns with broader sustainability goals and helps foster a cleaner environment for local residents (NC PSDF 2020).
5. Educational and Social Awareness:
   - The project will raise awareness of renewable energy and electric vehicles within local communities, encouraging a shift toward sustainability. This could lead to further local initiatives and education programs focused on the environment and green technologies.

16. Any other need and desirability considerations related to the proposed activity?	Please explain

Yes, there are several additional need and desirability considerations related to the proposed development that further strengthen its value and relevance:

1. Alignment with Sustainable Development Goals (SDGs):
    - The project aligns with several United Nations Sustainable Development Goals (SDGs), particularly:
        - SDG 7: Affordable and Clean Energy, by providing renewable energy through solar power.
        - SDG 9: Industry, Innovation, and Infrastructure, by building sustainable and modern infrastructure (EV charging stations).
        - SDG 13: Climate Action, by reducing carbon emissions and promoting climate resilience
2. Support for Long-Term Energy Resilience:
    - With growing pressure on South Africa's national grid, particularly due to ongoing power supply challenges, this project will provide energy resilience at both local and national levels. By using solar energy to power the EV charging stations, the project helps mitigate potential future energy shortages, especially as demand for EV infrastructure rises.
3. Enhancing Regional Connectivity and Mobility:
    - The location along the N14 between Keimoes and Kakamas is ideal for enhancing mobility and connectivity for electric vehicle users traveling long distances. This will be part of a broader national network of EV charging stations, ensuring that even rural or less-developed regions are included in the country's shift toward electric mobility.
4. Reduction of Air and Noise Pollution:
    - The project will promote the use of electric vehicles, which contribute to a reduction in air pollution and noise pollution. This is especially beneficial in rural areas where the air quality could be affected by emissions from traditional vehicles, improving the environmental health of the community.
5. Agricultural Synergy:
    - Given the agricultural focus of the Kai! Garib Municipality, the project's integration with existing farm stalls and businesses will create synergy between renewable energy and the agricultural sector. The project can support farmers and local businesses by enhancing both economic and environmental sustainability.
6. Tourism Potential:
    - The development of EV charging stations could potentially increase tourism by making the area more accessible to eco-conscious travelers driving electric vehicles. This would promote tourism in the Northern Cape, an area known for its natural beauty and cultural significance.
7. Local Community Upliftment:
    - As part of the Zero Carbon Charge initiative, the project is likely to engage with local communities to create awareness about renewable energy and sustainability, helping to foster community participation in environmental initiatives. This promotes social upliftment and educates the community about the benefits of renewable energy and sustainable practices.

8. Contribution to Energy Transition Readiness:

- As South Africa prepares for a national energy transition toward renewable energy and electric transportation, this project positions the local municipality as a leader in the adoption of sustainable technologies. It ensures that the region is future-ready for increased EV adoption and renewable energy use (NC PSDF 2020).

17. How does the project fit into the National Development Plan for 2030?	Please explain

The project fits well into the National Development Plan for 2030 by promoting renewable energy, enhancing infrastructure development, supporting job creation, ensuring energy security, fostering environmental sustainability, and encouraging regional development. It aligns with the NDP's vision for a low-carbon, inclusive, and resilient economy, making it a strategic and desirable development for both the local community and South Africa's broader national goals.

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

The general objectives of Integrated Environmental Management as outlined in Section 23 of NEMA have been taken into account through thorough environmental planning, public participation, impact assessment studies as described in Section B(3-9) below), and the application of best environmental management practices. These measures ensure that the project promotes sustainable development while minimizing its environmental impact and maximizing socio-economic benefits for the local community.

Integration of Environmental Management Principles 23(2)(a): The project aligns with the sustainability principles outlined in Section 2 of NEMA, such as the sustainable use of resources, the promotion of clean energy, and the reduction of greenhouse gas emissions. These principles have been incorporated into the decision-making process, ensuring that the development contributes to environmental sustainability and long-term societal benefits. The use of renewable solar energy reflects a commitment to reducing environmental harm.

Environmental Impact Assessment (EIA) (23(2)(b)): The project involves a thorough Basic Assessment (BA) process that identifies and evaluates the potential environmental, socio-economic, and cultural impacts. This BAR Process ensures that risks and consequences are identified, and it proposes mitigation measures to minimize negative impacts. For instance, impacts on biodiversity, local ecosystems, and socio-economic aspects have been considered, and measures are put in place to minimize harm. Socio-economic Benefits: The project also takes into account the positive socio-economic impacts, such as job creation and local economic growth, which will maximize benefits for the local community.

Comprehensive Planning and Evaluation (23(2)(c)): The environmental effects of the solar PV plant and EV charging station, including their long-term sustainability, have been adequately considered. The project aligns with both national and local environmental goals, and its reliance on clean, renewable energy reduces long-term environmental impacts. Before any actions are taken, the project undergoes rigorous environmental assessments to ensure that all potential effects are fully understood.

Public Participation Process (23(2)(d)): As part of this BAR process, a public participation process, ensuring that local stakeholders, including communities, businesses, and interest and affected parties, have an opportunity to voice concerns or provide input. This helps ensure that the community is involved in decisions that may affect their environment, thereby enhancing transparency and community engagement in the project.

Integration of Environmental Attributes (23(2)(e)): The BAR process carefully considers key environmental attributes, such as agriculture studies, biodiversity assessment, freshwater studies, visual impacts of the develop etc. Site selection and project design are based on minimizing disruption to these attributes while maximizing the use of the area's natural solar resources. This ensures that the development is environmentally appropriate for the location.

Best Environmental Practices (23(2)(f)): The project adopts best practices in environmental management, particularly in the use of solar technology, which is sustainable and efficient. The design and operational phases will incorporate energy-efficient technologies and environmental monitoring to ensure that the development remains in line with the principles of sustainable development. Additionally, the project uses environmental management tools that are well-suited to the nature of the development, ensuring minimal negative environmental impact.

Collaboration with Environmental Authorities (23(3)): The development complies with environmental legislation and involves coordination with various government departments to ensure it meets the objectives of Section 23.
19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.
The principles of environmental management outlined in Section 2 of NEMA have been fully integrated into the proposed development. Key principles, such as sustainability, equity, and public participation, are reflected in the project's design and implementation. The proposed development prioritizes social, economic, and environmental sustainability by promoting renewable energy, reducing carbon emissions, and creating local jobs. It ensures that potential negative impacts on biodiversity, ecosystems, and communities are minimized through comprehensive environmental impact assessments and mitigation strategies. Additionally, the proposed development fosters environmental justice by ensuring that benefits are distributed equitably, particularly to vulnerable communities, and allows for public participation throughout the decision-making process. By aligning with both local and national environmental policies, the proposed development contributes to South Africa's broader goals of climate action and sustainable development, ensuring responsible and efficient use of resources while protecting the environment for future generations.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Water Act	General Authorisation (Appendix K)	Department of Water and Sanitation	TBC
Northern Cape Nature Conservation Act, Act 9 of 2009	NCNCA Protected plant species located on the site	Department of Environment and Nature Conservation (DENC)	TBC

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	**YES** ☐
If YES, what estimated quantity will be produced per month?	m^3

How will the construction solid waste be disposed of (describe)?

The only significant waste that will be produced during construction is some general construction waste, which will be adequately disposed of as per the Environmental Management Program (Appendix G).

Where will the construction solid waste be disposed of (describe)?

The general solid waste generated during construction will be consolidated on site during construction and disposed of at the nearest approved municipal landfill site

Will the activity produce solid waste during its operational phase?	**NO**
If YES, what estimated quantity will be produced per month?	m^3

How will the solid waste be disposed of (describe)?

NA

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

No solid waste is expected to be generated during the operational phase.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

NA

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?	**NO**

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?	**NO**

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	**NO**
If YES, what estimated quantity will be produced per month?	
Will the activity produce any effluent that will be treated and/or disposed of on site?	**NO**

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?	**NO**

If YES, provide the particulars of the facility:

Facility name:	***NA***		
Contact person:	***NA***		
Postal address:	***NA***		
Postal code:	***NA***		
Telephone:	***NA***	**Cell:**	***NA***
E-mail:	***NA***	**Fax:**	***NA***

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

Rainwater harvesting is being proposed. Stormwater generated on the site will be harvested as far as possible for re-use, the remainder will be released into the environment in a controlled manner via overland flow.
The PV panels will be mounted on elevated structures where a gutter system will be mounted to collect the water runoff from the panels. The rainwater will then be collected through a reticulation network of tanks, pipes and pumps.

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities? **NO**
If YES, is it controlled by any legislation of any sphere of government?
If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.
If NO, describe the emissions in terms of type and concentration:

NA

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA? **NO**

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise? **NO**
If YES, is it controlled by any legislation of any sphere of government?

Describe the noise in terms of type and level:

13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal				**Other**	The activity will not use water

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month: litres
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs? **YES**
If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

14. ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

The proposed development is powered by renewable solar photovoltaics.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

NA

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A): [ ]

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? **YES** [ ]

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	***Northen Cape Province***
District Municipality	***ZF Mgcawu District Municipality***
Local Municipality	***Kai! Garib Local Municipality***
Ward Number(s)	***10***
Farm name and number	***Farm Frier's Dale No. 466***
Portion number	***Portions 19 & 47 Of Farm Frier's Dale No. 466***
SG Code	***C02800000000046600019*** ***C02800000000046600019***

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

Agriculture

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?	**YES**	

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

	1:50 – 1:20	

Alternative S2 (if any):

	1:50 – 1:20	

Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline		2.4 Closed valley		2.7 Undulating plain / low hills	
2.2 Plateau		2.5 Open valley		2.8 Dune	
2.3 Side slope of hill/mountain		2.6 Plain	X	2.9 Seafront	
2.10 At sea					

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1:		**Alternative S2 (if any):**		**Alternative S3 (if any):**	
Shallow water table (less than 1.5m deep)		**NO**	YES	NO	YES	NO
Dolomite, sinkhole or doline areas		**NO**	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)		**NO**	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil		**NO**	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)		**NO**	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)		**NO**	YES	NO	YES	NO
Any other unstable soil or geological feature		**NO**	YES	NO	YES	NO
An area sensitive to erosion		**NO**	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project

information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition E			
	Cultivated land		**Building or other structure**

If any of the boxes marked with an "E "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		**NO**
Non-Perennial River	**YES**	
Permanent Wetland		**NO**
Seasonal Wetland		**NO**
Artificial Wetland		**NO**
Estuarine / Lagoonal wetland		**NO**

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

According to the Freshwater Report (Appendix D4), there is a drainage line adjacent to the proposed development (Figure 7), originating from the Lower Orange River and Sak River. These drainage lines are mostly dry with water present only during rains and shortly thereafter.

Figure 7. Proposed development's proximity to drainage lines (blue).

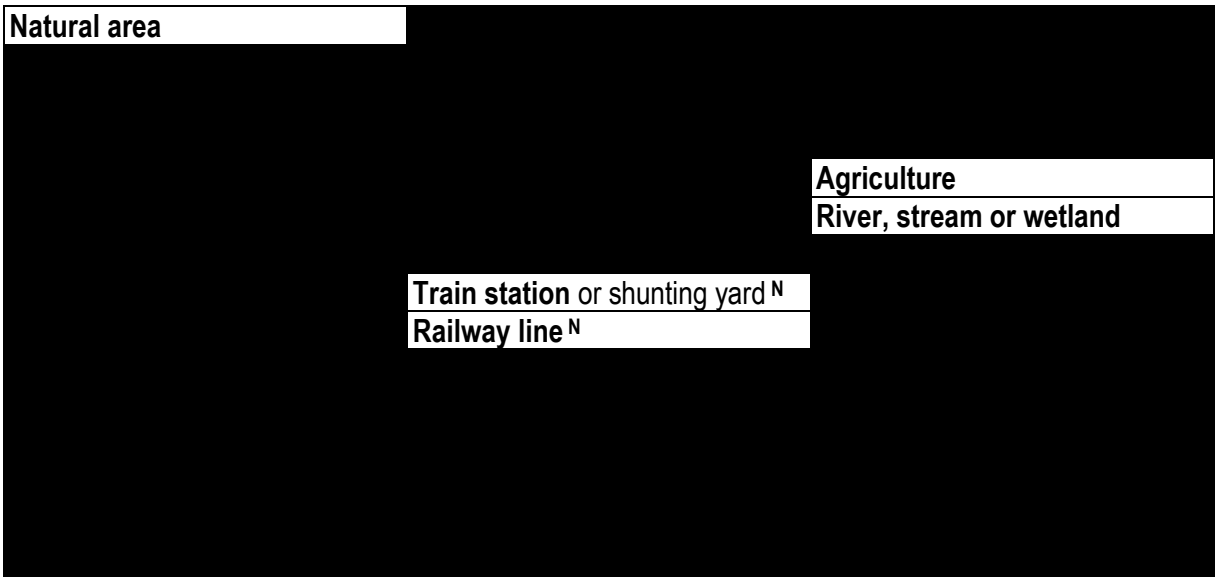
Drainage lines fan out to connect to one another in a broad and continuous fan, interconnected, with no visual demarcation between drainage lines. This is visible on Google Earth Images, as well as on the ground. During rainfall events, storm water spreads out all over, in a braided fashion, and the flow of water migrates sideways, left and right, to create this continuous fan of braided drainage lines known as sheet wash plains (Appendix D4).

The driver for the drainage lines is the occasional summer thunderstorm that unleashes its fury on the sandy substrate to scour out once more the drainage line and deposit sediments elsewhere to broaden the sheet wash plains on the level landscape.

Along with the rain, the groundwater is as important. There may not be any water visible on the surface, but below may be a constant flow, however small, of shallow groundwater that trickles down the riverbed to keep the riparian vegetation and the ecological corridor alive.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:



If any of the boxes marked with an "N "are ticked, how this impact will / be impacted upon by the proposed activity? Specify and explain:

The proposed development will have minimal to no impact on the railway line and train station due to its strategic placement. The solar panels will be located southwest and northwest of the railway line (Appendix A), ensuring they are far enough to avoid interference with the railway infrastructure. Additionally, the charging station will be situated at the Akkerboom farmstall, across the road, and safely distanced from the railway line, eliminating any operational concerns during its use. Furthermore, during construction, existing roads will be used to access the site, avoiding the need for new infrastructure that could disrupt railway operations. As a result, the development will not affect the railway line or train station, ensuring the project's activities have no significant impact on these features.

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

NA

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

NA

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	**YES**	
Core area of a protected area?		**NO**
Buffer area of a protected area?		**NO**

Planned expansion area of an existing protected area?		**NO**
Existing offset area associated with a previous Environmental Authorisation?		**NO**
Buffer area of the SKA?		**NO**

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:		**NO**

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

According to the Palaeontological and Heritage Report (Appendix D5), a low Palaeontological Significance has been allocated to the proposed development. It is therefore recommended that no further palaeontological heritage studies, ground truthing and/or specialist mitigation are required pending the discovery of newly discovered fossils. It is considered that the development of the proposed development will not lead to detrimental impacts on the palaeontological resources of the area (Butler, 2023).

Although all possible care has been taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the assessment. If during construction, any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit must be alerted as per section 35(3) of the NHRA. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit must be alerted immediately as per section 36(6) of the NHRA. Depending on the nature of the finds, a professional archaeologist or palaeontologist must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources are of archaeological or palaeontological significance, a Phase 2 rescue operation may be required, subject to permits issued by SAHRA. UBIQUE Heritage Consultants and its personnel will not be held liable for such oversights or costs incurred due to such oversights.

Will any building or structure older than 60 years be affected in any way?		**NO**
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?		**NO**

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

10% (Appendix D6)

Economic profile of local municipality:

The economic profile of the Kai! Garib Local Municipality, as presented in the Socio-Economic Site Sensitivity Verification report (Appendix D6) for the proposed development, highlights several key points:

- Population: The municipality has a population of 65,869, with a density of 2 persons/km² and a growth rate of 1.16%. The majority of the population is Coloured (62.2%), with Black Africans (28.3%) and smaller percentages of other groups.
- Unemployment Rate: The unemployment rate stands at 10%, indicating a moderate level of joblessness. The local economy could benefit from job creation opportunities linked to the proposed development.
- Income Distribution: Income levels show that 6.1% of the population has no income, while the majority earn between R9,601 and R38,200 annually. This reflects a wide range of economic conditions, with some vulnerable groups likely to benefit from new employment opportunities.
- Key Sectors: The economy is predominantly based on agriculture (51.8%), followed by community and government services (15.9%) and wholesale and retail trade (11.3%). This reliance on agriculture suggests that any new development should be carefully managed to avoid disrupting this key economic sector.

This profile suggests that the local economy would benefit from sustainable job creation and infrastructure improvements, making the proposed development potentially beneficial for the community.

Level of education:

Based on the Socio-Economic Site Sensitivity Verification (Appendix D6) report for the proposed development in the Kai! Garib Local Municipality, the level of education is notably low:

- 8.9% of adults in the municipality have completed matric or higher levels of education.
- A significant portion, 86.8%, has incomplete secondary education.
- 4.3% of the adult population has no schooling at all.

This indicates that the local population may benefit from skills development and educational programs related to the opportunities the proposed development can provide.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	Approximately R16 million
What is the expected yearly income that will be generated by or as a result of the activity?	Approximately R 16 million
Will the activity contribute to service infrastructure?	**YES**
Is the activity a public amenity?	**YES**
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Approximately 40
What is the expected value of the employment opportunities during the development and construction phase?	Approximately R14 million
What percentage of this will accrue to previously disadvantaged individuals?	Approximately 20%
How many permanent new employment opportunities will be created during the operational phase of the activity?	Approximately 40
What is the expected current value of the employment opportunities during the first 10 years?	Approximately R140 million
What percentage of this will accrue to previously disadvantaged individuals?	Approximately 20%

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category	If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan

Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	***The site's designation as a CBA is driven by the need to conserve biodiversity, maintain ecological processes, and ensure sustainable land-use practices that protect the environmental integrity of the region.*** **Conservation of Biodiversity:** • The area is important for **maintaining ecosystem functioning** and **conserving biodiversity**, particularly in relation to the **Orange River corridor**, which serves as a critical ecological link. The CBA status ensures that development in the area is managed to maintain its ecological integrity. **2. Habitat for Threatened Species:** • The CBA includes habitats that are essential for the conservation of certain **threatened or protected species**, even though no **red-listed** species were identified directly on the site during the assessment. However, the area supports species that contribute to the region's **biodiversity**. **3. Landscape Connectivity:** • The site is part of a larger landscape that is important for **ecological connectivity**, linking ecosystems and allowing species to move between different areas. This connectivity helps maintain **genetic diversity** and ensures the long-term viability of species populations. **4. Sustainable Land Use:** • The biodiversity plan recognizes the need to **balance development** with the conservation of natural areas. The selection of the site as a CBA emphasizes the importance of **minimizing environmental impact** while permitting land uses that can coexist with conservation priorities.

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	50%	The natural areas consist of Lower Gariep Alluvial Vegetation and Bushmanland Arid Grassland. These areas are classified as "Least Threatened" but are part of a Critical Biodiversity Area (CBA), requiring careful management. Some Camelthorn and Baobab trees were identified, which are protected.
Near Natural	30%	Near-natural areas have low to moderate levels of disturbance and some alien invasive species. These include areas where there has been minor human interference, but the natural vegetation is mostly intact.
Degraded	10%	Certain parts of the site show degradation, likely due to poor land management practices, such as overgrazing. Alien plant invasion is moderate, and there is evidence of some trampling and land degradation.
Transformed	10%	These are areas used for agriculture, roads, and other infrastructure, including areas adjacent to cultivated fields and the Akkerboom farmstall. These sections have been significantly altered from their natural state.

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and

(ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		**Aquatic Ecosystems**			
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	[redacted]	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)	Estuary	Coastline	
	Least Threatened	**YES**	[redacted]	**NO**	[redacted] **NO**

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

The terrestrial biodiversity report (Appendix D2) for the proposed development identifies two main vegetation types within the project area:

- **Lower Gariep Alluvial Vegetation** (Stage 1 of solar panels): This vegetation type occurs on alluvial terraces and riverine islands, supporting riparian thickets and reed beds. It is classified as "Least Threatened" under the National List of Ecosystems that are threatened and in need of protection.
- **Bushmanland Arid Grassland** (Stages 2–7 of solar panels): This semi-desert grassland is characterized by sparsely vegetated plains with Stipagrostis species and is also considered "Least Threatened".

The site overlaps **critical biodiversity areas (CBA) (Figure 2),** particularly linked to the conservation corridor along the Orange River. However, the site lacks any significant special habitats or features, such as rocky outcrops, and no red-listed or NEMBA-protected plant species were found on-site. Some protected species under the Northern Cape Nature Conservation Act, like Camelthorn and Baobab trees, were identified and will need protection.

The area also includes an episodic watercourse, but it is considered to have low sensitivity, and a freshwater specialist has assessed its impact (Appendix D4).

Two (2) species protected in terms of the **NCNCA** was observed, in the parking areas of the Akkerboom farm stall, as well as to the west of Phase 1 Solar site. The NCNCA Protected plant species: The Northern Cape Nature Conservation Act 9 of 2009 (NCNCA) came into effect on the 12th of December 2011, and provides for the sustainable utilization of wild animals, aquatic biota, and plants. Schedule 1 and 2 of the Act gives extensive lists of specially protected and protected fauna and flora species in accordance with this act. NB. Please note that all indigenous plant species are protected in terms of Schedule 3 of this act (e.g., any work within a road reserve). The Aloe Claviflora - Two patches observed in the rocky area to the east of the Phase 1 – Solar site, thus these plants will not be impacted if the preferred layout is approved as it falls outside the proposed development footprint of phase 1. It will, however, be affected if the alternative layout is approved as the whole portion of land will be developed (Appendix A – Alternative Locality Map).

Several multi-stemmed shrubs were observed within Phase 2 – 7 Solar facility area. No search & rescue is proposed. Boscia species seldom transplant successfully, because of their extensive and deep root system. An NCNCA Permit application must be submitted for the removal of these plant.

NFA Protected plant species: The National Forests Act (NFA) of 1998 (Act 84 of 1998) provides for the protection of forests as well as specific tree species (as updated).

Two species protected in terms of the NFA was observed, namely:

Adansonia digitata (Baobab Tree) – 3 trees planted by the owners, on the edge of the garden area of the existing Akkerboom farm stall (Even though this is not its natural distribution area, it should be protected).

Vachellia erioloba (Camelthorn Tree) – several trees within the garden and parking areas of the Akkerboom farm stall and about 7 trees on the edge or just outside of the Phase 1 – Solar site footprint (**All of the mature trees larger than 6m MUST be protected**).

Overall, the proposed development is **not considered of very-high sensitivity** in terms of Terrestrial Biodiversity as per the DFFE Screening Tool (Appendix J), but rather that of **medium-low with mitigation** measures (Appendix D2).

The following mitigation measures should be followed to minimize the disturbance footprint:

- All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan (EMP), which must be developed by a suitably experienced Environmental Assessment Practitioner.
- A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and any other conditions pertaining to specialist studies.
- Before any work is done the footprint must be clearly demarcated. The demarcation must aim at minimum footprint and minimisation of disturbance.
- All efforts must be made to protect the small watercourse to the west of the proposed solar facilities (as demarcated in the site sensitivity map - Figure 9).
- All mature Vachellia erioloba trees, larger than 6 m, must be protected during development and operation. No development should be considered underneath the canopy of any of the trees remaining on Portion 47 of the Farm Frier's Dale No. 466.
- The Vachellia erioloba and Adansonia digitata trees remaining and planted within the parking and garden area of the Akkerboom farm stall (on Portion 19 of the Farm Frier's Dale no. 466) must be protected.
- A National Forest Act licence application must be submitted if any of the identified Vachellia erioloba or Adansonia digitata trees will be impacted.
- A Northern Cape Nature Conservation Act permit must be obtained for impact on the protected species listed in Table 10 species.
- All alien invasive species within the footprint and its immediate surroundings must be removed responsibly.
    - Care must be taken with the eradication method to ensure that the removal does not impact or lead to additional impacts (e.g., spreading of the AIP due to incorrect eradication methods);
    - Care must be taken to dispose of alien plant material responsibly.
- Indiscriminate clearing of any area outside of these footprints may not be allowed.
- An integrated waste management approach must be implemented during construction**.**
    - Construction related general and hazardous waste may only be disposed of at approved waste disposal sites.
    - All rubble and rubbish should be collected and removed from the site to a Municipal approved waste disposal site.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Noord Kaap Bulletin	
Date published	06 July 2023	
Site notice position	**Latitude**	**Longitude**
Kai! Garib Local Municipality (Kakamas)	28°46'36.21"S	20°37'17.06"E
Agrimark (Kakamas)	28°46'8.18"S	20°36'51.84"E
Akkerboom Padstal	28°44'18.85"S	20°49'46.96"E
On the way to the proposed solar panels at the gate towards the train tracks	28°44'24.39"S	20°49'38.61"E
Agrimark (Keimoes)	28°42'21.31"S	20°58'6.41"E
Date placed	06 July 2023	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

Title, Name and Surname	**Affiliation/ key stakeholder status**	**Contact details (tel number or e-mail address)**
Gertruida Helana Compion	Neighbour	Phillip1972@gmail.com
LV Compion Familie Trust	Neighbour	Phillip1972@gmail.com
Zwart Boois Berg Boerdery Trust	Neighbour	marthia@orexexport.co.za
Mr HM de Wit	Neighbour	fdewet@gmail.com

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
No comments were received during the initial Public Participation Process in July 2023. Comments from the draft BAR will be addressed and submitted with the Final BAR.	

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders **(with initial PPP in 2023)**:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	E-mail	Postal address
Kai! Garib Local Municipality: Mayor	Mr. Marius M Louw	054 461 6314	mariuslouw111@gmail.com	Private Bag X6 Kakamas 8870
Kai! Garib Local Municipality: Municipal Manager	Dr. Johnny Mac Kay		j.mackey123456@gmail.com	Private Bag X6 Kakamas 8870
ZF Mgcawu District Municipality: Executive Mayor	Mr. M.J Basson	054 337 2800	bassonmariana@gmail.com	Private Bag X6039 Upington 8800
ZF Mgcawu District Municipality: Municipal Manager	Mr. Gilberta Lategan	054 337 2800	admin@zfm-dm.gov.za	Private Bag X6039 Upington 8800
ZF Mgcawu District Municipality: Good Governance & Public Participation	Cllr J Silo	054 337 2800	silojosef94@gmail.com	Private Bag X6039 Upington 8800
Dept of Public Works & Transport	Ms Jacqui Gooch	044 302 6317	jacqui.gooch@westerncape.gov.za	Private Bag X9185 Cape Town 8000
Eskom Transmission, Megawatt Park	Mr John Geeringh		john.geeringh@eskom.co.za	P.O. Box 1091 Johannesburg 2000
Civil Aviation Authority (CAA)	Ms Lizell Stroh		strohl@caa.co.za	Private Bag X73 Halfway House 1685
Department of Rural Development and Land Reform	Ms Pamela Booth		pbooth@knysna.gov.za	P. O. Box 21 Knysna 6570

Energy, Environmental and Spatial Planning	Mr D'mitri Matthews		Dmitri.Matthews@westerncape.gov.za	1 Dorp Street Cape Town 8001
SANRAL	Mr N Abrahams	062 002 1621	abrahamsn@nra.co.za	Private Bag X19 Bellville 7535
SANRAL	Ms René de Kock		Dekockr@nra.co.za	Private Bag X19 Bellville 7535
General Director: SA Department of Defence			csand@mil.za	Private Bag X910 Pretoria 0001
(Obstacle Evaluator)	Mr Graham Mondzinger	087 087 3188	obstacles@atns.co.za	
Department of Forestry, Fisheries and the Environment - CBO: Biodiversity Conservation	Mr Seoka Lekota	053 838 9102	BCAdmin@environment.gov.za	
Birdlife SA	Ms. Samantha Ralston -Patton	053 830 9513	energy@birdlife.org.za	
Land Use Scientist / Landscape West Cape Nature	Mr Ismat Adams		iadams@capenature.co.za	
Dept of Agri & Land Reform: HOD NC	Wonders Mothibi	054 338 5909		Private Bag X5018 Kimberley 8300
Dept of Cooperative Governance, Human Settlements & Traditional Affairs NC	Ms Gladys Botha	053 773 1239	gbotha@ncrpg.gov.za	Private Bag X5005 Kimberley 8300
Dept of Roads & Public Works	Ms Onkemetse Gill	021 957 4600	gonkemetse@ncrpg.gov.za	P.O. Box 3132 Kimberley 8301
Directorate Forestry Management	Ms Jacoline Mans	021 957 4600	Jmans@environment.gov.za	P.O. Box 2782 Upington 8800
Dept of Water & Sanitation NC	Ms R Mazwi	012 319 7508		Private Bag X6102 Kimberley 8300
SANRAL	JC van der Walt		vandermerwe@nrsa.co.za	Private Bag X19 Belville 7535
Dept of Environment & Nature Conservation	Mr Ordain Riba	012 406 7712	oriba.denc@gmail.com	Private Bag X6102 Kimberley 8300
Dept of Agri, Forestry & Fisheries	Anneliza Collett		annelizac@daff.gov.za; AnnelizaC@nda.agric.za	Private Bag X120 Pretoria 0001
Department of Defence	Mr Loy De Jager		loydejager@hotmail.com	

Department of Energy	Mpho Mabaso		mpho.mabaso@energy.gov.za	Private Bag X31 or 34 The Terraces Building Cape Town 8012
Department of Defence	Mr Zukile Mali		zukile.mali@yahoo.com	
Department of Defence	Mr Kebase Nosi		kebasenosi@yahoo.com	

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.
A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
Biodiversity	***Direct impacts:*** Special habitats: Potential impact on special habitats (e.g. true quartz or "heuweltjies")	**With mitigation**: Very Low (Negative)	Ensure that the watercourse is protected and could maintain its function as a migration corridor.
	Landuse and cover: Potential impact on socio-economic activities.	Very Low (Negative)	The impact is expected to have a positive impact on job creation.
	Vegetation status: Loss of vulnerable or endangered vegetation and associated habitat.	Very Low (Negative)	The impact on loss of vegetation is expected to be negligible.
	Conservation priority: Potential impact on protected areas, CBA's, ESA's or Centre's of Endemism.	Medium Low (Negative)	Ensure that the watercourse is protected and that the impact on Vachellia erioloba trees larger than 6m are protected.
	Connectivity: Potential loss of ecological migration corridors.	Low (Negative)	Ensure that the watercourse is protected and could maintain its function as a migration corridor.
	Protected and Endangered plant species: Potential impact on threatened or protected plant species.	Very Low (Negative)	Ensure that all mature Vachellia erioloba trees, larger than 6m are protected.
	Fauna and Avi-fauna: Potential impact on mammals, reptiles, amphibians and birds	Very Low (Negative)	Ensure that all mature Vachellia erioloba trees, larger than 6m are protected.

Activity	Impact summary	Significance	Proposed mitigation
	Cumulative impacts:	Medium Low (Negative) With Mitigation	Ensure that the watercourse is protected and that the impact on Vachellia erioloba trees larger than 6m are protected.
Freshwater	***Indirect impacts:*** Drainage lines	With mitigation: Low (Negative)	Prevent loose soil and sediments from moving down the drainage line along with stormwater.
Heritage	***Direct impacts:*** Palaeontological heritage	With mitigation: Low (Negative)	If fossil remains are discovered during any phase of construction, either on the surface or below, the ECO in charge of these developments must be alerted immediately. These discoveries should be protected (if possible, in situ), and the ECO must report to SAHRA so that appropriate mitigation can be carried out by a professional palaeontologist
Socio-Economic	***Direct impacts:*** Economically, environmental, socially, physically, culturally	Medium	Engage with local businesses, especially existing farm stalls and guest houses, to assess impact and explore collaborative opportunities for stimulating the local economy. Adhere to general Environmental Management Programme (EMPr) guidelines to mitigate noise and visual impacts in mixed residential areas. No direct action required for Eskom overhead lines, but maintain situational awareness for potential local grid instability. Develop marketing strategies to promote the unique selling point of the EV charging station, considering its potential to boost local economy and tourism. Implement skills development programs targeting the local community to prepare them for job opportunities in construction and maintenance.

Activity	Impact summary	Significance	Proposed mitigation
			Engage with local agricultural stakeholders to minimize disruption and explore opportunities for collaboration. Utilize existing internal farm gravel roads to minimize land use change. Develop a comprehensive traffic management plan to manage increased traffic during construction and operational phases. Confirm with SANRAL that no future railway development plans are anticipated that may create potential conflicts. Engage with local communities to identify and protect cultural and heritage sites.
Visual	***Direct impacts:*** Altered Landscape and Sense of Place Visibility of the facility Water Resources Vegetation Existing Infrastructure Dust Visual Exposure Cultural and Living Landscape Tourism and Scenic Features	Medium Low	Implement natural vegetative buffers or earth berms around the facility to minimize its visual impact, especially near water features and residential areas. Use non-reflective, earth-toned materials for all built structures to blend them into the natural landscape and reduce glare. Post-construction, undertake a re-vegetation program using indigenous plant species to restore any disrupted areas and enhance the site's Visual Absorption Capacity (VAC). Implement dust control measures and restrict construction activities to daylight hours to minimize visual and atmospheric impacts. Develop and implement a traffic management plan to control construction-related traffic,

Activity	Impact summary	Significance	Proposed mitigation
			minimizing visual and safety impacts on the N14 highway and other local roads. Conduct a comprehensive Heritage Impact Assessment (HIA) that specifically includes the graves identified on the neighboring farm to evaluate their cultural significance and potential visual impact. Based on the findings, implement protective measures that may include demarcation, buffering zones, or even relocation, if feasible and culturally appropriate. This will ensure that the development is sensitive to the newly identified cultural elements and maintains the integrity of the broader cultural and living landscape. Install educational signage that explains the environmental benefits of the solar PV and EV charging facility, turning a potential visual intrusion into an educational opportunity if feasible. Design the layout of solar panels to follow the natural contours of the land, reducing the visual impact and need for extensive land grading.
No-go option			
	Direct impacts: This would mean that no development will take place and the proposed site will remain as is.	Insignificant	NA
Alternative 2			
	Direct impacts: Protected and Endangered plant species: Potential impact on threatened or protected plant species.	High (Negative)	The Aloe Claviflora - Two patches observed in the rocky area to the east of the Phase 1 – Solar site, thus these plants will not be impacted if the preferred layout is approved as it falls outside the proposed development footprint of

Activity	Impact summary	Significance	Proposed mitigation
			phase 1. It will, however, be affected if the alternative layout is approved as the whole portion of land will be developed (Appendix A – Alternative Locality Map).

A complete impact assessment in terms of Regulation 19(3) of GN 733 must be included as Appendix F.

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative A (preferred alternative)

Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	**Aspect**	**Impact**	**Environmental Significance (without Mitigation)**	**Proposed Mitigation (i.e. Proposed mitigation to reverse/ avoid, manage or mitigate identified impacts associated with construction, operation, and decommissioning/ closure phases)**	**Environmental Significance (After Mitigation)**
CONSTRUCTION PHASE					
1	Biodiversity	**Special habitats**: Potential impact on special habitats (e.g. true quartz or "heuweltjies")	**Very Low (Negative)**	Ensure that the watercourse is protected and could maintain its function as a migration corridor.	**Very Low (Negative)**
2		**Landuse and cover:** Potential impact on socio-economic activities.	**Very Low (Negative)**	The impact is expected to have a positive impact on job creation.	**Very Low (Negative)**
3		**Vegetation status**: Loss of vulnerable or endangered vegetation and associated habitat.	**Very Low (Negative)**	The impact on loss of vegetation is expected to be negligible.	**Very Low (Negative)**
4		**Conservation priority:** Potential impact on protected areas, CBA's, ESA's or Centre's of Endemism.	**Medium (Negative)**	Ensure that the watercourse is protected and that the impact on Vachellia erioloba trees larger than 6m are protected.	**Medium Low (Negative)**
5		**Connectivity:** Potential loss of ecological migration corridors.	**Medium Low (Negative)**	Ensure that the watercourse is protected and could maintain its function as a migration corridor.	**Low (Negative)**

Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	**Aspect**	**Impact**	**Environmental Significance (without Mitigation)**	**Proposed Mitigation (i.e. Proposed mitigation to reverse/ avoid, manage or mitigate identified impacts associated with construction, operation, and decommissioning/ closure phases)**	**Environmental Significance (After Mitigation)**
6		**Protected and Endangered plant species**: Potential impact on threatened or protected plant species.	**Medium Low (Negative)**	Ensure that all mature Vachellia erioloba trees, larger than 6m are protected.	**Very Low (Negative)**
7		**Fauna and Avi-fauna:** Potential impact on mammals, reptiles, amphibians and birds	**Low (Negative)**	Ensure that all mature Vachellia erioloba trees, larger than 6m are protected.	**Very Low (Negative)**
8		**Cumulative** impact associated with proposed activity.	**Medium (Negative)**	Ensure that the watercourse is protected and that the impact on Vachellia erioloba trees larger than 6m are protected.	**Medium Low (Negative)**
9	Freshwater	Drainage lines	**Medium (Negative)**	Prevent loose soil and sediments from moving down the drainage line along with stormwater.	**Low (Negative)**
10	Heritage	Palaeontological heritage	**Medium (Negative)**	If fossil remains are discovered during any phase of construction, either on the surface or below, the ECO in charge of these developments must be alerted immediately. These discoveries should be protected (if possible, in situ), and the ECO must report to SAHRA so that appropriate mitigation can be carried out by a professional palaeontologist.	**Low (Negative)**
11	Archaeological	No impacts expected	No further mitigation is recommended concerning these resources.		
12	Palaeontology	No impacts expected	No further mitigation is recommended concerning these resources.		
13	Agriculture	No impacts expected	No further mitigation is recommended concerning these resources.		

Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	**Aspect**	**Impact**	**Environmental Significance (without Mitigation)**	**Proposed Mitigation (i.e. Proposed mitigation to reverse/ avoid, manage or mitigate identified impacts associated with construction, operation, and decommissioning/ closure phases)**	**Environmental Significance (After Mitigation)**
14	Socio-Economic	Economically, environmental, socially, physically, culturally	**Medium (Negative)**	Engage with local businesses, especially existing farm stalls and guest houses, to assess impact and explore collaborative opportunities for stimulating the local economy. Adhere to general Environmental Management Programme (EMPr) guidelines to mitigate noise and visual impacts in mixed residential areas. No direct action required for Eskom overhead lines, but maintain situational awareness for potential local grid instability. Develop marketing strategies to promote the unique selling point of the EV charging station, considering its potential to boost local economy and tourism. Implement skills development programs targeting the local community to prepare them for job opportunities in construction and maintenance. Engage with local agricultural stakeholders to minimize disruption and explore opportunities for collaboration. Utilize existing internal farm gravel roads to minimize land use change. Develop a comprehensive traffic management plan to manage increased traffic during construction and operational phases. Confirm with SANRAL that no future railway development plans are anticipated that may create potential conflicts. Engage with local communities to identify and protect cultural and heritage sites	**Medium (Negative)**
15	Visual	Altered Landscape and Sense of Place Visibility of the facility Water Resources	**Medium (Negative)**	Implement natural vegetative buffers or earth berms around the facility to minimize its visual impact, especially near water features and residential areas.	**Medium Low (Negative)**

Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	**Aspect**	**Impact**	**Environmental Significance (without Mitigation)**	**Proposed Mitigation (i.e. Proposed mitigation to reverse/ avoid, manage or mitigate identified impacts associated with construction, operation, and decommissioning/ closure phases)**	**Environmental Significance (After Mitigation)**
		Vegetation Existing Infrastructure Dust Visual Exposure Cultural and Living Landscape Tourism and Scenic Features		Use non-reflective, earth-toned materials for all built structures to blend them into the natural landscape and reduce glare. Post-construction, undertake a re-vegetation program using indigenous plant species to restore any disrupted areas and enhance the site's Visual Absorption Capacity (VAC). Implement dust control measures and restrict construction activities to daylight hours to minimize visual and atmospheric impacts. Develop and implement a traffic management plan to control construction-related traffic, minimizing visual and safety impacts on the N14 highway and other local roads. Conduct a comprehensive Heritage Impact Assessment (HIA) that specifically includes the graves identified on the neighboring farm to evaluate their cultural significance and potential visual impact. Based on the findings, implement protective measures that may include demarcation, buffering zones, or even relocation, if feasible and culturally appropriate. This will ensure that the development is sensitive to the newly identified cultural elements and maintains the integrity of the broader cultural and living landscape. Install educational signage that explains the environmental benefits of the solar PV and EV charging facility, turning a potential visual intrusion into an educational opportunity if feasible. Design the layout of solar panels to follow the natural contours of the land, reducing the visual impact and need for extensive land grading.	
OPERATIONAL PHASE					
16	Freshwater	Drainage lines	**Medium (Negative)**	Prevent litter and rubbish entering the drainage lines.	**Low (Negative)**

Alternative B

If the full extent of the property for stages 2 – 7 are approved, the negative impact on the biodiversity, heritage and freshwater will be greater than what is mentioned above. It is the EAP's opinion, that the preferred alternative be approved to minimise the potential impact by developing the entire property.

No-go alternative (compulsory)

This would mean that no-development would take place and the proposed site will remain as is. The positive impacts of the development, as discussed extensively in section A:10 and Section B:8 of this report, will not be met.

The no-go option would only have been recommended if it were found that the construction of the proposed development on this site or in this area might potentially cause substantial detrimental harm to the environment.

According to the Terrestrial Biodiversity Report (Appendix D2), The "No Go" alternative means there would be no change to the status quo. The site will continue to be used as grazing. The No-Go alternative will mean no loss of vegetation or connectivity. The impact on the National and Provincial protected plant species will not occur. The land would remain in its natural state and any changes that would occur would only be attributable to agriculture and external factors such as climate change.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	**YES**

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

Compliance with the EMPr, recommendations of the specialists and appointment of an ECO during the construction phase.

Is an EMPr attached?	**YES**

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

Zandria Jordaan

NAME OF EAP

SIGNATURE OF EAP

25 November 2024

DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation
Appendix E1: Proof of Newspaper Article Placed in the NoordKaap Bulletin (Initial PPP)
Appendix E2: Proof of Notification Letter to I&AP's & State Departments (Initial PPP)
Appendix E3: NA – **No comments received during Initial PPP**
Appendix E4: I&AP Database
Appendix E5: Proof of Site Notice Placements (Initial PPP)
Appendix E6: Newspaper Article (Initial PPP)
Appendix E7: Notification Letter (Initial PPP)
Appendix E8: Site Notice (Initial PPP)

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: DFFE Screening Tool