

# T-N003-01 Kopleegte

## Pre-application Scoping Report

THE PROPOSED KOPLEEGTE RENEWABLE SOLAR PV ENERGY GENERATION PLANT AND ELECTRIC TRUCK CHARGING FACILITY ON PORTION 11 OF THE FARM KOPLEEGTE NO. 1154 GS, OFF THE N3 HIGHWAY, NEAR WINTERTON, KWA-ZULU NATAL PROVINCE

### APPLICATION FOR:

Environmental Authorisation

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**PRE-APPLICATION SCOPING REPORT  
AND PLAN OF STUDY**

KZNEDTEA REF: To be provided

January 2025

**N3 ELECTRIC HIGHWAY CO.  
T-N003-01 KOPLEEGTE**

## EXECUTIVE SUMMARY

N3 Electric Highway Co. is proposing the development of the Kopleegte solar photovoltaic renewable energy generation plant and electric truck charging facility on Portion 11 of the Farm Kop Leegte No. 1154 GS, off the N3 highway, near Winterton, Kwa-Zulu Natal. The facility will include a solar photovoltaic (PV) energy generation facility connected to the electric vehicle and truck charging facilities via a distribution line with a capacity of approximately 33 kV. Additional infrastructure includes the development of a battery energy storage system, a wash bay, a stormwater pond, water tanks, a lounge area with a kitchen, ablution facilities with a septic tank, a shop, offices and associated infrastructure.

The proposed site is located off the N3, at the N3 and Winter/Colenso interchange (207), approximately 15 km east of Winterton, in the uThukela District Municipality, Kwa-Zulu Natal. An area of approximately 80 hectares (ha) will be considered and assessed.

The development will cover an area of approximately 38 ha, with the solar PV array occupying about 34 ha. This configuration will allow for an installed capacity of up to 34 megawatt-peak (MWp), which measures the maximum output of power from the solar array.

Site coordinates (approximate central point): 28°46'52.17"S ; 29°40'26.68"E.

The applicant - N3 Electric Highway Co. who will undertake the activity should it be approved, appointed EnviroAfrica CC as the independent Environmental Assessment Practitioner (EAP) to undertake the relevant EIA and the Public Participation Process required in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA).

A scoping exercise is being undertaken to present the proposed activities to the I&APs and to identify environmental issues discussed in this report and concerns raised as a result of the proposed development alternatives to date. The issues and concerns were raised by I&APs, authorities, the project team as well as specialist input, based on baseline studies undertaken.

This pre-application Scoping Report, being undertaken in terms of NEMA, summarises the process undertaken, the alternatives presented, and the issues and concerns raised. As a result of the above, the need for the following specialist studies, have been identified:

- Biodiversity Assessment
- Freshwater Assessment
- Heritage Impact Assessment
- Socio-economic Impact Assessment
- Visual Impact Assessment
- Agricultural Potential Assessment
- Avifauna Impact Assessment

These specialist studies have been conducted and some have been concluded. The findings of some the studies have already been included in this report, however, the studies will be finalised and the findings included during the EIA phase.

Any further issues raised as a result of the Public Participation Process will be dealt with during the EIA phase. The significance of the impacts associated with the alternatives proposed will be assessed in these specialist studies, as part of the EIA. Once all the specialist studies have been completed, they will be summarised in an Environmental Impact Report (EIR), which integrates the findings of the assessment phase of the EIA.

Based on the significance of the issues raised during the ongoing Public Participation Process and Scoping Phase, it is evident that an Environmental Impact Assessment (EIA) is required. ***It is therefore recommended that authorisation for the commencement of an EIA for the proposed development is granted.*** Should the EIA process be authorised, the issues raised in the process to date will be addressed and the specialist studies noted in this report, will be undertaken.

### **PRELIMINARY RECOMMENDATIONS / CONDITIONS FOR AUTHORISATION**

- In cases where there is not a significant impact on agricultural land, a diversification of income sources should be considered by the landowner(s). Through establishing an agreement between the applicant and the landowner(s); landowner(s) will be enabled to share in the profit generated from the charging facility, thereby offsetting their probable financial loss sustained through the loss of agricultural land (utilised or grazing mainly) over the development area.

**DOCUMENT CONTROL**

Version	Name	Role / Responsibility	Date
AA	Lian Roos	Author / First draft for review	09 July 2024
BB	Lian Roos	Author / Second draft for review	04 September 2024
CC	Clinton Geyser	Technical review	04 September 2024
DD	Lian Roos	Author / Third draft for review	20 January 2025
EE			
Final			

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## ACRONYMS

BGIS	Biodiversity Geographic Information System
CBA	Critical Biodiversity Area
DFFE	Department of Forestry, Fisheries and the Environment
DWS	Department of Water and Sanitation
KZNEDTEA	KwaZulu-Natal Department of Economic Development and Environmental Affairs
EAP	Environmental Assessment Practitioner
ECA	Environment Conservation Act (Act No. 73 of 1989)
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMP	Environmental Management Programme
ESA	Ecological Support Area
EV	Electric Vehicle
EWR	Environmental Water Requirements
HIA	Heritage Impact Assessment



I&APs	Interested and Affected Parties
MWp	Megawatt peak
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act (Act No. 10 of 2004)
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
NID	Notice of Intent to Develop
NWA	National Water Act
OESA	Other Ecological Support Area
PV	Photovoltaic
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SEF	Solar PV Energy Generation Facility
VIA	Visual Impact Assessment
WULA	Water Use Licence Application

# 1 INTRODUCTION

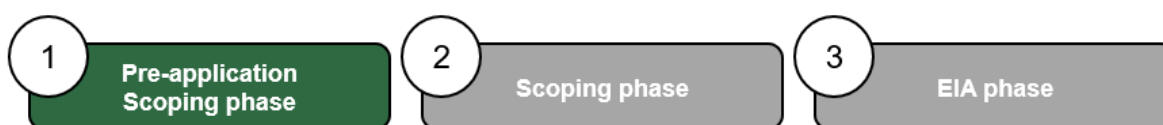
## 1.1 BACKGROUND

N3 Electric Highway Co. is proposing the development of the Kopleegte solar photovoltaic renewable energy generation plant and electric truck charging facility on Portion 11 of the Farm Kop Leegte No. 1154 GS, off the N3 highway, near Winterton, Kwa-Zulu Natal. The facility will include a solar photovoltaic (PV) energy generation facility connected to the electric vehicle and truck charging facilities via a distribution line with a capacity of approximately 33 kilovolts (kV). Additional infrastructure includes the development of a battery energy storage system, a wash bay, a stormwater pond, water tanks, a lounge area with a kitchen, ablution facilities with a septic tank, a shop, offices and associated infrastructure.

The proposed site is located off the N3, at the N3 and Winter/Colenso interchange (207), approximately 15 kilometer (km) east of Winterton, in the uThukela District Municipality, Kwa-Zulu Natal. An area of approximately 80 hectares (ha) will be considered and assessed.

Site coordinates (approximate central point): 28°46'52.17"S ; 29°40'26.68"E.

The applicant - N3 Electric Highway Co. who will undertake the activity should it be approved, appointed EnviroAfrica CC as the independent Environmental Assessment Practitioner (EAP) responsible for undertaking the relevant EIA and the Public Participation Process required in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA).



This pre-application Scoping Report falls within the pre-application Scoping phase which will be submitted to the Economic Department, Tourism and Environmental Affairs (EDTEA)(KwaZulu-Natal) for consideration, and forms part of the Scoping & EIA process. The purpose of this pre-application Scoping Report is to describe the proposed project, the process followed to date, to present alternatives and to list issues identified for further study and comment by specialists.

Should the Scoping & Plan of Study for EIA process be authorised by EDTEA, the Specialist Studies (noted in Section 8) will be undertaken, and the issues (noted in Section 6) will be investigated and assessed during the next phase of the process (Scoping phase).

## 1.2 DESCRIPTION OF THE PROPOSED ACTIVITY

N3 Electric Highway Co. is proposing the development of the Kopleegte solar photovoltaic renewable energy generation plant and electric truck charging facility on Portion 11 of the Farm Kop Leegte No. 1154 GS, off the N3 highway, near Winterton, Kwa-Zulu Natal. The facility will include a solar photovoltaic (PV) energy generation facility connected to electric vehicle and truck charging facilities via a distribution line with a capacity of approximately 33 kV. Additional infrastructure includes the development of a battery energy storage system, a wash bay, a stormwater pond, water tanks, a lounge area with a kitchen, ablution facilities with a septic tank, a shop, offices and associated infrastructure.

The solar PV plant will be connected to the electric vehicle and truck charging facilities via a distribution line with a capacity of approximately 33 kV. The development will cover an area of approximately 38

ha, with the solar PV array occupying about 34 ha. This configuration will allow for an installed capacity of up to 34 megawatt-peak (MWp), which measures the maximum output of power from the solar array.

In addition to the solar PV installation, the facility will include a battery energy storage system. A key component of the facility will be a battery energy storage system specifically designed to support electric vehicle and truck charging. This system will store the generated energy ensuring a reliable and continuous power supply for the charging stations, particularly during times of high demand.

In addition to the solar PV installation and battery storage, the development will incorporate several support structures. These will include a wash bay for cleaning, and a stormwater pond to manage runoff.

Rainfall on the site will be harvested for reuse, and any surplus or flood event stormwater will be managed and released in a controlled manner. Stormwater will be collected via pipes and drainage channels, then directed to an attenuation pond (stormwater), where excess water is stored and gradually released to prevent flooding. Elevated PV panels will have gutters to collect runoff, which will also be directed to the pond; the collected water will be treated for reuse.

To support staff and visitors, the facility will feature a lounge area with a kitchen, as well as ablution facilities equipped with a septic tank. Additionally, there will be a shop and office spaces to facilitate the operation and management of the facility and its services.

Vehicle and truck access to the site will be via an access point located 500 meters west of the N3 and the Winterton/Colenso interchange (207), along the Winterton/Colenso Road.

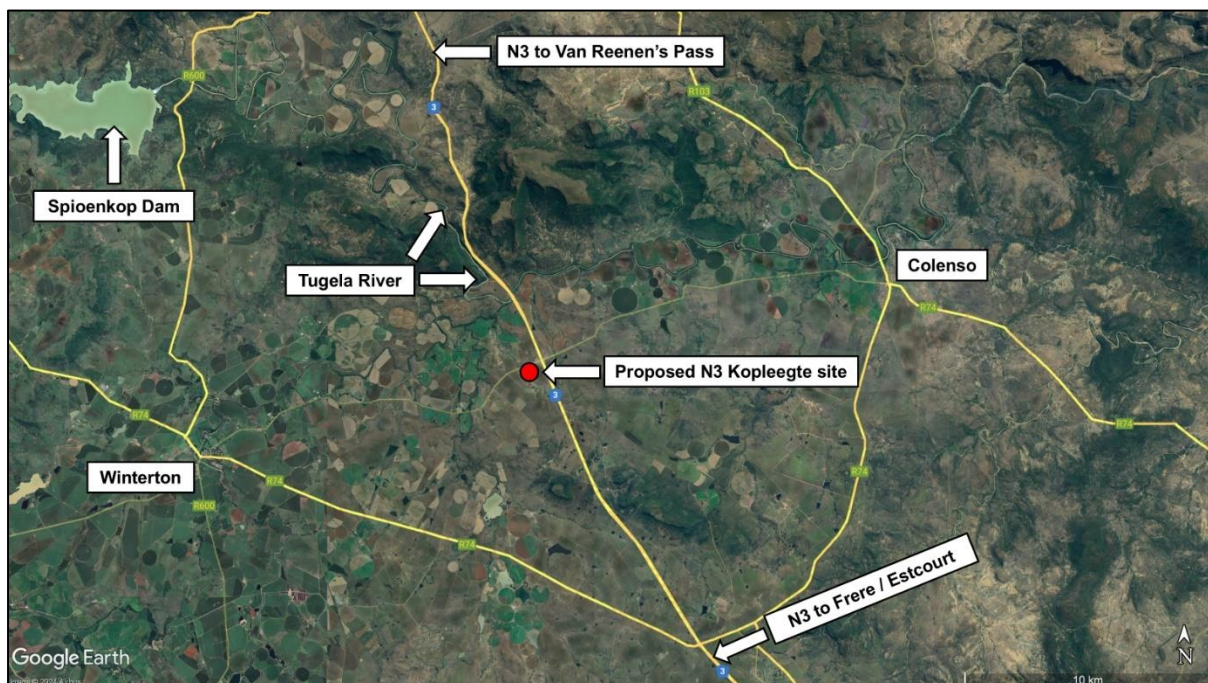


Figure 1: Google Earth image showing the locality of the proposed site (indicated by the red dot)





Figure 2: Google Earth image (1) of the proposed property and the development footprint (red polygon)

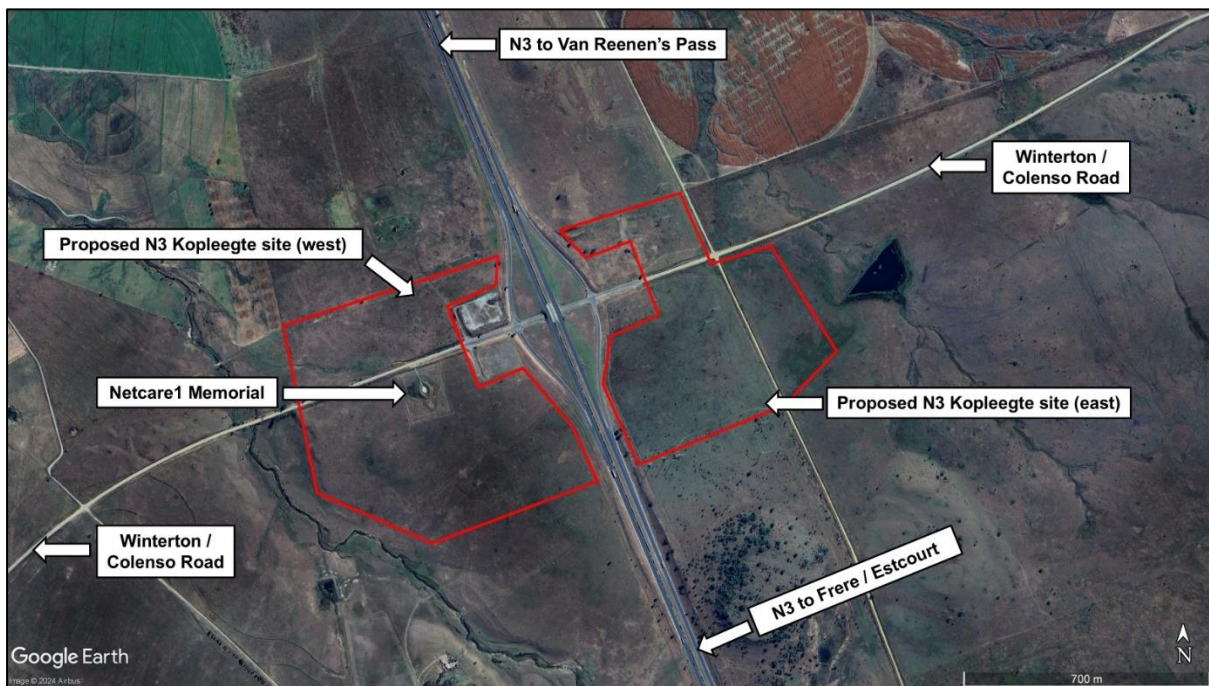


Figure 3: Google image of the proposed Kopleegte Recharging Station development footprint





## 2 NEED AND DESIRABILITY

In terms of the National Environmental Management Act, as amended, EIA 2014 regulations the Scoping & EIA reports must provide a description of the need and desirability of the proposed activity. The consideration of “need and desirability” in EIA decision-making requires the consideration of the strategic context of the development proposal along with the broader societal needs and the public interest.

While the concept of need and desirability relates to the *type* of development being proposed, essentially, the concept of need and desirability can be explained in terms of the general meaning of its two components in which *need* refers to *time* and *desirability* to *place* – i.e. is this the right time and is it the right place for locating the type of land-use/activity being proposed? Need and desirability can be equated to *wise use of land* – i.e. the question of what the most sustainable use of land is.

### 2.1 NEED

South Africa is committed to the Paris Agreement by making efforts to reduce greenhouse gas emissions (GHG) to 398-510 MtCO<sub>2</sub>e<sup>1</sup> by 2025 and 350-420 MtCO<sub>2</sub>e by 2030. In pursuant to the mission, the government has formulated the Green Transport Strategy for South Africa (2018-2050). As a part of this commitment, South Africa intends to widely adopt the use of electric vehicles (EVs) in its vehicle population to reduce the emissions from the Transport sector which accounts for 10.8% of the country’s total GHG emissions.

Currently the market share of EVs in South Africa is minimal (approximately 2300 vehicles), and if this number is to grow exponentially, the availability and accessibility of charging infrastructure for EVs will need to be seriously considered. While the push to electrify the automotive sector is well underway in urban and suburban areas, the same cannot be said for rural South Africa, with the lack of rural charging infrastructure remaining the most significant barrier to large-scale EV adoption.

In light of the current situation in South Africa, where the market share of EVs remains minimal, it becomes crucial to address the lack of reliable chargers, particularly in rural areas, to facilitate the exponential growth of EV adoption. The focus of EV adoption has been limited to passenger vehicles but heavy vehicles is as an important contributor to carbon emissions. As trucks generally follow major routes to transport the freight. Infrastructure must be developed independent of the existing grid to make the transportation of freight possible.

EV recharging stations in rural areas of South Africa especially along the N3 Route corridor (Durban, KwaZulu-Natal to Johannesburg, Gauteng) are imperative for ensuring efficient and sustainable transportation. With the growing demand for goods transport, particularly in the agricultural and industrial sectors, diesel-powered trucks dominate the highways. Introducing recharging stations specifically tailored for long-haul trucks not only facilitates smoother operations but also aligns with global efforts to reduce carbon emissions and dependence on fossil fuels. Moreover, investing in such infrastructure in rural communities can stimulate local economies and foster job creation, contributing to overall regional development. Thus, the establishment of EV recharging stations is not just a necessity but a strategic step towards a sustainable, more connected future for South Africa’s transport industry.

As part of the global energy crisis and the shift to renewable energy, the trend towards electric vehicles is ever growing, and South Africa will be no exception. High powered, ultra-fast charging is the minimum

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<sup>1</sup> Million Tonnes of carbon dioxide equivalent

viable standard to provide a stop and charge capability comparable with filling a vehicle with petrol or diesel (ZCC Info-Booklet, 2022). In South Africa, with a weak electrical grid and loadshedding, high power, ultra-fast charging will require on-site power generation, and with the need to charge when needed, a national network of charging facilities will be required (ZCC Info-Booklet, 2022).

## 2.2 DESIRABILITY

The following factors determine the desirability of the area for the proposed development:

### 2.2.1 Location and Accessibility

The proposed site is located on Portion 11 of the Farm Kop Leegte No. 1154 GS, off the N3, at the N3 and Winter/Colenso interchange (207), approximately 15 km east of Winterton, in the uThukela District Municipality, Kwa-Zulu Natal.

Site coordinates (approximate central point): 28°46'52.17"S ; 29°40'26.68"E.

The site is ideally located on the N3, the major route between Durban (with South Africa's busiest port) and Johannesburg (South Africa's largest city and economic hub). The N3 route is one of the busiest freight routes in South Africa, with trucks carrying an average of 50-million tons of freight per annum constitute around 38% of traffic on the N3<sup>2</sup>.

Trucks constitute approximately 44% of all vehicles travelling on the N3 Toll Route daily. During the past decade, a significant increase (between 8% and 10% per annum) in the number of trucks on the N3 Toll Route has been recorded. This is mainly due to the transfer of freight, especially bulk products, from rail to road. On average, 7000 trucks move thousands of tons of goods on the N3 every day<sup>3</sup>.

The property has been partially disturbed by current and past agricultural activities, mostly livestock grazing. The site is mostly well-managed, and the veld is in generally good condition, however, some parts show localised over-grazing.

The site falls within the KwaZulu-Natal Highland Thornveld vegetation type (Mucina and Rutherford, 2006; SANBI, 2018) which is currently listed as a Least Concern ecosystem at a national level (SANBI, 2021; DFFE, 2022). The site is therefore ideal, as there are no significant vegetation concerns on the site.

The general area is also ideally suited for a solar PV facility due to the relatively high irradiation levels. The Global Horizontal Irradiation (GHI) average for the area is 1896.9 kWh/m<sup>2</sup> according to the Global Solar Atlas (Figure 5)<sup>4</sup>. According to the Global Weather Corp Global horizontal irradiance (GHI) is a measurement of the total solar electromagnetic radiation above a horizontal surface at a given location and time. It is the most useful metric for predicting solar panel output. It accounts for 71.6% of PV performance variations.

According to the Department of Forestry, Fisheries and the Environment (DFFE) Screening Tool Report (Appendix 1), no intersections with Environmental Management Framework areas was found.

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<sup>2</sup> <http://www.n3tc.co.za/n3-toll-route-traffic-and-crash-data-provide-numerous-safety-clues/>

<sup>3</sup> <http://www.n3tc.co.za>

<sup>4</sup> <https://globalsolaratlas.info/map>

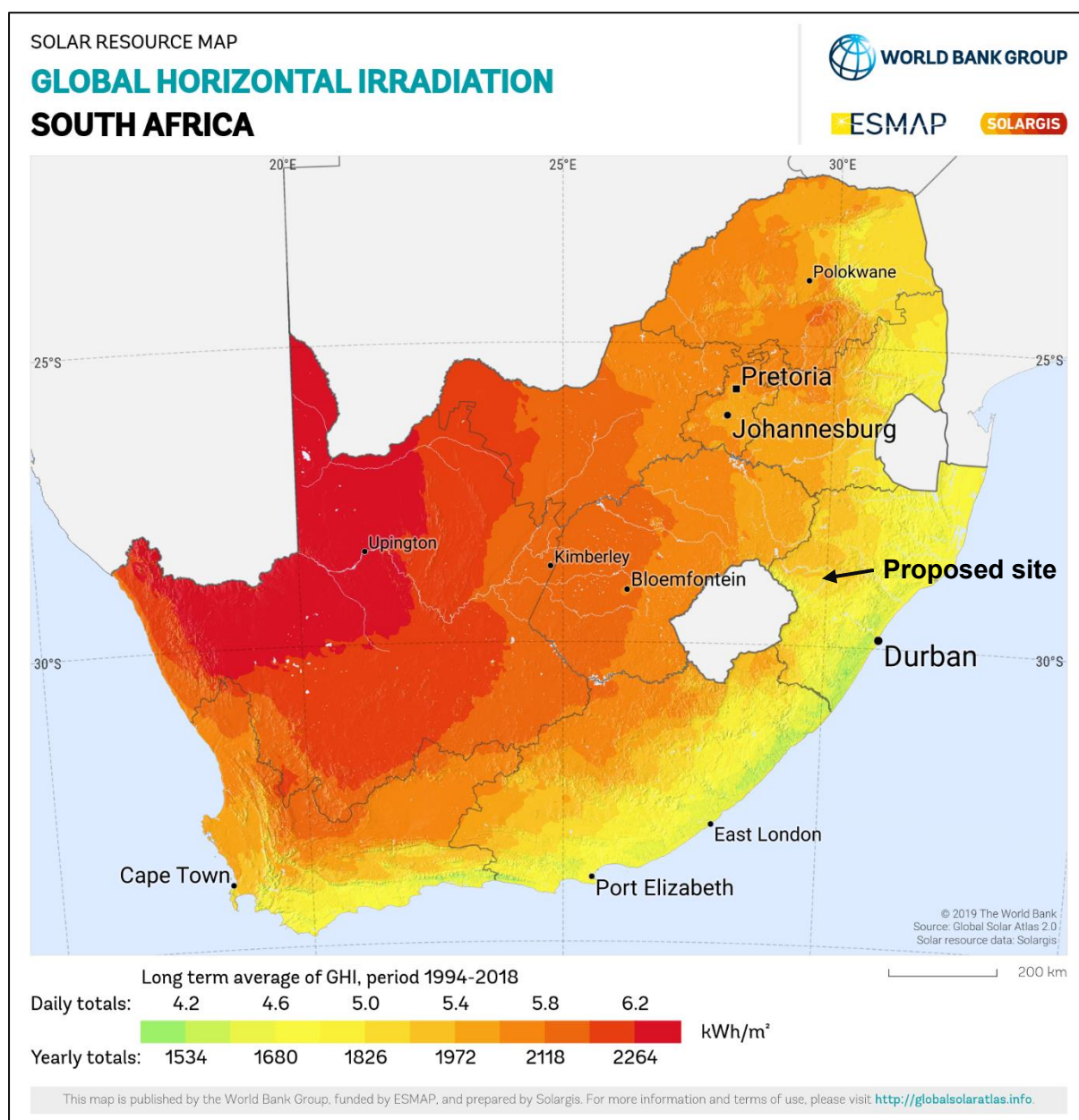


Figure 5: Global Solar Atlas image showing the Global Horizontal Irradiation levels for the proposed site

## 2.2.2 Compatibility with the Surrounding Area

The proposed activity is not within the existing land use rights of the property. The property is zoned Agricultural. A rezoning application in terms of SLUMA will be required. The surrounding land-uses are also predominantly agricultural in nature. The proposed development is not expected to significantly impact on people's health and well-being (e.g., in terms of noise, odours, etc.). However, the proposed development may have an impact on the visual character and "sense of place", since the property is within an agricultural area. This development supports the broader goals of promoting sustainable energy infrastructure while preserving the visual integrity of the KwaZulu Natal's scenic landscapes.



### 2.2.3 Objectives of Integrated Environmental Management

The general objectives of Integrated Environmental Management have been taken into account through the following:

- The actual and potential impacts of the activity on the environment, socio-economic conditions and cultural heritage have been identified, predicted and will be evaluated, as well as the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impact, maximizing benefits and promoting compliance with the principles of environmental management.
- The effects of the activity on the environment have been considered before actions taken in connection with them – *alternatives have been considered and will be investigated.*
- Adequate and appropriate opportunity for public participation is ensured through the public participation process.
- The environmental attributes have been considered in the management and decision-making of the activity – *an EMP will be compiled and included in the Environmental Impact Assessment Report for the proposed activity. The development must adhere to the requirements of all applicable state Authorities.*

### 2.2.4 Principles of Environmental Management

he principles of environmental management as set out in section 2 of NEMA have been taken into account. The principles pertinent to this activity include:

- People and their needs have been placed at the forefront while serving their physical, psychological, developmental, cultural and social interests – *the proposed activity will have a beneficial impact on people. However, potential negative impacts will also be investigated.*
- Development must be socially, environmentally and economically sustainable. Where disturbance of ecosystems, loss of biodiversity, pollution and degradation, and landscapes and sites that constitute the nation's cultural heritage cannot be avoided, are minimised and remedied. - *Although the activity is expected to have little significant environmental impact, these impacts have been considered, and mitigation measures have been put in place. This will also be dealt with in the EMP*
- Where waste cannot be avoided, it is minimised and remedied through the implementation and adherence of EMP.
- The use of non-renewable natural resources is responsible and equitable .
- The negative impacts on the environment and on people's environmental rights have been anticipated and will be prevented, and where they cannot be prevented, are minimised and remedied.
- The interests, needs and values of all interested and affected parties will be taken into account in any decisions through the Public Participation Process
- The social, economic and environmental impacts of the activity have been considered, assessed and evaluated, including the disadvantages and benefits – *will be addressed in the Environmental Impact Assessment Report.*
- The effects of decisions on all aspects of the environment and all people in the environment have been taken into account, by pursuing what is considered the best practicable environmental option – *the proposed activity is expected to have minimal/negligible environmental impacts, especially after mitigation measures as described in the specialist reports and in the EMP are implemented.*

### **3 LEGAL REQUIREMENTS**

The current assessment is being undertaken in terms of the National Environmental Management Act (Act 107 of 1998, NEMA), to be read with section 24 (5): NEMA EIA Regulations 2014. However, the provisions of various other Acts must also be considered within this EIA. The legislation that is relevant to this study is briefly outlined below:

#### **3.1 THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA**

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

#### **3.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)**

The National Environmental Management Act (Act 107 of 1998) (NEMA), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment, and which require authorisation from the relevant authorities based on the findings of an environmental assessment. NEMA is a national act, which is enforced by the Department of Forestry, Fisheries and the Environment (DFFE). These powers are delegated in KwaZulu-Natal to the Department of Economic Development, Tourism and Environmental Affairs (KZNEDTEA).

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

According to the regulations of Section 24(5) of NEMA, authorisation is required for the following listed activities for the proposed development i.e. Kopleegte Recharging Station (Table 1):

Table 1: NEMA Listed Activities

No.	Listed Activities as per Listing Notice 1, 2 and 3 (GN R327, R324, R325)	Applicability to the development
<b>Government Notice R327 (Listing Notice 1)</b>		
11.	The development of facilities or infrastructure for the transmission and distribution of electricity; <ul style="list-style-type: none"> <li>(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or</li> <li>(ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.</li> </ul>	The proposed solar PV plant and the electric vehicle and truck recharge facilities of the development will be connected via a 33 kV distribution line.
12.	The development of; <ul style="list-style-type: none"> <li>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres;</li> <li>(ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs; <ul style="list-style-type: none"> <li>a) within a watercourse;</li> <li>b) in front of a development setback; or</li> </ul> </li> </ul> if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse	In some areas within 32 meters of a watercourse, the proposed development's structures will have a physical footprint of 100 square meters or more.
19.	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving: <ul style="list-style-type: none"> <li>a) will occur behind a development setback</li> <li>b) is for maintenance purposes undertaken in accordance with a maintenance management plan;</li> <li>c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;</li> <li>d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</li> </ul> where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies	In some areas within 32 meters of a watercourse, the proposed development's structures will have a physical footprint of 10 square meters or more. Excavations, removal or moving of material of more than 10 cubic metres from a watercourse is likely to take place during construction.
24.	The development of a road; <ul style="list-style-type: none"> <li>(i) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or</li> <li>(ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;</li> </ul>	An access road of 9m is required for vehicles to gain access to the proposed development site.

No.	Listed Activities as per Listing Notice 1, 2 and 3 (GN R327, R324, R325)	Applicability to the development
	but excluding a road; c) which is identified and included in activity 27 in Listing Notice 2 of 2014; or d) where the entire road falls within an urban area; or e) which is 1 kilometre or shorter	
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.	The proposed development site will be located outside an urban area and will exceed 1ha of land utilised for agriculture.
<b>Government Notice R325 (Listing Notice 2)</b>		
1.	The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 MW or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs; a) an urban area; or b) On existing infrastructure	The proposed solar PV plant will allow for an installed capacity of up to 33.59 megawatt-peak (MWp), which measures the maximum output of power from the solar array. The site is outside an urban area. No exclusions apply.
15.	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for; (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	The proposed development site is 37.79 ha and will clear an area of 20 ha or more of indigenous vegetation over the proposed site. Indigenous vegetation will be cleared for the proposed development site even though the indigenous vegetation of the site has been identified as predominantly degraded.
<b>Government Notice R324 (Listing Notice 3)</b>		
4.	The development of a road wider than 4 meters with a reserve less than 13,5m	Internal roads wider than 4 m with a reserve less than 13,5 m is required for vehicles to gain access within the proposed development site for operational and maintenance purposes. The development site is outside an urban area.

No.	Listed Activities as per Listing Notice 1, 2 and 3 (GN R327, R324, R325)	Applicability to the development
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.	More than 300m <sup>2</sup> of indigenous vegetation will be cleared; and the proposed development site may be within 100m of the watercourses identified on site; and the proposed development site falls outside an urban area.
14.	<p>The development of</p> <ul style="list-style-type: none"> <li>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or</li> <li>(ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs <ul style="list-style-type: none"> <li>a) within a watercourse;</li> <li>b) in front of a development setback; or</li> </ul> </li> </ul> <p>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.</p>	In some areas within 32 meters of a watercourse, the proposed development's structures will have a physical footprint of 10 square meters or more.

An application form will be submitted to the KwaZulu-Natal Department of Economic Development and Environmental Affairs (KZNEDTEA). On acknowledgment from KZNEDTEA, the Scoping phase process will be initiated and undertaken to further identify potential issues.

### 3.3 NATIONAL HERITAGE RESOURCES ACT

The protection and management of South Africa's heritage resources are controlled by the National Heritage Resources Act (Act No. 25 of 1999).

Section 38(8) also makes provision for the assessment of heritage impacts as part of an EIA process and indicates that if such an assessment is found to be adequate, a separate HIA is not required.

Furthermore, in terms of Section 34(1), no person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the SAHRA, or the responsible resources authority. Nor may anyone destroy, damage, alter, exhume or remove from its original position, or otherwise disturb, any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority, without a permit issued by the SAHRA, or a provincial heritage authority, in terms of Section 36 (3). In terms of Section 35 (4), no person may destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object, without a permit issued by the SAHRA, or the responsible resources authority.

Section 38(1) of the NHRA of 1999 requires the responsible heritage resources authority to notify the person who intends to undertake a development that fulfils the following criteria to submit an impact assessment report if there is reason to believe that heritage resources will be affected by such event:

- the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- the construction of a bridge or similar structure exceeding 50m in length;
- any development or other activity that will change the character of a site
  - exceeding 5000m<sup>2</sup> in extent; or
  - involving three or more existing erven or subdivisions thereof; or
  - involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- the rezoning of a site exceeding 10 000m<sup>2</sup> in extent; or
- any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority.

### 3.4 EIA GUIDELINE AND INFORMATION DOCUMENT SERIES

The following are the latest guidelines and information Documents that have been consulted:

- Department of Environmental Affairs and Development Planning's (DEA&DP) *Environmental Impact Assessment Guideline and Information Document Series (Dated: March 2013)*:
  - *Guideline on Transitional Arrangements*
  - *Generic Terms of Reference for EAPs and Project Schedules*
  - *Guideline on Alternatives*
  - *Guideline on Public Participation*
  - *Guideline on Exemption Applications*
  - *Guideline on Appeals*
  - *Guideline on Need and Desirability*
- Department of Environmental Affairs and Tourism (DEAT) *Integrated Environmental Management Information Series*

### **3.5 NATIONAL WATER ACT**

Besides the provisions of NEMA for this EIA process, the proposed development will also require authorizations under the National Water Act (Act No. 36 of 1998)(NWA). The Department of Water and Sanitation (DWS), who administer that Act, will be a leading role-player in the EIA. A Water Use Licence Application (WULA) or General Authorisation, in terms of Section 21 (c) and (i) of the NWA may be required, however the level of authorisation will be determined by the specialist. The level of application once determine will run concurrently with the NEMA Application.

### **3.6 NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT**

The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) is part of a suite of legislation falling under NEMA, which includes the Protected Areas Act, the Air Quality Act, the Integrated Coastal Management Act and the Waste Act. Chapter 4 of NEMBA deals with threatened and protected ecosystems and species and related threatened processes and restricted activities. The need to protect listed ecosystems is addressed (*Section 54*).

### **3.7 THE SPATIAL PLANNING AND LAND USE MANAGEMENT ACT (ACT 16 OF 2013)**

The subject area falls under the jurisdiction of the local municipality and the appropriate zoning and subdivision would need to be allocated in order to permit the development of the land for the intended purpose. A rezoning and consent use planning application in terms of Section 35 of the SPLUMA regulations the Free State Bylaw on Municipal Land Use Planning.

### **3.8 THE CONSERVATION OF AGRICULTURAL RESOURCES ACT (ACT 43 OF 1983)**

According to the Department of Environmental Affairs (2015). EIA Guideline for Renewable Energy Projects. Department of Environmental Affairs, Pretoria, South Africa, the mandate of the Conservation and Agricultural Resources Act 1983 (Act No 43 of 1983) (CARA) is to conserve “natural agricultural resources” (the soil, the water sources and the vegetation, excluding weeds and invader plants) through production potential of land, by the combating and prevention of erosion and weakening or destruction of the water sources, and by the protection of the vegetation and the combating of weeds and invader plants.

Section 6 of the Act concerns the control measures which the following may be applicable to IPPs (subsections (2) (f), (g) and (o)):

- the regulating of the flow pattern of run-off water;
- the utilization and protection of the vegetation; and
- the construction, maintenance, alteration or removal of soil conservation works or other structures on land.

## 4 ALTERNATIVES

Alternatives to the proposed development are limited and have been considered below:

### 4.1 SITE ALTERNATIVES

The proposed site is the only viable site or location available at this stage and the only one that will be investigated in this application.

### 4.2 ACTIVITY ALTERNATIVES

There are no feasible activity alternatives assessed. The primary activity is the development of a facility for the generation of renewable energy. Other renewable energy generation facilities include wind and concentrated solar power, none of which are viable on the proposed site.

### 4.3 DESIGN/TECHNOLOGY ALTERNATIVES

Three different solar photovoltaic (PV) technology alternatives are options for the PV:

- Poly-Crystalline photovoltaic
- Concentrated photovoltaic (CPV)
- Thin film PV

These technologies each have their own advantages and disadvantages, from cost and space efficiency to visual impacts. The various options will be considered and assessed in more detail in the Environmental Impact Report.

### 4.4 LAYOUT ALTERNATIVES

Of the approximately 80 hectares (ha) considered and assessed, around 37.79 ha will be available for the development of the PV array and all associated infrastructure. This allocation provides sufficient space to explore various layout alternatives while excluding identified sensitivities and no-go areas from potential development.

The layouts will consider the needs to maximise the output from the facility (maximise the solar array area) and consider the environmental sensitive and “no-go” areas identified by the specialists, either through desktop analysis and/or site investigations. These layouts will be assessed in the Environmental Impact Report.

### 4.5 NO-GO ALTERNATIVES

This is the option of not developing the proposed solar PV facility.

Although the no-go development might result in no potential negative environmental impacts, the direct and indirect socio-economic benefits of not constructing the PV Solar facility will not be realised. The national and local need for renewable energy will not be realised. The no-go alternative will not result in any removal of vegetation or impacts on biodiversity (flora or faunal) or loss of agricultural land since the development will not take place. However, since the area is used for grazing and other agricultural activities, this does not guarantee that the natural vegetation and ecosystem as a whole will revive or continue to function undisturbed.

The no-go alternative will also result in South Africa’s unsustainable, coal-based electricity supply will not be augmented with renewable energy alternatives.



The potential job opportunities during the construction and operational phases of the development will also not be realised.

Due to the nature of the activity, and the size and location of the site, the socio-economic benefits of the activity for the wider national community are considered to greatly outweigh any environmental benefits of not implementing the activity. The potential negative and/or positive environmental impacts will be fully assessed in the Environmental Impact Report.

## 5 SITE DESCRIPTION

### 5.1 LOCATION

The site is located on Portion 11 of the Farm Kop Leegte No. 1154 GS, off the N3 highway, at the N3 and Winter/Colenso interchange (207), approximately 15 km east of Winterton, in the uThukela District Municipality, KwaZulu Natal.

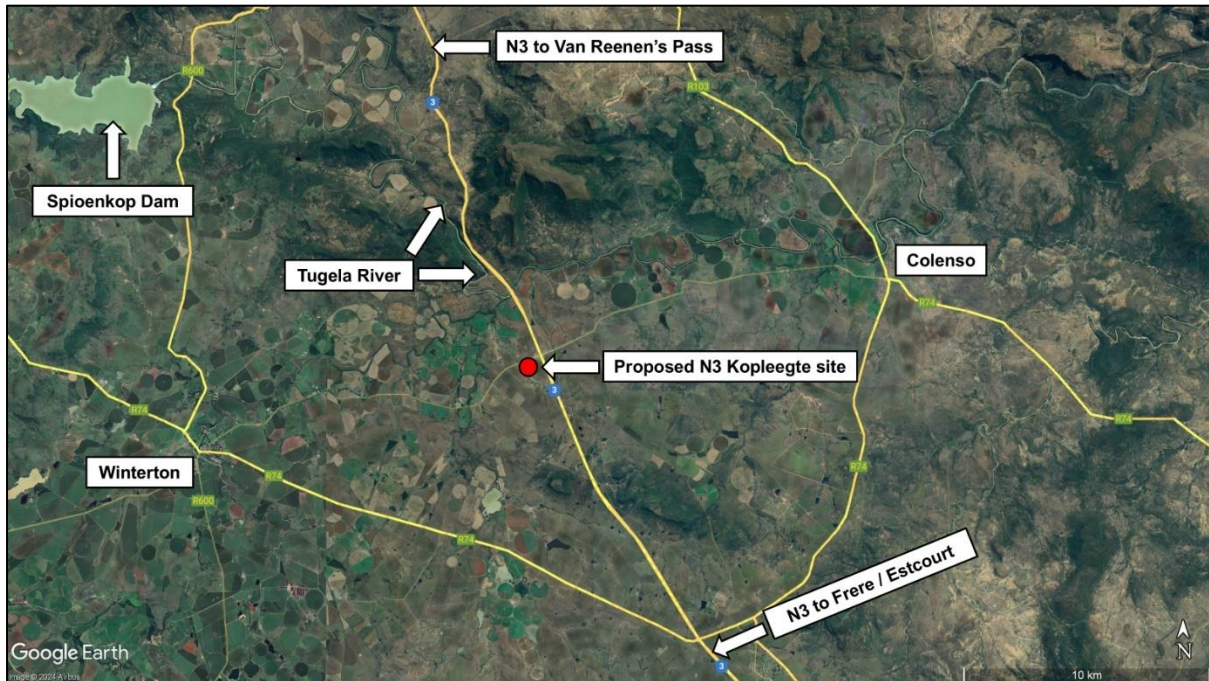


Figure 6: Proposed development site - Locality Map

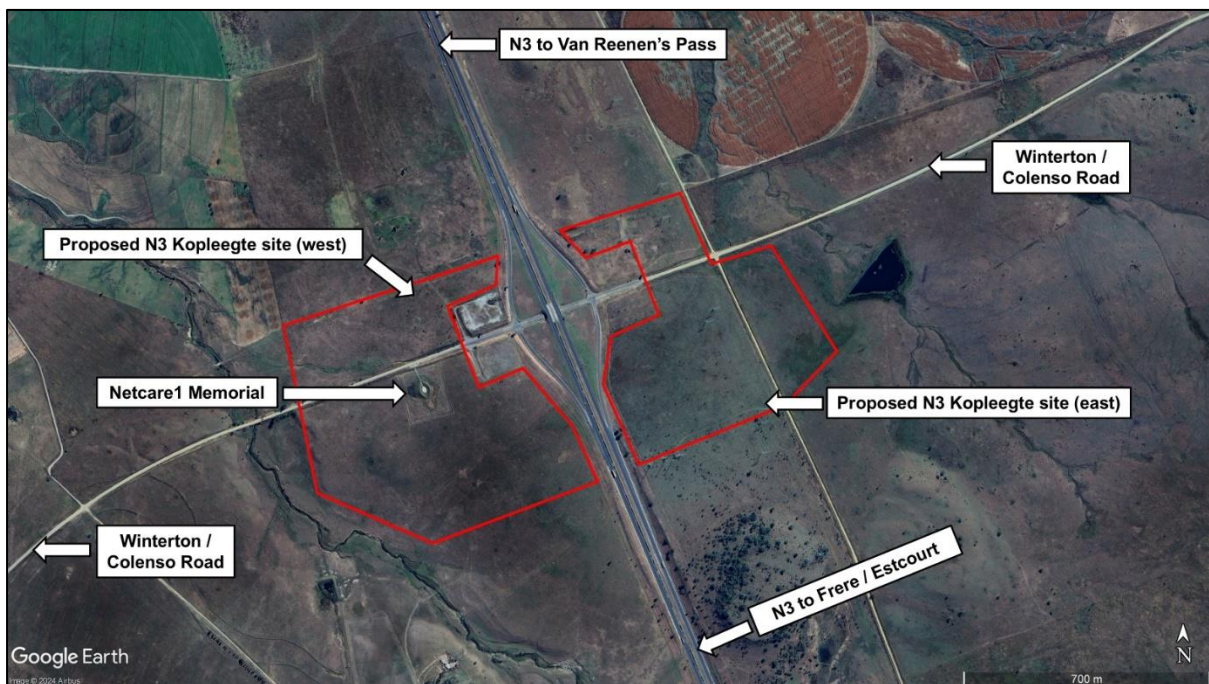


Figure 7: Proposed development site – Development footprint

## 5.2 DFFE SCREENING TOOL REPORT

### 5.2.1 Proposed Development area - Environmental Sensitivity

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

Table 2 is a summary of the environmental sensitivities identified for the proposed development site. The environmental sensitivities of the proposed development site are indicative and must be verified onsite by a suitably qualified person (Environmental assessment Practitioner (EAP) and/or specialist) before confirming the identified specialist assessments. Refer to Section 5.2.2 for the Site Sensitivity Verification.

Each environmental theme is associated with specific datasets that provide detailed information on the related environmental sensitivities. The DFFE Screening Tool uses these datasets to generate a sensitivity rating for each theme based on the nature and location of the proposed development. The DFFE Screening Tool report for the proposed development is attached as Appendix 1.

**Table 2: Proposed Development area - Environmental Sensitivity (Screening Tool report results)**

Theme	Very High	High	Medium	Low
Agricultural		X		
Animal Species		X		
Aquatic Biodiversity	X			
Archaeological and Cultural Heritage	X			
Avian	X			
Civil Aviation (Solar PV)				X
Defence				X
Landscape (Solar)				X
Palaeontology	X			
Plant Species			X	
RFI <sup>5</sup>				X
Terrestrial Biodiversity				X

Only the highest environmental sensitivity per environmental theme is indicated.

<sup>5</sup> Radio Frequency Interference

## 5.2.2 Site Sensitivity Verification

The following section is from the Site Sensitivity Verification (SSV) report. An SSV report was undertaken in terms of the *Protocols for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes* (Protocols) as per Government Notice No. 320 (published in Government Gazette No. 43110 on 20 March 2020)<sup>6</sup>.

These Protocols, effected as on 09 May 2020, must be complied with for every new application for Environmental Authorisation (EA) submitted after the effective date. According to the Protocols, the Environmental Assessment Practitioner (EAP) must verify the current use and environmental sensitivities of the site in relation to the proposed development, in accordance with the DFFE Screening Tool report results, to determine the need for specialist assessments for the identified environmental sensitivity themes.

This verification is done through a combination of desktop studies and onsite investigations by the EAP and/or specialists. Through these studies and investigations they evaluate the environmental themes and supposed sensitivity rating associated with the proposed development in order to verify whether the DFFE Screening Tool report results are a true representation of the situation on the ground. The aim of an SSV report is to:

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

The following table provides an overview of sensitivity ratings for various environmental themes at the proposed development site, as determined by the DFFE. Each theme's proposed sensitivity rating reflects the agreement or disagreement of the EAP and/or specialist based on their site sensitivity verification. The proposed sensitivity rating is motivated accordingly, discussing the need for further specialist assessment as part of the EIA process.

**Table 3: Environmental themes sensitivity (DFFE & Proposed) and motivation for specialist assessment**

Theme	DFFE Sensitivity	Agree / Disagree	Proposed Sensitivity	Motivation & Need for Specialist Assessment
Agriculture	High	Disagree ↓	Medium	DFFE sensitivity is rated high due to the moderate-high land capability, even though no cultivated land has been recorded in the area, it is well suited for grazing.  Following the site assessment, it was found that the soils were unsuitable for cultivation, and there was no evidence of cultivation to support the DFFE high sensitivity rating. This inconsistency indicates that the DFFE rating does not accurately reflect the actual conditions on the ground. Therefore, a medium sensitivity rating is proposed based on these findings.

<sup>6</sup> The Protocols are in line with Section 24(5)(a) and (h) and Section 44 of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998).

Theme	DFFE Sensitivity	Agree / Disagree	Proposed Sensitivity	Motivation & Need for Specialist Assessment
				An initial Agricultural Compliance Statement has been undertaken and the preliminary findings is included in this report, but will be finalised during the EIA phase.
Animal Species	High	Agree	High	<p>Sensitivity is high due to the potential sensitive species recorded for the site by SANBI. The presence of several highly sensitive bird species including the wattled crane, southern bald ibis and secretary bird is also associated with the site.</p> <p>An initial Terrestrial Biodiversity Assessment has been undertaken and the preliminary findings is included in this report, but will be finalised during the EIA phase.</p>
Aquatic Biodiversity	Very High	Agree	Very high	<p>Sensitivity is very high due to the site being associated with an Aquatic CBA</p> <p>An initial Freshwater Impact Assessment has been undertaken and the preliminary findings is included in this report, but will be finalised during the EIA phase.</p>
Archaeology and Cultural Heritage	Low	Disagree ↑	Low	<p>DFFE sensitivity is rated low. There are no heritage sites in this section as it is a crop field.</p> <p>An initial Archaeological Impact Assessment has been undertaken regardless of the low sensitivity. The preliminary findings are included in this report, but will be finalised during the EIA phase.</p> <p>A Notice of Intent to Develop (NID) will also be submitted to the Heritage Authority.</p>
Avian	Very High	Agree	Very High	<p>DFFE sensitivity is rated very high due to the potential occurrence of several endangered and vulnerable bird species including the grey crowned crane, southern bald ibis and secretary bird that are associated with the area. A known cape vulture restaurant is within 20 km of the site.</p> <p>An initial Avifaunal Impact Assessment has been undertaken and the preliminary findings are included in this report, but will be finalised during the EIA phase.</p>
Civil Aviation (Solar PV)	Low	Agree	Low	No major or other types of civil aviation aerodromes are within the immediate site area and thus will not pose any threat to civil aviation.
Defence	Low	Agree	Low	Due to the nature of the proposed development, it is not envisaged that it will impact any defence-related activities.



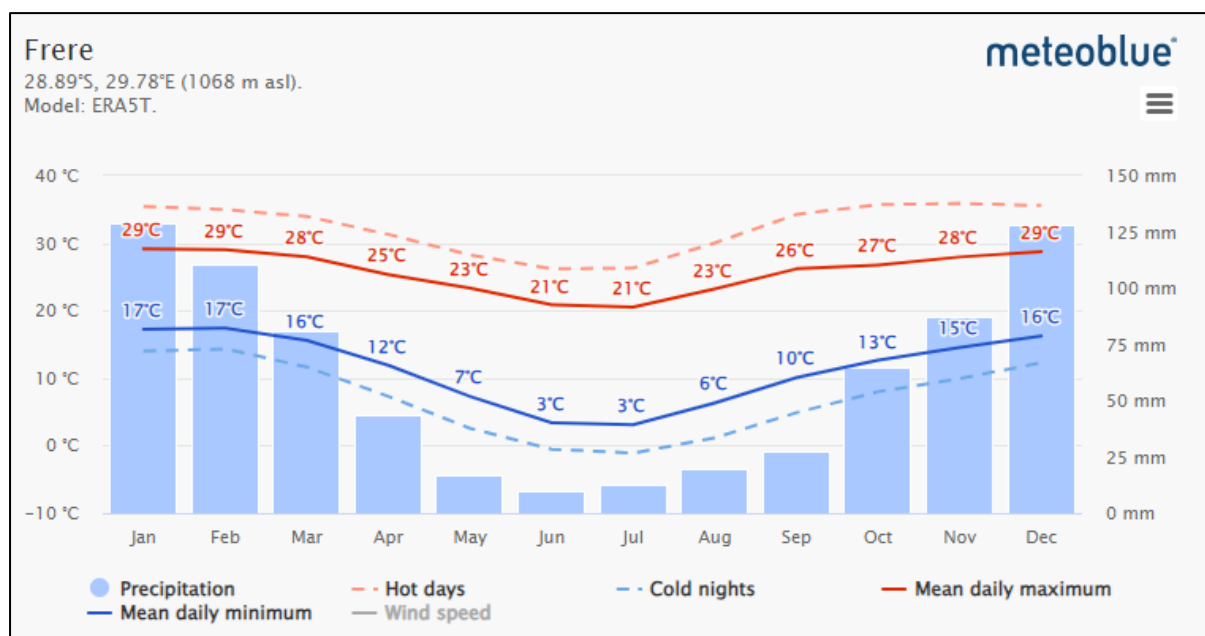
Theme	DFFE Sensitivity	Agree / Disagree	Proposed Sensitivity	Motivation & Need for Specialist Assessment
Landscape (Solar)	Low	Disagree	Medium ↑	<p>DFFE landscape / visual sensitivity is rated low due to the area having a slope less than 1:10 (gentle slopes and flat terrain). The site's topography ensures minimal visual intrusion, making it suitable for solar PV development with minimal visual impact on the surrounding landscape.</p> <p>However, based on the site visit findings, a medium sensitivity rating is proposed due to the site's VAC, unique cultural and historical resources, and landscape context.</p> <p>An initial Visual Impact Assessment has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase.</p>
Palaeontology	Very High	Disagree ↓	High	<p>DFFE sensitivity rating is very high due to the likelihood of finding significant fossils within the geologic unit associated with the study area. However, the infrastructure associated with the proposed development will have a minimal impact, if any, on the fossiliferous geologic unit associated with the study area, resulting in a proposed high sensitivity instead.</p> <p>Nevertheless, an initial Palaeontological Impact Assessment has been undertaken and the preliminary findings is included in this report, but will be finalised during the EIA phase. A Fossil Chance Find Protocol will be included and should the foundation work of the development be deeper than 2m then a palaeontological field visit will be required during the construction phase.</p> <p>A Notice of Intent to Develop (NID) will also be submitted to the Heritage Authority.</p>
Plant Species	Medium	Agree	Medium	<p>The study area features KwaZulu-Natal Highland Thornveld vegetation type, which can be considered indigenous to the natural sections of the study area. The sensitivity associated with this vegetation type is considered a medium sensitivity, as its Ecosystem Threat Status is classified as Least Concern.</p> <p>However, SANBI has recorded potential sensitive species that are associated with the study area and therefore may be present.</p> <p>An initial Terrestrial Biodiversity Assessment has been undertaken and the preliminary findings is included in this report, but will be finalised during the EIA phase.</p>

Theme	DFFE Sensitivity	Agree / Disagree	Proposed Sensitivity	Motivation & Need for Specialist Assessment
RFI	Low	Agree	Low	Sensitivity is low due to the site not being within a significant range of a high-powered transmitter facility. Therefore, no RFI Assessment will be conducted.
Terrestrial Biodiversity	Low	Agree	Low	Sensitivity is low due to the site not being situated in an Ecological Support Area (ESA) or Critical Biodiversity Area (CBA). Nevertheless, an initial Freshwater Impact Assessment and initial Terrestrial Biodiversity Assessment has been undertaken and the preliminary findings is included in this report, but will be finalised during the EIA phase.

### 5.3 CLIMATE

According to South African National Biodiversity Institute (SANBI), the climatic conditions associated with the proposed site location are characteristic of a summer-rainfall region, with a mean annual precipitation (MAP) of 750 mm (much of which falls in the form of thunderstorms). Mist is uncommon (14 days of mist per year for both Ladysmith and Estcourt). Mean annual temperature (MAT) 15.6–19.0°C (overall average 16.5°C). Summers are warm to hot, winters are cool. There are 15 frost days per year.

Simulated historical climate & weather data was obtained from meteoblue.com for the town closest to the proposed site – i.e. Frere. The Meteoblue climate diagrams indicated below are based on 30 years of hourly weather model simulations. They give good indications of typical climate patterns and expected conditions (temperature, precipitation, sunshine and wind). The simulated weather data have a spatial resolution of approximately 30 km and may not reproduce all local weather effects, such as thunderstorms, local winds etc, and local differences as they occur in urban, mountainous, or coastal areas.



**Figure 8: Meteoblue<sup>7</sup> - Simulated historical climate & weather data for the Frere area**

The general area is also ideally suited for a solar PV facility due to the relatively high irradiation levels. The Global Horizontal Irradiation (GHI) average for the area is 1896.9 kWh/m<sup>2</sup> according to the Global Solar Atlas (Figure 11)<sup>8</sup>. According to the Global Weather Corp, Global horizontal irradiance (GHI) is a measurement of the total solar electromagnetic radiation above a horizontal surface at a given location and time. It is the most useful metric for predicting solar panel output. It accounts for 71.6% of PV performance variations. Refer to Figure 5.

<sup>7</sup> [https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/frere\\_south-africa\\_1003654](https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/frere_south-africa_1003654)

<sup>8</sup> <https://globalsolaratlas.info/map>



## 5.4 LANDSCAPE / VISUAL

An initial Visual Impact Assessment (VIA) has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase.

The aim of a VIA is not to predict whether individual receptors will find the development attractive or not. Instead, the aim is to identify important visual characteristics of the surrounding landscape, especially the features and characteristics that contribute to scenic quality, as the basis for determining how and to what degree the development project will affect those scenic values.

The landscape / visual sensitivity is rated low due to the area having a slope less than 1:10 (gentle slopes and flat terrain). The site's topography ensures minimal visual intrusion, making it suitable for solar PV development with minimal visual impact on the surrounding landscape.

The eastern portion of the development area is a fenced-off area with three (3) cell towers and Eskom pylon infrastructure.

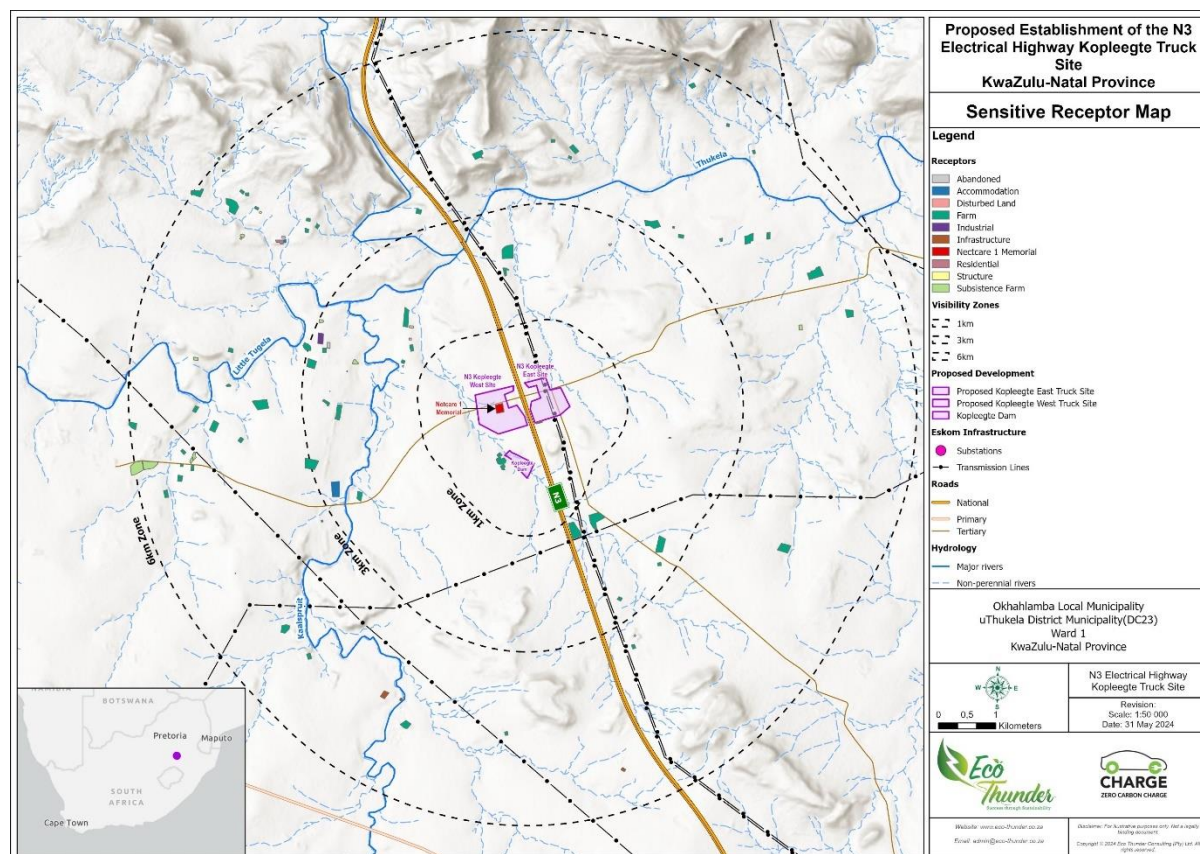
The western side of the development site is primarily a fenced-off area characterised by minimally disturbed grassland. Notably, cattle can be observed grazing just beyond the boundary fence. Within the western portion lies a significant historical landmark: the Netcare Helicopter Memorial Crash Site.

This site commemorates the tragic 2021 helicopter crash near Winterton involving a Netcare 911 emergency helicopter. The memorial was inaugurated with over 100 family members and close friends from across the country in attendance. They gathered to lay wreaths and pay tribute to the lives lost in the accident.

- The memorial's design is a blend of granite, concrete, earthworks, landscaping, seeded wild grasses, and six indigenous wild olive trees.
- The site itself is set on gently sloping farmland, leading visitors down a concrete path that traces the helicopter's flight trajectory on that fateful day. Remarkably, the land has been sculpted in the shape of the African continent, mirroring the distinct burn mark left on the veld from the blazing helicopter wreckage.
- The artist behind the memorial's design describes a straight, level path set on the site's central axis. This path culminates in a large concrete surface, an oval-shaped platform that houses commemorative trees, benches, and granite inscriptions.



**Figure 9: The Netcare Helicopter Crash Site in Good Condition, Showing Evidence of Good Maintenance**



**Figure 10: Sensitive receptor map**

However, despite the initial classifications, the site verification visit suggests an adjustment in the overall sensitivity rating for the proposed project site. This adjustment is motivated by several factors:

- **Visual Absorption Capacity (VAC):** The site's VAC, which refers to its ability to visually absorb changes without significant alteration to its visual character, is considered moderate. This is due to the site's topography and the existing development and degradation in the surrounding area. The presence of settlements, housing structures, linear infrastructure, and agricultural developments already introduce a degree of visual intrusion into the landscape. While the terrain is gentle, the presence of the Netcare Helicopter Memorial Site adds a layer of visual and cultural significance that must be preserved.
- **Cultural and Historical Significance:** The Netcare Helicopter Memorial Site is a unique and irreplaceable visual resource. Its presence enhances the cultural and historical value of the site, necessitating a higher sensitivity rating to ensure its preservation.
- **Scenic value and vegetation:** The surrounding area, characterised by agricultural land and existing infrastructure, supports a balanced visual setting. However, the memorial's significance elevates the need for careful visual impact management.

Considering the site's VAC, the unique cultural and historical resources present, and the overall landscape context, a sensitivity rating of medium is recommended based on the site visit findings. The proposed development must be managed in a way that minimises visual impacts and preserves the significant cultural and historical features of the site.

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## 5.5 BIODIVERSITY

An initial Terrestrial Biodiversity Assessment has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase.

A Terrestrial Biodiversity Assessment aims to understand the terrestrial ecology and evaluate the potential impacts of the proposed development on site. It identifies and assess biodiversity aspects (fauna and flora and terrestrial ecosystems) associated with the proposed development area and the environmental interactions it imposes.+

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A Screening Tool Report was generated (see Section 5.2) and classified the proposed development area's biodiversity sensitivities as the following:

- **Plant species (medium sensitivity)**
- **Animal species (high sensitivity)**
- **Terrestrial biodiversity (very high sensitivity)**

The plant species sensitivity is medium due to the natural grassland associated with the site being degraded by prolonged livestock grazing. However, potential sensitive species recorded for the site by SANBI may be present.

The animal species sensitivity is high due to the potential sensitive species recorded for the site by SANBI. The presence of several bird species (mostly vulnerable or endangered birds-of-prey) is also associated with the site. Unfortunately, because of the long history of agriculture and the transformed nature of the veld it is considered highly unlikely that the proposed development will result in any significant additional impact on any of these species.

The terrestrial biodiversity Sensitivity is very high due to the site being associated with a Freshwater Ecosystem Priority Area subcatchment (FEPA-subcatchment). The site also falls under the National Protected Area Expansion Strategy (NPAES) for the Free State Highveld Grasslands. However, there are no significant freshwater resources found on the site but there is a drainage line that runs through the proposed development footprint.

### 5.5.1 Vegetation

The Kopleegte study area is located within the Grassland Biome, within the Sub-Escarpment Grassland Bioregion (Rutherford and Westfall, 1994). The site falls within the **KwaZulu-Natal Highland Thornveld** vegetation type (Scott-Shaw and Escott, 2011; Mucina and Rutherford, 2006; 2018), which is currently listed as a **Least Threatened** ecosystem at a national level (SANBI, 2021; DFFE, 2022). KwaZulu-Natal Highland Thornveld occurs in a series of patches in the central-northern regions of KwaZulu-Natal, where it occurs both in dry valleys and on moist upland regions within an altitudinal range of 920–1 440 m a.m.s.l.

The most extensive patch is found around Ladysmith, Winterton, Estcourt and Colenso, and between Mooi River and Greytown. The vegetation occurs on hilly, undulating landscapes and broad valleys supporting tall tussock grassland usually dominated by *Hyparrhenia hirta*, with occasional savanna woodlands with scattered trees (Mucina and Rutherford, 2006).



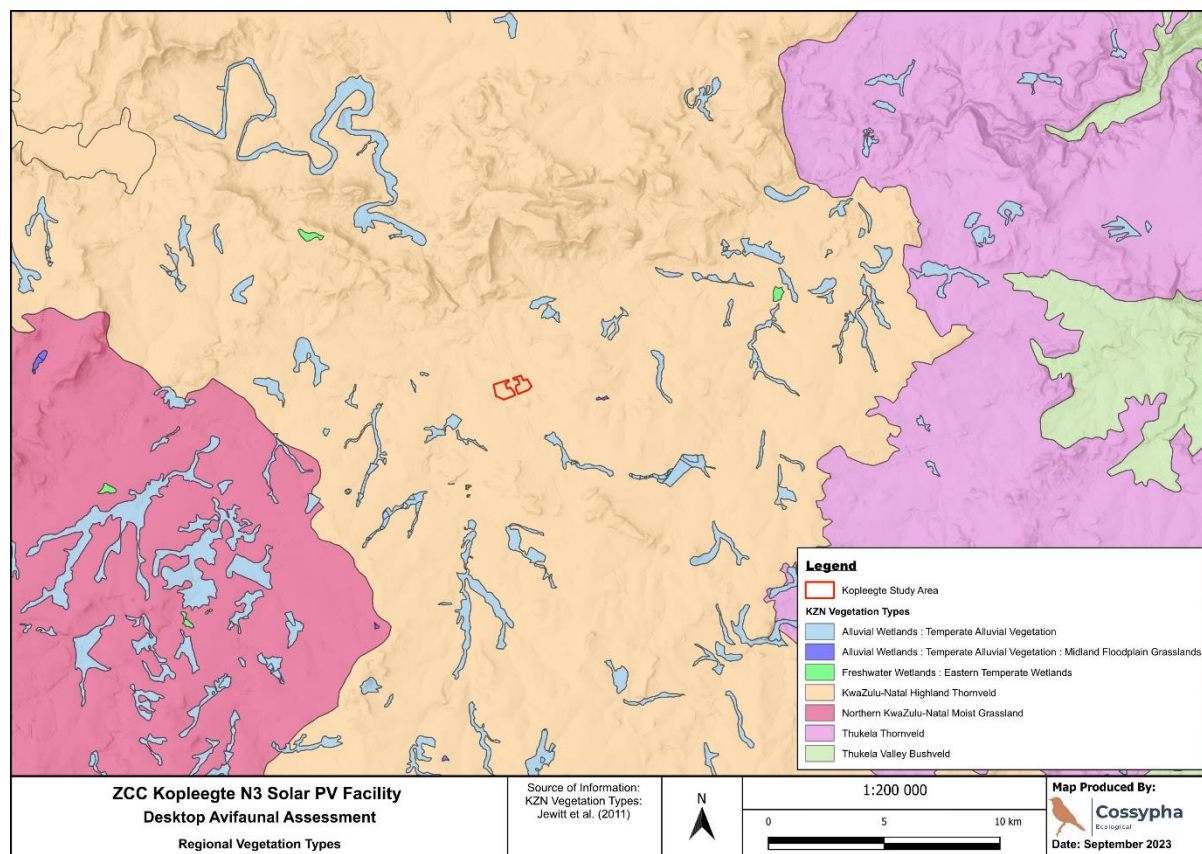


Figure 11: The study area in relation to regional vegetation types

### 5.5.2 Kwazulu-Natal Biodiversity Sector Plan

Ezemvelo KZN Wildlife (EKZNW) developed the KwaZulu-Natal Systematic Conservation Plan (KZN SCP; Jewitt, 2011), which was subsequently replaced by the KwaZulu-Natal Biodiversity Sector Plan (KZN BSP) to guide the long-term conservation of biodiversity in the province (Escott et al., 2016). The GIS layer lists land areas containing high biodiversity using irreplaceability measures. An irreplaceability measure quantifies the contribution of a particular site to achieve representation biodiversity targets (Ferrier et al., 2000).

The KZN BSP provides a spatial representation of areas required to ensure the persistence and conservation of biodiversity within KZN, reflected as Critical Biodiversity Areas (CBA) and Ecological Support Areas (ESA). The Plan has been produced as a tool for: (i) guiding protected area expansion priority areas and identification of stewardship sites and (ii) informing sectors strategic spatial planning processes with the intention of ensuring more sustainable development in KZN.

According to the KZN BSP, the site does not fall with any CBA or ESA. An area classified as CBA: Irreplaceable that encompasses natural thornveld vegetation occurs ~500 m to the east of the site.

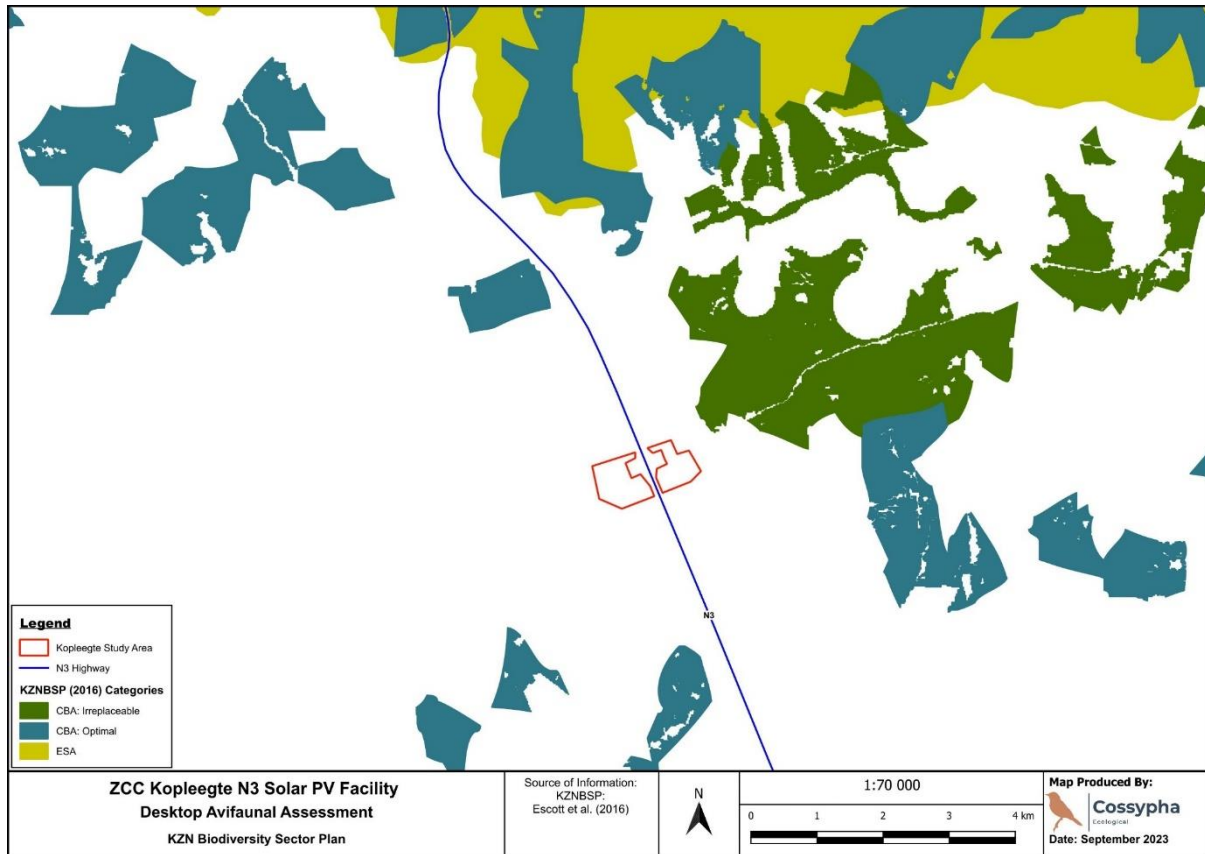


Figure 12: The study area in relation to the KZNBSPP indicating that the site does not fall within a CBA

## 5.6 AVIFAUNA

A preliminary Avifaunal and Animal Assessment has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase.

A Screening Tool Report was generated (see Section 5.2) **and classified the proposed development area's avifaunal sensitivity theme as a high** due to the potential occurrence of several endangered and vulnerable bird species including the grey crowned crane, southern bald ibis and secretary bird that are associated with the area. A known cape vulture restaurant is within 20 km of the site. A vulture restaurant is an undisturbed area where non-toxic, poison-free meat and carcasses are provided for vultures and other scavengers.

### 5.6.1 Distribution of avifauna in the study area

The region is relatively high in avifaunal diversity with around 372 bird species known to occur within the QDGC (an atlas area of 15' x 15' – roughly 24 x 27 km) that the study area falls within, according to the distribution maps in Roberts VII Multimedia Birds of Southern Africa (SA Birding, 2011; 2023). The Southern African Bird Atlas Project (SABAP2) has been collecting data since 2007 and includes data from the previous SABAP1 (1987-1991). SABAP2 aims to map the distribution and relative abundance of birds in southern Africa. SABAP2 data is recorded per pentad (a 5' x 5' coordinate spatial grid reference and a subset of the QDGC – one QDGC comprises of nine pentads. 5' x 5' = roughly 8 x 9 km) and therefore represents a more focussed search. Reporting rates are expressed as a percentage of the number of times a species was seen in a pentad divided by the number of times the pentad was surveyed. According to SABAP2 data, 267 species have been recorded in the pentad in which the study area falls (pentad 2845\_2940) and the adjacent pentad (2845\_2935) combined.

Priority species in terms of sensitivity to solar PV energy development impacts include any Red List species of conservation concern (SCC) and range-restricted species, small passerines that congregate in large numbers, and large-bodied species such as waterfowl, herons, gamebirds, and raptors (including owls and vultures) (Jenkins et al., 2017). The Maccoa Duck, Denham's Bustard, Blue Crane, Greater Painted-snipe, Tawny Eagle, Southern Bald Ibis and Black Stork are some of the priority species that have been recorded within the pentads, as well as the SABAP2 reporting rate. The higher the reporting rate, the higher the likelihood of the species occurring in the study area if suitable habitat exists.

### 5.6.2 Key habitats and preliminary sensitivity

At a desktop level, the natural vegetation in the broader surrounding areas would be the most important habitat for birds in the region, including the mountainous ridges and koppies situated ~5 km to the north of the site. Other key habitats include the uThukela River to the north of the study area, and the many natural streams, wetlands, and farm dams scattered in the landscape. These habitats likely support the bird species found in the region, including priority species such as gamebirds, raptors, and gregarious passerines. Where this vegetation is relatively undisturbed, it represents the most important habitat for birds in the area as it is an intact and functional ecosystem that supports a diversity of avifauna representing all trophic levels. Cultivated fields and fallow fields are also considered to be important for birds, however, are not considered sensitive from a habitat perspective.

Documented records (iNaturalist) of priority species occurring in proximity to the study area (i.e. within a 10 km radius) include Blue Crane *Grus paradisea*, Wattled Crane *Grus carunculata*, Secretarybird *Sagittarius serpentarius*, and Martial Eagle *Polemaetus bellicosus*. These were recorded to the north of the site in natural areas associated with the ridges and koppies and/or the uThukela River. It is likely that many more priority species are present in the surrounding areas.

According to the botanical assessment (McDonald, 2023), the vegetation on the site east of the highway comprises low, mixed grassland with a few scattered young trees of *Vachellia sieberiana* var. *woodii*. A low level grazing is evident, but the cover of grasses was good, with no signs of overgrazing. Patches of alien plant species such as *Verbena bonariensis* were evident where they have established strong stands. A drainage line and seasonally wet areas were recorded in the southern areas, and a small dolerite koppie occurs in the northern section.

The vegetation on the site west of the highway comprises well-developed grassland with only a few scattered saplings of *Vachellia sieberiana* var. *woodii*. There has been no recent grazing in this area and the cover of the grassland was good. This area has grassveld typical of the vegetation found extensively in this region. The plant community has similar composition to that found in other parts of the study area (McDonald, 2023).

According to the aquatic ecological assessment (Bezuidenhout and van der Westhuizen, 2023) major hydrological features identified in the study area and immediate surroundings include:

- A perennial tributary of the Little Tugela River situated to the west of the project site.
- A larger non-perennial drainage situated to the east of the project site.
- A series of ephemeral tributaries which drain towards the perennial drainage line situated to the west of the project site.
- Four dams (two in stream and two off stream dams).
- Two Channelled Valley Bottom Wetlands.
- Two Endorheic Depression Wetlands

Using this information as well as Google Earth satellite imagery, preliminary habitat sensitivity from an avifaunal perspective was mapped. Sensitive habitat on the site would include the drainage lines and wetlands found on either side of the site, and the rocky koppie found in the north-eastern section. The grassland associated with the Channelled Valley Bottom Wetlands and farm dam and the Depression Wetland on the eastern side was classified as medium-high sensitivity. The remaining grassland habitat on the site was classified as medium sensitivity. All modified areas such as roads and the memorial for the helicopter crash site were classified as low sensitivity.

**Table 4: Summary of sensitivity categories with recommendations for the study area**

Site Feature	Description and Recommendation	Sensitivity Rating
Drainage lines, wetlands, dams, and rocky areas	<ul style="list-style-type: none"> <li>• Sensitive habitats providing specialised habitat for avifauna.</li> <li>• Must be avoided by the proposed development.</li> </ul>	High
Natural grassland associated with wetlands	<ul style="list-style-type: none"> <li>• Intact vegetation connecting sensitive habitats that provide specialised habitat for avifauna.</li> <li>• Must be avoided by the proposed development.</li> </ul>	Medium-high
Natural but disturbed grassland	<ul style="list-style-type: none"> <li>• Natural grassland vegetation that provides habitat for some avifauna.</li> <li>• It is unlikely that this vegetation provides critical habitat for priority species due to the small size and proximity to the N3 highway, however sensitivity to the development will need to be assessed during the summer bird surveys on the site.</li> </ul>	Medium



Site Feature	Description and Recommendation	Sensitivity Rating
Modified areas – roads; Netcare Memorial	<ul style="list-style-type: none"> <li>• Habitat that has been modified or transformed. No natural vegetation occurs in these areas.</li> <li>• The development does not need to avoid these areas.</li> </ul>	<b>Low</b>

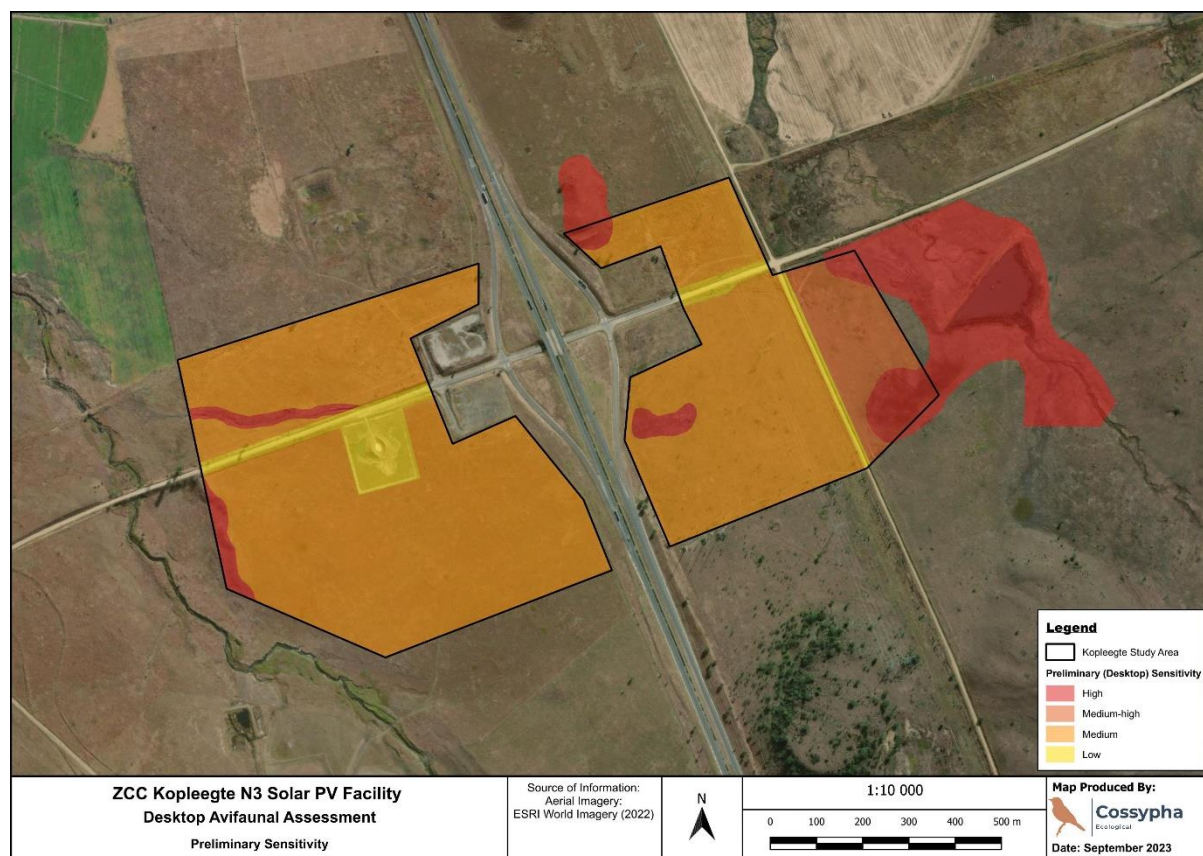


Figure 13: Preliminary (desktop) avifaunal habitat sensitivity

### 5.6.3 Protected areas and Important Bird Areas

According to the latest updates of the South African Protected Areas Database (SAPAD) and South African Conservation Areas Database (SACAD) (DEA, 2023a; 2023b), the site does not fall within proximity to any Protected Areas, with the nearest being the Tugela Drift Nature Reserve situated approximately 12 km to the north-east, and the Spioenkop Nature Reserve (which is also an Important Bird Area (IBA SA062)) ~15.5 km to the north-west.

The uKhahlamba Drakensberg Park occurs ~32 km to the south-west. A few patches of National Protected Area Expansion Strategy (NPAES) Priority Focus Areas occur in the surroundings, the closest being ~500 m to the east of the site and corresponding with the areas classified as CBA: Irreplaceable.



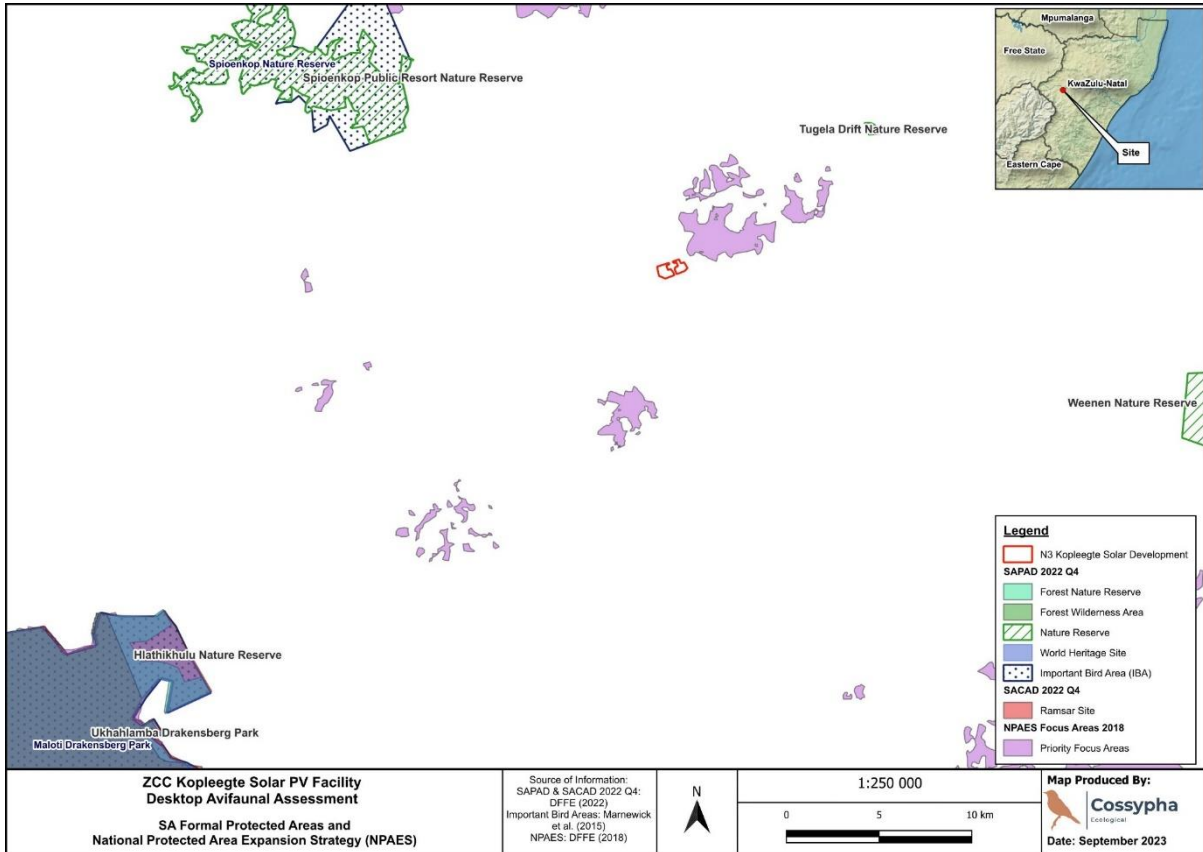


Figure 14: The study area in relation to national Protected Areas

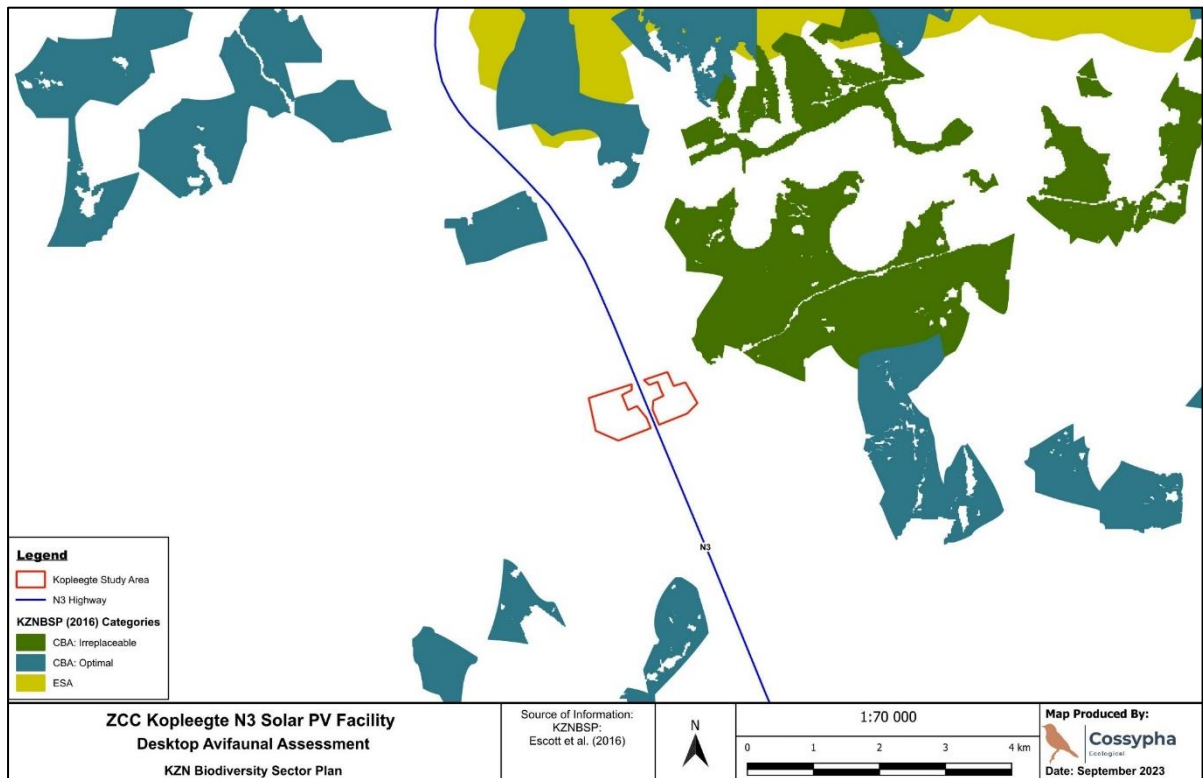


Figure 15: The study area in relation to the KZN BSP

## 5.7 FRESHWATER

An initial Freshwater Impact Assessment has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase.

A Freshwater report serves to evaluate the potential impacts of proposed development on freshwater resources such as watercourses and wetlands. It assesses factors like water quality, quantity, and ecosystem health to inform decision-making and mitigate adverse effects on these ecosystems.

A Screening Tool Report was generated (see Section 5.2) **and classified the proposed development area's aquatic biodiversity sensitivity as a very high sensitivity.**

The proposed development is situated approximately 31km north of the town Escort within the V13E and V14A Quaternary Catchment and Pongola-Mtamvuna Water Management Area (WMA).

The major hydrological features identified in and around the area of study comprise of:

- A perennial tributary of the Little Tugela River situated to the west of the project site.
- A larger non-perennial drainage situated to the east of the project site.
- A series of ephemeral tributaries which drain towards the perennial drainage line situated to the west of the project site.
- Four dams (two in stream and two off stream dams).
- Two Channelled Valley Bottom Wetlands.
- Two Endorheic Depression wetlands

There are no NFEPA rivers or wetlands within the boundaries of the proposed development, however, some depression wetlands surround the development area. The Kaalspruit and Little Tugela River are situated toward the northwestern edges of the development area. The identified tributary of the Little Tugela River as well as a larger non-perennial watercourse flows within close proximity (transects in some areas) to the site boundary and confluences with the major rivers downstream.

Channelled valley-bottom wetlands are characterised by their location on valley floors, the absence of characteristic floodplain features and the presence of a river channel flowing through the wetland (Ollis et al., 2013). A depression is a wetland or aquatic ecosystem with closed (or near-closed) elevation contours, which increases in depth from the perimeter to a central area of greatest depth and within which water typically accumulates (Ollis et al., 2013). An 'endorheic' depression is inward draining, meaning it has no outflow (Ollis et al., 2013). An exorheic depression has an outflow.

In determining the integrity of the wetland, the condition of the site and the indirect and direct disturbances are considered. The roads, alien invasive vegetation species, pollution, sedimentation and density roughness elements was taken into account in determining the PES and EIS of the wetland units on site.

Four modules, namely hydrology, geomorphology, water quality and vegetation, were assessed as a single unit for the HGM Units and subsequently an area weighted score was obtained for the HGM Units. The potential impacts of activities such as agriculture, drought and altered hydrological functions within the greater catchment were taken into consideration during the assessment.

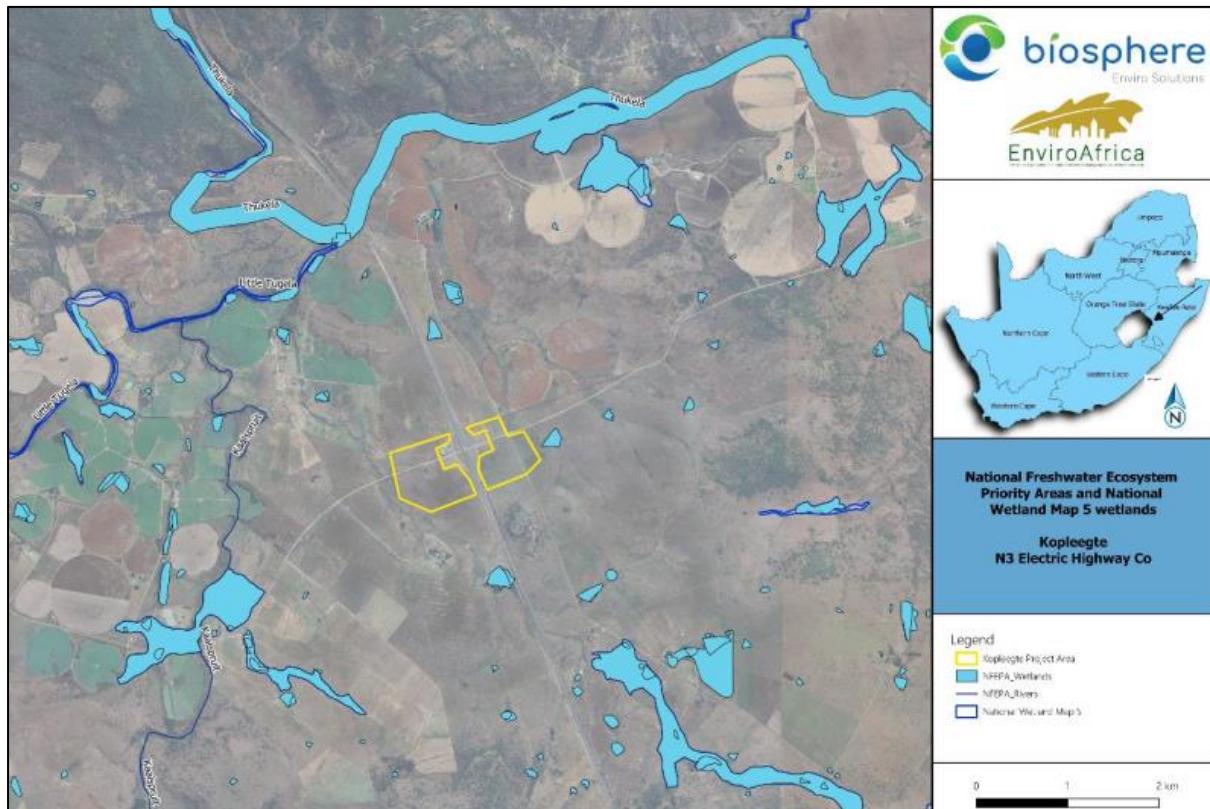


Figure 16: NFEPA and National Wetland Map 5 Desktop Data

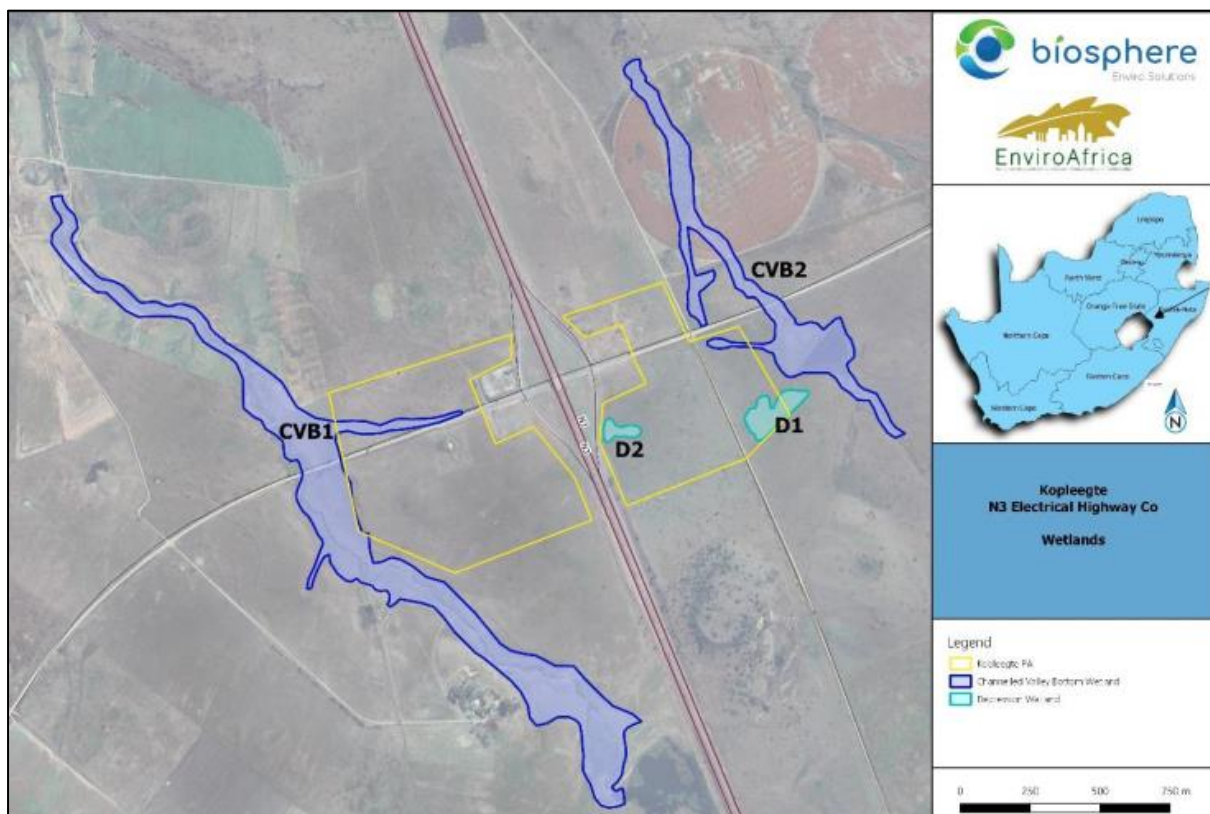


Figure 17: Two channelled valley bottom wetlands and two endorheic depression wetlands in and next to the proposed project area



### 5.7.1 PES, EIS & REC

The combined PES Category for Channelled valley bottom wetland 1 (CVB 1) is C, meaning that the wetland is Moderately modified, with some loss of natural habitats. The combined PES Category for Channelled valley bottom wetland 2 (CVB 2) is C, meaning that the wetland is Moderately modified, with some loss of natural habitats. The combined PES Category for Depression wetland 1 is C, meaning that the wetland is Moderately modified, with some loss of natural habitats. The combined PES Category for Depression wetland 2 is C, meaning that the wetland is Moderately modified, with some loss of natural habitats.

The Ecological Importance and Sensitivity of the Channelled Valley Bottom wetlands is moderate, which means that the wetlands are considered to be unique on a provincial or local scale due to biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These wetlands / rivers (in terms of biota and habitat) are usually not very sensitive to flow modifications and often have a substantial capacity for use.

The Ecological Importance and Sensitivity of the Depression wetlands is Low / Marginal, which means that the wetlands are not unique at any scale. These wetlands (in terms of biota and habitat) are generally not very sensitive to flow modifications, this is because there is no flow in depression wetlands.

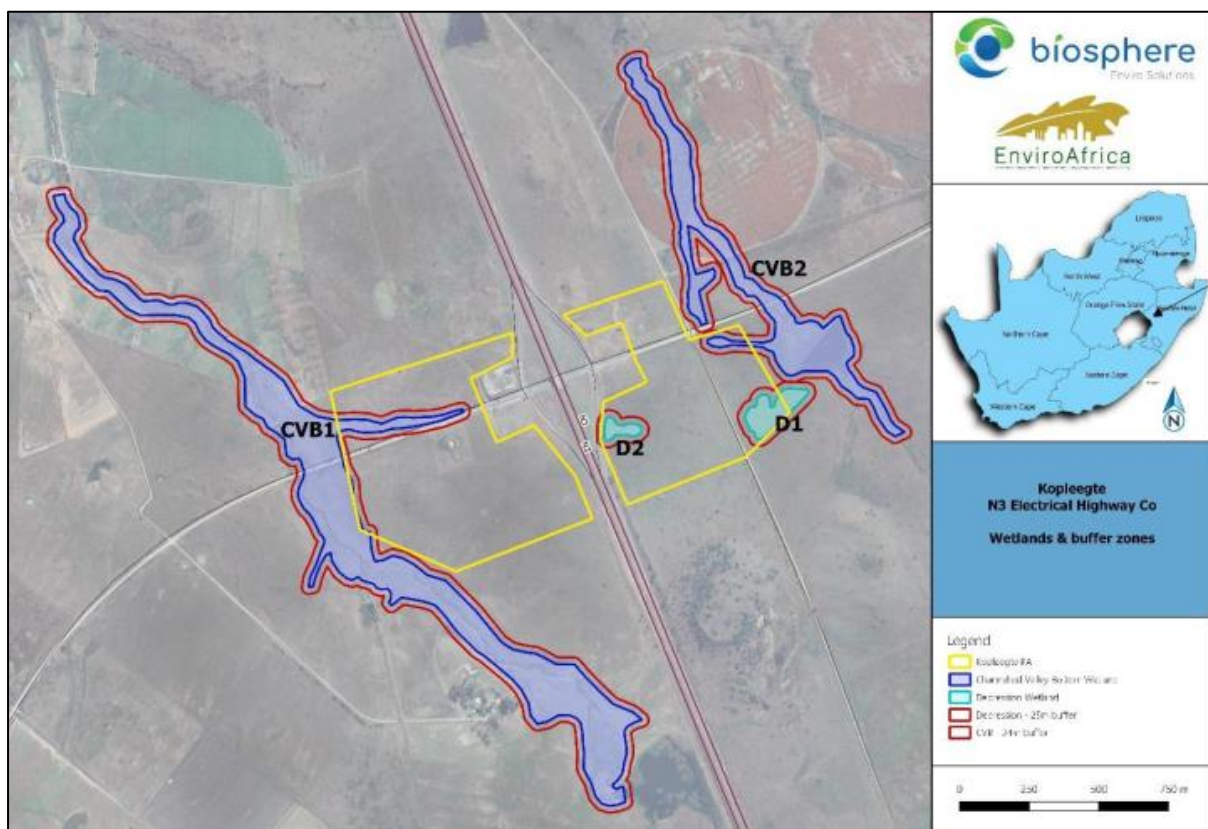


Figure 18: Delineated wetlands with buffer zones

**Table 5: Overall Scores of Wetlands and River Classifications**

<b>Wetland Classification</b>				
<b>Site name</b>	<b>Classification</b>	<b>PES</b>	<b>EIS</b>	<b>REC</b>
CVB 1	Channelled Valley Bottom wetland	C: Moderately Degraded	Moderate	C - maintain
CVB 2	Channelled Valley Bottom wetland	C: Moderately Degraded	Moderate	C - maintain
Depression 1 & 2	Endorheic Depression wetland	C: Moderately Degraded	Low / marginal	C - maintain
<b>River Classification</b>				
<b>Site name</b>	<b>Classification</b>	<b>Ecological Health Class</b>	<b>IHAS</b>	<b>WQL</b>
Reference Station (Tributary of the Little Tugela River)	Perennial Stream	E/F	69%	Acceptable
Control Station (Tributary of the Little Tugela River)	Perennial Stream	E/F	65%	Acceptable

## 5.8 AGRICULTURE

An initial Agricultural Assessment (Agricultural Compliance Statement) has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase. An Agricultural Compliance Statement aims to identify and assess the agricultural theme associated with the proposed development area and the environmental interactions it imposes.

A Screening Tool report was generated (see Section 5.2) **and rated the proposed development area's agricultural theme as high sensitivity.** The agricultural sensitivity is high because of the moderate to high land capability, even though no cultivated land has been recorded in the area.

Agricultural sensitivity, as reported in the Screening Tool, is based upon the land use (SANLC, 2014) and land capability (Department of Agriculture, Forestry and Fisheries, 2017, also referred to as DAFF, 2017). All cultivated land is considered a high sensitivity, while irrigation and unique crops, are considered very high sensitivity, irrespective of the land capability. The land use in the Screening Tool is based on the South African Nation Land Cover (SANLC, 2014). Meanwhile, there have been two more updated versions of the land use (2018 and 2020).

According to DAFF, 2017, land capability is defined as the most intensive long-term use of land for purposes of rainfed farming determined by the interaction of climate, soil, and terrain. The following weight was given to each attribute when calculating the land capability:

$$\text{Land capability} = \text{Climate (40\%)} + \text{Terrain (30\%)} + \text{Soil (30\%)}$$

The land capability (DAFF, 2017) classifies the soils as having a land capability as having a medium to high land capability, even though no cultivated land has been recorded for the area. (Figure 19).

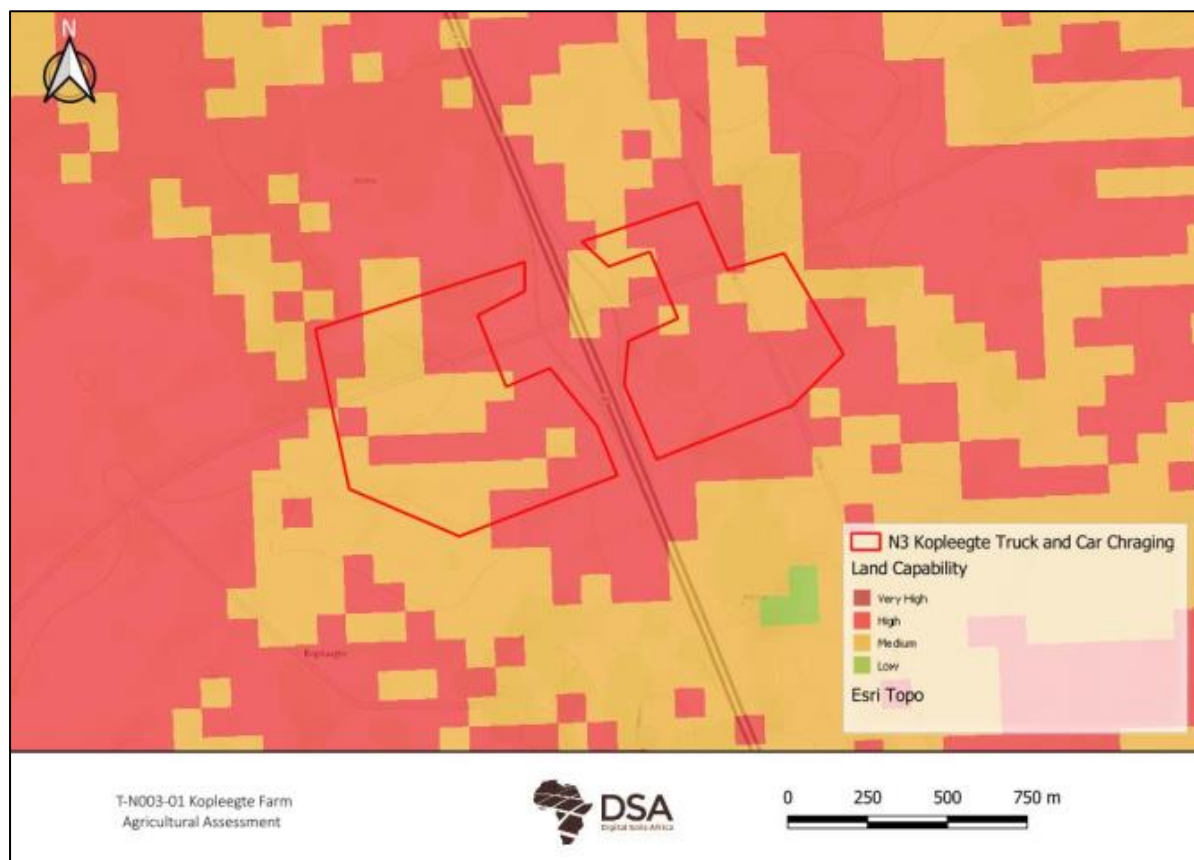


Figure 19: The land capability of the study as used in the Screening Tool

## 5.8.1 Land capability

### 5.8.1.1 Climate capability

Climate capability is highest weighted factor (40%) in the calculation of the land capability (DAFF, 2017) which is used in the Screening Tool to determine the agricultural sensitivity. The climate capability consists of 9 values, with 1 being the lowest value and 9 being the highest value (There is however no evaluation value of 1 & 2).

The climate capability is determined by factors such as moisture supply capacity, physiological capacity and climatic constraints. **The climate capability according to DAFF, 2017, is a value of 6. This is considered a moderate – high climate capability.**

### 5.8.1.2 Terrain capability

Terrain plays an important role in a plants' physiological growth requirements (sensitivity and accessibility perspective). Therefore, the two terrain modelling concerns included in the terrain capability modelling exercise were plant physiology and terrain sensitivity.

The terrain capability consists of 9 values, with 1 being the lowest value and 9 being the highest value. The terrain capability of where the proposed development area is situated, according to the DAFF, 2017, has a range from 5 to 7. **This is generally considered a moderate to high terrain capability.**

### 5.8.1.3 Soil capability

A land type is an area which can be demarcated at a scale of 1:250 000 with similar soil forming factors and therefore soil distribution patterns. A land type does therefore not represent uniform soil polygons, but rather information regarding the occurrence of different soils on different terrain units can be obtained from the land type inventory. Land type data was used in calculating the soil capability (DAFF, 2017), and therefore, indirectly used in the Screening Tool for estimating the agricultural sensitivity.

The study area is comprised of the Fa and Bb land types (Land Type Survey Staff, 1972 – 2002). The Fa comprises of shallow soils (Mispah & Glenrosa forms) predominate; little or no lime in landscape. The Bb land type comprises of red and yellow, dystrophic/mesotrophic, apedal soils with plinthic subsoils (plinthic soils comprise >10% of land type, red soils comprise <33% of land type). The Fa land type dominates most of the study areas while the Bb land type makes up a smaller region of the western study area. The soil capability consists of 9 values, with 1 being the lowest value and 9 being the highest value. The main factors contributing to the soil capability consist of plant available water (80%), soil sensitivity (17%) and soil fertility (3%). **The soil capability of the development area, according to the DAFF (2017), has a value of 5. This is considered a moderate soil capability.**

### 5.8.1.4 Conclusion

The new Land capability (Department of Agriculture, Forestry and Fisheries, 2017) has fifteen classes, as opposed to the eight classes described by Schoeman et al. (2002). The data is usable on a scale of 1:50 000 – 1: 100 000, therefore, not suitable for farm scale recommendations.

- Classes 1 to 7 are of low land capability and only suitable for wilderness or grazing.
- Classes 8 to 15 are considered to have arable land capability with the potential for high yields increasing with the land capability class number.

The land capability values of the study area are between 8 (moderate) and 9 (moderate to high), which is in the range of non-arable soils (1-7) and arable soils (8-15). **The eastern area classifies as moderate to high which is arable, while the western area classifies between not arable and arable with a small section that has a value of 6 that is low to moderate.**

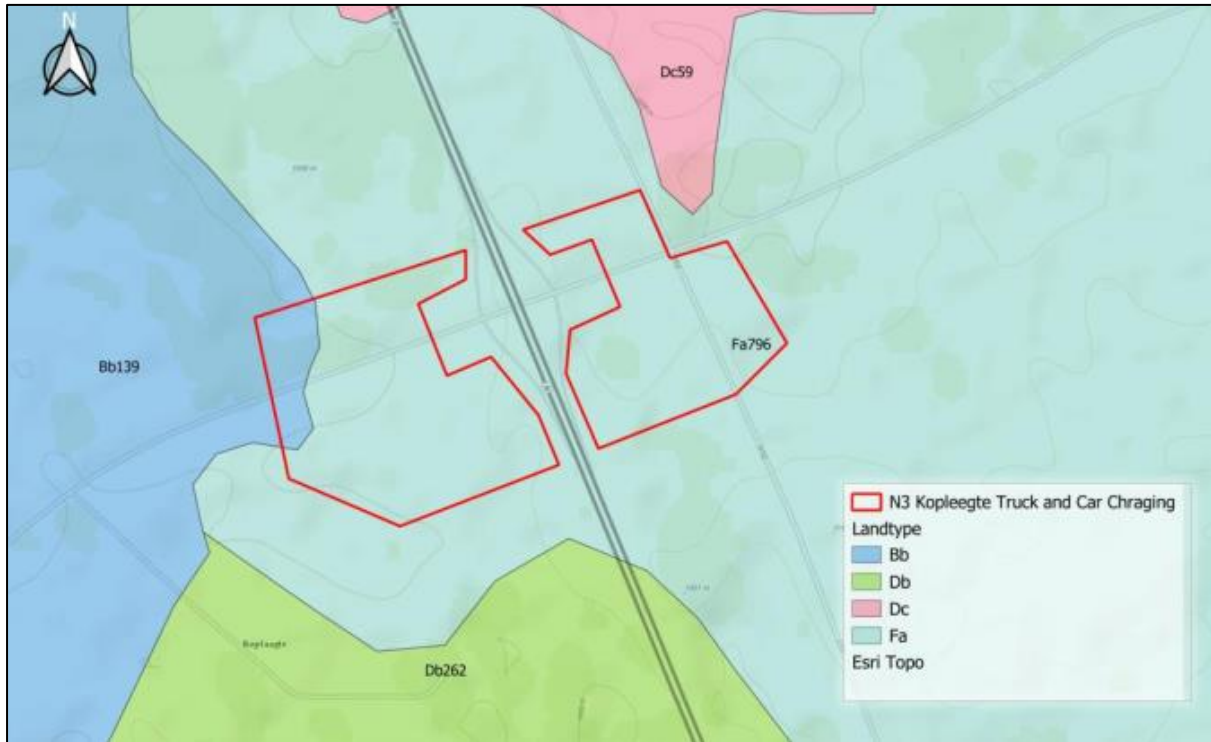


Figure 20: Land types found in the study area and the surrounding area (Land type survey staff, 1972-2002)

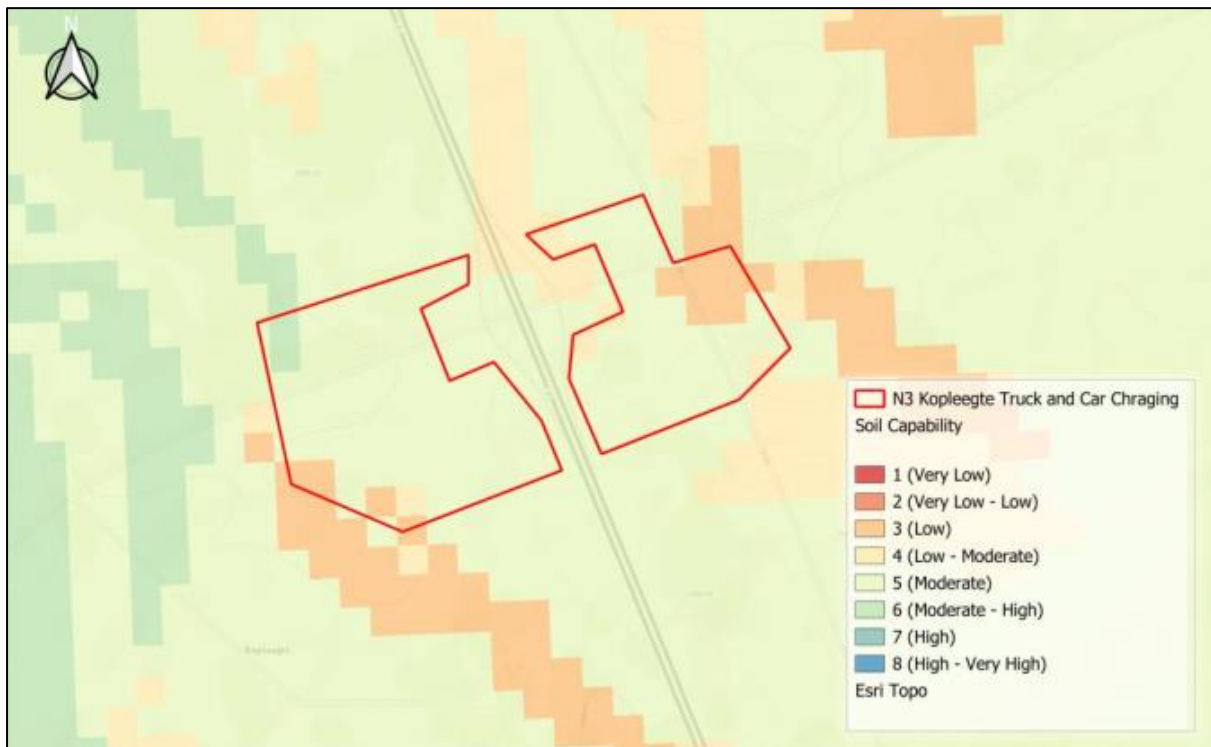


Figure 21: The soil capability of the site and surrounding area



### 5.8.2 Grazing capacity

The unit used in the grazing capacity is hectares per large stock unit (ha/LSU). **The site has a high grazing capacity of 5 ha/LSU.** A homogeneous unit of vegetation expressed as the area of land required (in hectares) to maintain a single large stock unit (LSU) over an extended number of years without deterioration to vegetation or soil. Where an LSU = an animal with a mass of 450 kg and which gains 0.5 kg per day on forage with a digestible energy of 55%. (Trollope et. Al., 1990).

### 5.8.3 Land use

South African National Land-Cover 2020 (SANLC 2020) (GeoTerraImage, 2020) was compared to the 2014 Land Cover to determine if there was a land use change since 2014. The SANLC 2020 classifies the area as 13 (Natural Grassland) and 67 (Roads & rails (major linear)). Refer to Figure 22.

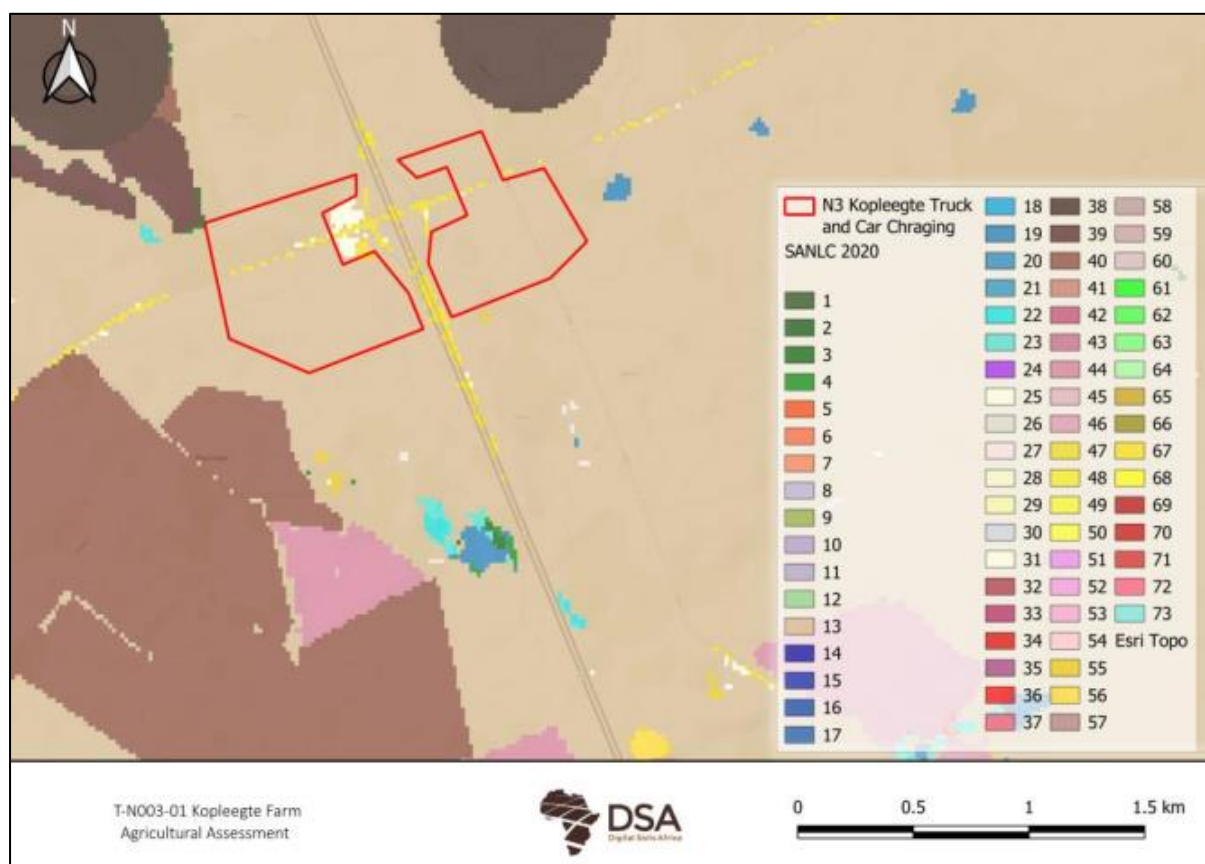


Figure 22: South African National Land-Cover 2020 (SANLC, 2020)

### 5.8.4 Site verification

On November 9, 2023, the specialist, Darren Bouwer conducted a field survey using a soil auger. The soils were observed, described, and classified based on the guidelines provided by the Soil Classification Working Group (2018).

The study area is typical of the Fa land type, characterized by shallow soils and slightly deeper soils in between, with a higher degree of weathering. Rock outcrops are common. The underlying geological lithology largely consists of dolerite and shale. No evidence of cultivation was visible on the site.

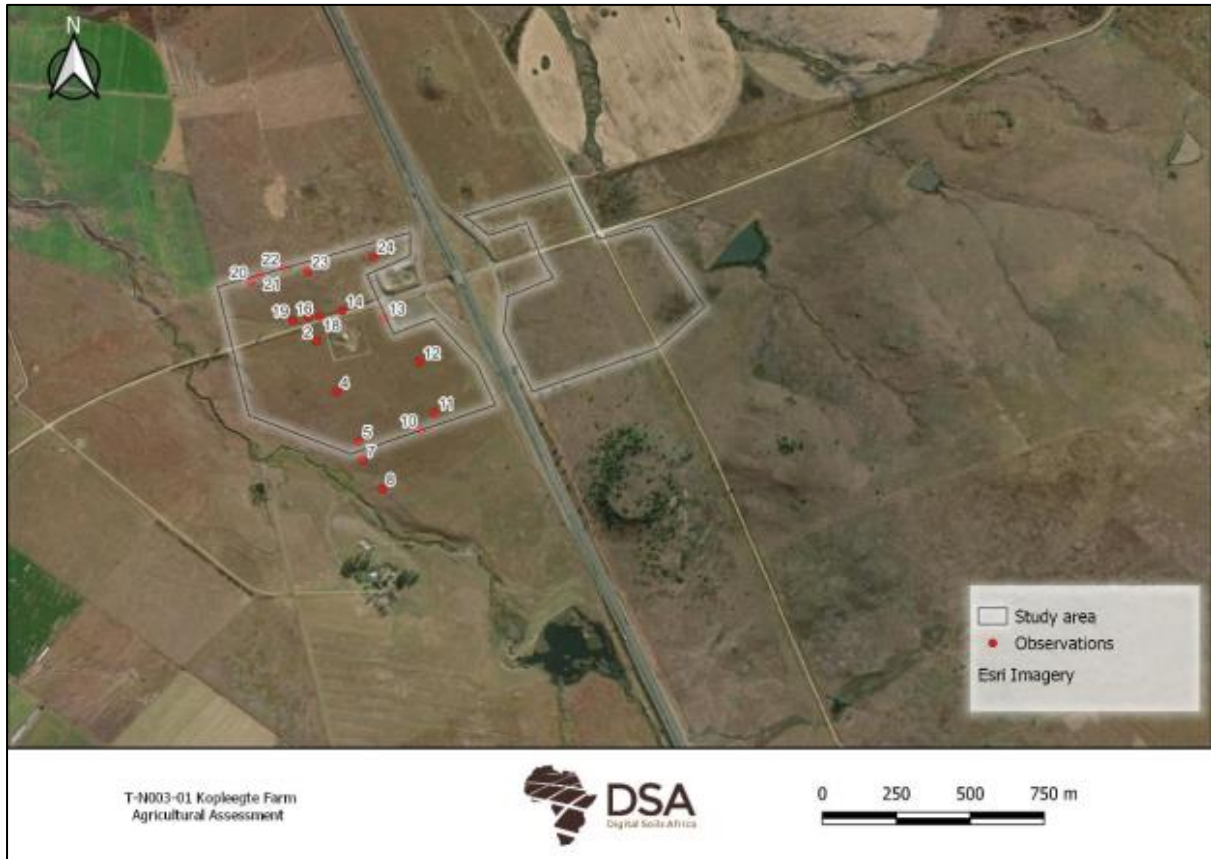


Figure 23: Observations made during the site visit



Figure 24: An example of the soils augured in the study area during site verification

**Table 6: Soil types found in the study area**

Soil type	A horizon	B horizon	C horizon	Land capability
Glenrosa	Orthic A	Lithic	-	Medium
Mispah	Orthic A	Rock	-	Medium
Tubatse	Orthic A	Neocutanic	Lithic	Low

**Figure 25: The agricultural sensitivity of the site**

### 5.8.5 Protected Agricultural Area

Preservation and Development of Agricultural Land Framework Act (PD-ALF) is in the process of being published. The new statutory framework will replace the Subdivision of Agricultural Land Act, Act 70 of 1970.

Protected Agricultural Area, as in the draft framework, is defined as “an agricultural land use zone, protected for purposes of food production and ensuring that high potential and best available agricultural land are protected against non-agricultural land uses in order to promote long-term agricultural production and food security.” **The study area is partially situated in a Protected Agricultural Area.**

## 5.9 HERITAGE / ARCHAEOLOGICAL & PALAEOLOGICAL

An initial Heritage / Archaeological Impact Assessment has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase.

A Heritage Assessment, like the Heritage Survey conducted for the proposed development, aims to identify and assess the heritage / archaeological and palaeontological themes associated with the proposed development area and the environmental interactions and impacts it imposes.

A Screening Tool Report was generated (see Section 5.2) **and classified the proposed development area's environmental sensitivity themes as the following:**

- **Archaeology and Cultural Heritage (very high)**
- **Palaeontology (very high)**

The palaeontological sensitivity is very high due to the likelihood of finding significant fossils within the geologic unit associated with the site.

A Notice of Intent to Develop (NID) will also be submitted to the Heritage Authority.

### 5.9.1 Heritage & Archaeological findings

The desktop study consisted of analysing various maps for evidence of prior habitation in the study area, as well as for previous archaeological surveys. There are no known heritage surveys near the study area. The general area is known for its high number of archaeological sites. Anderson (2015) and Anderson and Anderson (2007, 2008, 2009, 2012) undertook a survey and excavations over a 1km line on the adjacent properties.

These recorded sites included stone walling associated with Moor Park and the Historical Period, graves and engravings. All of the features were also surveyed with a land surveyor. These studies noted that this specific area had a very high density of archaeological sites and engravings and that it warranted further research at some stage. Anderson (2015) and Prins (2014) recorded more sites to the north of the farm access road. The other archaeological sites are Late Iron Age (LIA) sites and were recorded by Dr T Maggs from the KZN Museum.

The area was active during the second Anglo-Boer War with a war cemetery to the north-east, English pontoons at the Tugela River, and Boer sangars in the hills.

The surveyor General map for Kopleegte is not currently available on its web site; however, the adjacent farms were surveyed in 1852 and one can assume that Kopleegte dates to a similar time. Furthermore, the farms colonial dates go back to the 1840s as Strydpoort belonged to Andries Pretorius (Anderson 2022). Strydpoort is located 5km to the south. Kopleegte formed part of this original farm according to the landowner.

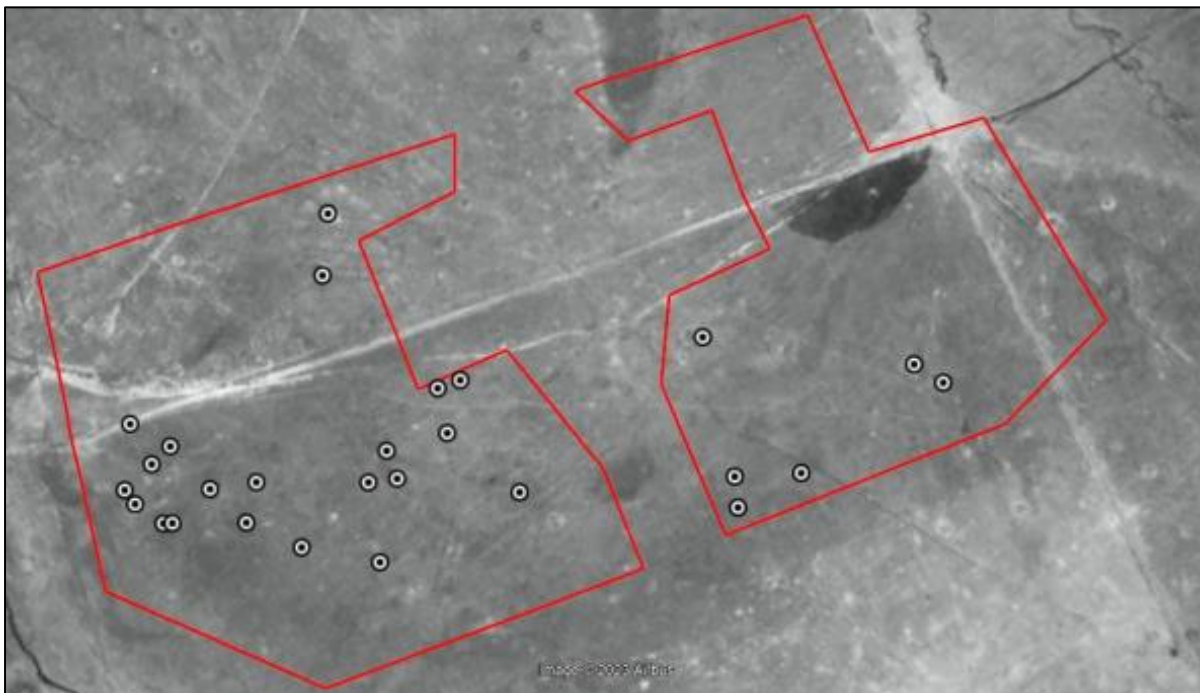
The 1937 aerial map indicates that there are twenty-seven stone walled features and one building within the footprint. More importantly, the 1942 topographical map does not have any settlements within the footprint. The construction of the N3 demolished several settlements.





**Figure 26: Stone walled features, engravings and graves at GLK78A - C**

Red = engraving, yellow = grave, green = archaeological site



**Figure 27: Location of the northern study area in 1937**



**Figure 28: Location of recorded sites**

The features recorded within the footprint are related to the main site that was surveyed and excavated by Anderson (2015) and Anderson and Anderson (2007, 2008, 2009, 2012). The main site GLK078 is an occupation of Late Iron Age settlements, in a 1km radius of the N3 interchange. The site first dates to the 12<sup>th</sup> to mid-15th centuries ACE (or 500 to 800 years ago) and is associated with the Moor Park pottery.

The sunken stone enclosures and very low walling and graves are probably related to this period, as are the engravings. There are some post 1600 ACE settlements, these are indicated by the higher stone walls, and maize related grinding stones. These probably date up to the Historical period and occur outside of the current footprint. There are a few Colonial Period (post 1850s) stone walled enclosures outside of the footprint. These rectangular features have walling still ~ 1m high.

There are several graves within the development footprint and the site in general. The graves within the footprint date to the Moor Park phase. The older graves are level with the surface unless they have been affected by termite mounds and/or aardvark burrows.

A comparison with GLK076 notes the only significant features were the human graves. There was consistently no human remains within the (possible) graves, nor any grave goods. The Specialist believe that the human remains have disintegrated through time with the assistance of termites. They would favour the graves as they provide 'natural' hollows for the nest. The continual horizontal and vertical moving (and disintegrating) of the termitarium would reposition several rocks within the grave. Through time, these graves would sink into the soil, and thus remove the features normally associated with classic stone cairn graves. The increased humidity inside the termitarium would also increase the rate of decay of organic remains.

While the graves may not yield human remains, their position within the settlement is important, and these need to be recorded. The location of the grave in relation to a single settlement (of an enclosure and houses) determines the sex and status of that person.

The excavations at GLK076 consisted of 80 2m x 2m squares. In general, it did not yield any significant finds or information. Very few artefacts were recorded; however, this is the norm for LIA sites in the KZN



interior (see Maggs et al 1986). Very few sites have extensive deposits, such as Moor Park (Davies 1976), and an abundance of artefacts. The excavations and surveys did yield spatial information regarding the positioning, especially if there were changes in the architecture. The same will be the case for the proposed development.

The engravings are related to Nguni-speaking people and probably reflect the cultural settlement pattern and the importance of cattle (Maggs and Ward 1995). The excavation results conform to the results undertaken by other people in the area (Maggs et al 1986). That is, the sites are the remains of formative Nguni-speakers who had an agro-pastoralist socio-economy.

Any mitigation in the proposed footprint will add to the general knowledge the Late Iron Age. The proposed footprint does not have as well preserved archaeological features as the main site, yet it still needs mitigation.

In terms of spatial patterning, the southeastern block of the footprint appears to have minimal occupation. More sites do occur on the opposite side of the road; however, those are 20th century settlements with graves.

### 5.9.2 Palaeontological findings

The palaeontological sensitivity is very high due to the likelihood of finding significant fossils within the geologic unit associated with the site.

The area is mostly in an area of high and zero palaeontological sensitivity. Dr Alan Smith undertook a desktop study of the proposed development. He states: “This site contains the Estcourt Formation and possibly Karoo Dolerite. According to the Palaeosensitivity map this area is flagged red. This can be mitigated because: 1) Solar Installations have very shallow footprints and 2) the area has been disturbed by previous main road installations.

The chances of encountering significant fossils are Low, but Not Zero; consequently a “Chance Find Protocol” has been included. No further palaeontological work is required unless the “Chance Find Protocol” is triggered”.

**Table 7: Palaeontological sensitivity rating**

Colour	Sensitivity	Required action
Red	Very high	Field assessment and protocol for finds is required.
Orange / Yellow	High	Desktop study is required and based on the outcome of the desktop study; a field assessment is likely.
Green	Moderate	Desktop study is required.
Blue	Low	No palaeontological studies are required however a protocol for finds is required.
Grey	Insignificant / Zero	No palaeontological studies are required.
White / Clear	Unknown	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

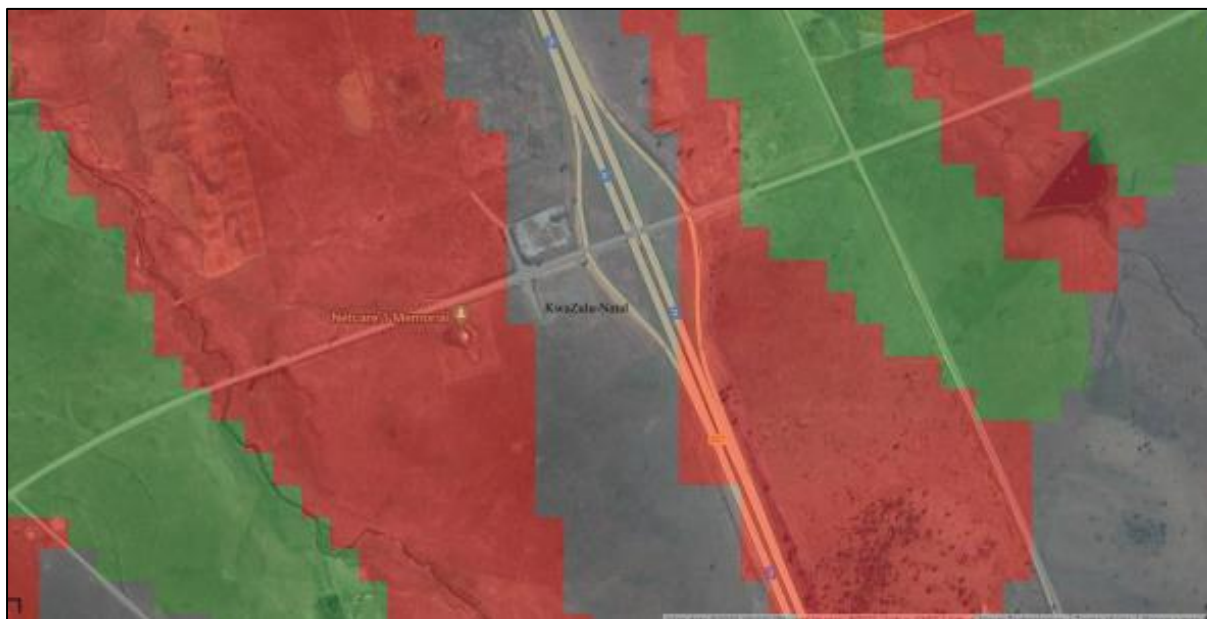


Figure 29: Palaeontological sensitivity map

## 5.10 SOCIO-ECONOMIC CONTEXT

### 5.10.1 uThukela District Municipality

The uThukela District Municipality's (UTDM) Integrated Development Plan (IDP) for 2024/2025 outlines a comprehensive strategic framework designed to address the district's development needs and challenges. The IDP is developed in compliance with Chapter 5 of the Local Government Municipal Systems Act (32 of 2000), which mandates a strategic plan for the municipality's development. The document emphasises aligning the IDP with the municipality's budget, ensuring financial resources are allocated to meet strategic priorities and community needs. The IDP addresses key economic growth targets, identifies investment opportunities, and responds to financial constraints while aiming to improve service delivery, infrastructure development, and community well-being. The plan integrates various performance management systems to ensure effective implementation and accountability.

The proposed Kopleegte Recharging Station aligns well with the UTDM's IDP for 2024/2025. The project supports the IDP's focus on sustainable development, economic growth, and infrastructure improvement by promoting clean energy solutions and reducing carbon emissions. By incorporating solar PV arrays for EV charging stations, the project enhances the district's commitment to green energy and aligns with the IDP's goal of addressing environmental sustainability. Additionally, the project contributes to economic opportunities by providing infrastructure that supports the logistics sector, in line with the IDP's objectives of fostering economic development and improving service delivery within the municipality. The alignment with the IDP ensures that the project not only addresses current needs but also contributes to the long-term strategic goals of the UTDM.

The total value of goods and services produced in uThukela in 2011 was R13.4 billion, contributing 5% to the provincial economy. The district's GVA contribution grew at an average of 6% per annum between 2001 and 2011, which is above the overall average for KZN of 4%. This is attributed to the high average growth in Okhahlamba, Alfred Duma and Inkosi Langalibalele municipalities.

Agriculture contributed R946 million to the district economy in 2011 and employed 7 959 people. The sector had one of the highest average annual growth rates in terms of GVA at 8% for 2001 to 2011, although employment growth was negative at -5% per annum. The number of people employed in agriculture, forestry and fishing started decreasing in 2007, which is in line with provincial trends in the sector.

The sector contributed 7% to total GVA and employment within the municipality in 2011. The municipality's agricultural sector contributed 7% to total agricultural GVA of KZN in 2011, up from 4% in 2001. Employment in uThukela's agricultural sector as a proportion of total agricultural employment in KZN was 8% in 2011, also up from 4% in 2001. Commercial agriculture occupies a large portion of the municipal land area, but subsistence farming is the dominant activity in the municipality.

According to the 2007 Census of Agriculture, there was approximately 63 000 ha of area planted to crops in the district in 2014. The main crop planted was maize followed by potatoes, with the main areas for cropping being Estcourt and Bergville. In addition, there were 1 million chickens, 56 000 pigs, 47 000 cattle and 26 000 sheep in the district in 2015. Beef ranching dominates in Alfred Duma local municipality, whilst chickens are the dominant activity in Inkosi Langalibalele local municipality. The main area of sheep and pig farming is also in Inkosi Langalibalele local municipality.

The main source of employment within the district in 2011 was wholesale and retail trade, catering and accommodation at 25%. This was followed by government at 16% and community, social and personal services at 15%. Employment in the primary sector comprised around 7% of total employment in the district in 2011.

From an employment growth perspective, the agriculture; manufacturing; and electricity, gas and water sectors showed an average decrease in employment of 5%, 2% and 1% respectively between 2001 and 2011. The biggest employment gains were in mining and quarrying (6% growth); finance, insurance, real estate and business services; transport, storage and communications; and general government (all 5% growth respectively).

The unemployment rate in uThukela district municipality was sitting in 31.8% in 2016 and 32.2% in 2017. The trend is that in the uThukela district and its family of municipalities, the unemployment rate is accumulative.

Alfred Duma local municipality unemployment rate was sitting at 29.0% in 2016 and 29.4% in 2017. Inkosi Langalibalele local municipality recorded the unemployment rate of 34.5% in 2016 and 34.9% in 2017. Okhahlamba local municipality was sitting at 36.5% in 2016 and 36.8% in 2017.



Figure 30: uThukela District Municipality<sup>9</sup>

<sup>9</sup> <https://municipalities.co.za/>

### 5.10.2 Okhahlamba Local Municipality

The Okhahlamba Local Municipality Integrated Development Plan (IDP) for 2021/2022 provides a strategic framework that guides the municipality's developmental initiatives. For the Kopleegte Recharging Station the following socio-economic aspects from the IDP are pertinent:

- **Economic and Social Infrastructure:** The IDP identifies the enhancement of economic and social infrastructure as a priority. The development and maintenance of essential public infrastructure are vital for sustained economic growth and poverty alleviation. Given the project's nature, it aligns with the municipality's vision of improving infrastructure, which can stimulate economic activities and provide essential services to the community.
- **Local Economic Development:** The IDP emphasizes the significance of activities that stimulate cash generation, which can considerably affect further activity within the area. Activities with a cash generation element, especially those targeting rural households, need to be identified and prioritized. The Kopleegte Recharging Station, by providing a solar-powered Electric Truck charging station and PV facility, can serve as a catalyst for local economic development, bringing rural households into the commercial mainstream.
- **Access to Community Facilities:** The municipality acknowledges the need for improved access to social services, including clinics and schools. While the project primarily focuses on energy and transportation, the establishment of such a facility can indirectly support the broader goal of improving access to essential services by fostering local development and potentially attracting further investments in the area.
- **Environmental Considerations:** The IDP highlights the importance of adopting environmentally sound practices. The Kopleegte Recharging Station, being a solar-powered initiative, aligns with this vision by promoting renewable energy sources, thereby contributing to sustainable development within the municipality.
- **Challenges and Interventions:** The IDP outlines several challenges faced by the municipality, including poor communication channels, lack of accredited skills development programs, and inadequate technical knowledge. The establishment of the Kopleegte Recharging Station can serve as an intervention by creating employment opportunities, facilitating skills transfer, and promoting sustainable practices.
- **Strategic Framework:** The IDP's strategic framework emphasizes the need for inclusive economic growth, access to quality education, improved healthcare, and sustainable communities. The project, by fostering local economic development and promoting sustainable energy solutions, aligns with these strategic objectives.

In alignment with the Okhahlamba Local Municipality's IDP, the Kopleegte Recharging Station can play a pivotal role in addressing some of the socio-economic challenges faced by the municipality. By integrating the project's objectives with the strategic goals outlined in the IDP, there's potential for holistic development that benefits both the community and the environment.

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## 6 ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

Environmental issues were raised through desktop analysis, site visits, informal discussions with the project team, specialists and authorities, and by Interested and Affected Parties through the initial public participation period. All issues raised will be assessed in the specialist reports and will form part of the Environmental Impact Report. Additional issues raised during the public participation will be listed in the Final Scoping Report.

The following potential issues have been identified:

### 6.1 BIODIVERSITY IMPACT

The following findings were made with the preliminary Terrestrial Biodiversity Assessment:

- The site is mostly cultivated and has thus low ecological importance.
- The only areas with a Medium-High sensitivity is the wetland and drainage areas that should and could be avoided at this site.
- The site has little to no remnants of Eastern Free State Sandy Grassland.



## 6.2 FRESHWATER IMPACT

The following potential issues were identified in the initial Freshwater Impact Assessment:

The nature of the project should, in concept have low impacts on the surface/ groundwater water features identified within this report, given the areas earmarked for development remain out with the hydrological sensitive areas and their associated buffer zones. Erosion and sedimentation from the project activities, together with the potential for alien invasive plant growth and the possible modification of surface water runoff and water quality may lead to additional impacts on the freshwater habitats within the study area however these are taken into consideration within the Impact Assessment.

It's recommended that the activity footprint take the hydrological features into consideration and remain attentive to sensitivities surrounding the identified freshwater features. Provided the construction and operation activities of the projects remain contained within the allocated areas and any disturbed areas within the freshwater features rehabilitated, the overall impact should be limited and of low significance.

Key measures for mitigation include on-site stormwater management; limiting disturbance within freshwater features and buffers, control of alien vegetation and rehabilitation of eroded areas. Provided the development is placed strategically to best minimise impacts on sensitive features and their recommended buffers, the technology alternatives should limit the freshwater impacts. It is recommended that 1:50 and 1:100-year floodline be taken into consideration for the development due its locality in proximity of watercourses, albeit that one of these watercourses are seasonal/ non-perennial. These floodline determination will ensure that the infrastructure be located outside of the flood risk areas.

Recommended mitigation measures are as follows:

- The proposed development: The development footprint must be located to remain outwith the boundaries of the hydrological sensitive areas and their recommended buffers. Key mitigation is for aspects such as stormwater management; alien vegetation control and erosion and sediment management.
- Access roads: preferably existing road infrastructure must be utilized as far as practically possible to minimize disturbance of natural features. Limit disturbance near/ within watercourses (both perennial/ non-perennial). Do not impede on the flow of the watercourses. Any disturbed areas should be rehabilitated on a long-term basis.
- Development infrastructure: The development infrastructure should be placed, respectively 24 and 25m outside of the delineated wetlands. Monitor disturbed areas for erosion, alien invasive plants and rehabilitation success.
- Long-term maintenance and management: Stormwater and good housekeeping measures onsite to prevent flow and quality impacts on surface/ groundwater resources. Maintain any culvert structures within watercourses.

## 6.3 AVIFAUNAL IMPACT

### 6.3.1 Preliminary analysis

The overall environmental impacts of solar energy developments are poorly understood globally. Unlike wind energy developments, there is presently no clear pattern in the types of birds negatively affected by solar plants, and collision casualties recorded to date include a wide variety of avian guilds (Jenkins et al., 2017). Widely accepted impacts of solar PV for all faunae include permanent habitat destruction, fragmentation, and the associated displacement of individuals (particularly for range restricted species). For birds, an issue can be collision with reflective panels as individuals mistake large panel arrays for wetlands or water bodies, otherwise known as the “lake effect” (Lovich and Ennen, 2011; Smit, 2012; DeVault et al., 2014; Visser, 2016; Kosciuch et al., 2020; Chock et al., 2021). Other general impacts documented to date include noise and disturbance caused by construction activities, attraction of novel species through the creation of artificial nest sites, burrowing sites, and shade, and chemical pollution from panel cleaning (Lovich and Ennen, 2011; DeVault et al., 2014; Chock et al., 2021). The impacts of additional infrastructure associated with solar energy developments, such as roads, power lines, and substations, must also be considered. These include, habitat destruction, fragmentation, and threat of collision, and electrocution for birds (Jenkins et al., 2017).

Possible impacts on fauna and avifauna during the construction and operational phases and their sources associated with the proposed development are provided in Table 8. The installation of the PV SEF and ancillary infrastructure will require the clearance of approximately 38 ha of vegetation during the construction phase. The main impact relating to fauna and avifauna will be loss of habitat and potential displacement of small passerines. The proposed layout shows the infrastructure covering key habitats such as parts of the natural watercourses and farm dams. Impacts these highly sensitive areas would include removal of key foraging and breeding habitat for avifauna and would result in displacement of waterfowl and other species dependent on these aquatic habitats. Impacts on highly sensitive habitats can be avoided or minimised by the project layout avoiding these areas.

Other possible direct impacts include possible collisions by birds with PV panels and power lines during the operational phase. Possible indirect impacts include spread of invasive alien vegetation due to disturbance to the soil, and contamination of the surrounding watercourses from chemicals used in cleaning of the panels or hydrocarbons from the truck stop workshop and wash bay.

**Table 8: Possible impacts arising from the proposed development**

Possible Impact	Source of Impact	Area and Species to be Affected	Development Phase	Nature of Impact
Loss of natural vegetation and habitat	Clearing vegetation for installation of solar panels, roads, and buildings	Natural and near-natural grassland vegetation; Small passerines; Raptors; generalist mammals	Construction	Direct
Loss of wetland and aquatic habitat	Removal of farm dams and parts of the natural watercourse for installation of solar panels	Natural watercourse and farm dams; Waterfowl, aquatic fauna	Construction	Direct
Collision of avifauna with reflective surfaces of solar panels leading to injury or death	Solar panels perceived to be a water body by avifauna	Solar PV development site; Gamebirds, waterfowl; raptors	Operation	Direct

Possible Impact	Source of Impact	Area and Species to be Affected	Development Phase	Nature of Impact
Collision and/or electrocution of avifauna with associated power lines	Existing power lines	Existing power lines; Gamebirds, waterfowl; raptors	Operation	Direct
Contamination of the environment by hazardous materials	Construction activities; Cleaning of solar panels during operation; Truck workshop, and cleaning of trucks	Watercourses downstream of the development, and soil below the panels; All species	Construction and Operation	Indirect
Spread of invasive alien plant species	Disturbance to soil and clearing of vegetation	Study area and surroundings	Construction	Indirect
Disturbance and displacement of resident species	Clearing of site and construction activities; Operational and maintenance activities; attraction of novel species	Site and immediate surroundings; Waterfowl; Small terrestrial species; Common ground-dwelling gamebirds	Construction and Operation	Indirect
Habitat fragmentation	Clearing vegetation and installation of solar panels, roads, and buildings	Study area	Operation	Indirect
Increased human disturbance; Gradual environmental degradation	<ul style="list-style-type: none"> <li>Disturbance to the study area, adding to existing pressures in the landscape (farming)</li> <li>Adding to cumulative pressures in the landscape caused by other approved or proposed renewable energy projects</li> </ul>	Study area and surrounding natural areas	Operation	Cumulative

### 6.3.2 Pre-construction monitoring requirements & recommendations

The study area is relatively small and relatively disturbed considering the proximity to the N3 highway. The site is largely comprised of disturbed but natural grassland habitat that may support birds found in the region. It is evident that the broader landscape supports many priority species (bird species that may be susceptible to the impacts of solar PV development), including SCC, which have been confirmed to occur in the surrounding areas. It is therefore important to conduct the appropriate pre-construction monitoring according to the Best Practice Guidelines: Birds & Solar Energy (Jenkins et al., 2017) for assessing and monitoring the impact of solar power generating facilities on birds in southern Africa. This will take the avifaunal assessment to Stage 2 – Data Collection, which includes an on-site avifaunal assessment during the peak summer season on which to base the impact assessment report and provide a baseline against which post-construction monitoring (if required) can be compared.

The duration and scope of data collection is guided by the size of the proposed development (in this case < 30 ha / < 10 MW) and the results of this preliminary desktop assessment, which verifies the sensitivity of the site from an avifaunal perspective (medium to low sensitivity). For the Kopleegte project area, assessment Regime 1 with one site visit of 1-5 days falling within the peak (summer) season is appropriate.

Based on the key habitats present in the study area and surrounds, the following sampling must be incorporated into the data collection phase:

- Survey for the presence of small terrestrial birds through meander searches.
- Counts for large terrestrial birds and raptors.
- Searches for any nest sites of priority species such as raptor nests. All such sites should be mapped accurately and checked for any evidence of breeding.
- Flight behaviour of priority species flying over or near the proposed development area and associated risk of collision.
- Bird numbers at wetlands and farm dams and local movements between waterbodies.
- Details of any incidental sightings of priority species.

The following preliminary recommendations are intended to guide the positioning of the proposed infrastructure and layout:

- All drainage lines, wetlands, and dams must be avoided, including the buffer recommended by the aquatic and/or wetland specialist.
- The natural grassland associated with the Channelled Valley Bottom Wetlands and farm dam and the Depression Wetland on the eastern side must be avoided.
- All rocky koppies and rocky areas must be avoided.

**Table 9: Recommended avifaunal assessment regimes (Jenkins et al., 2017)**

Type	Size	Avifaunal Sensitivity*		
		Low	Medium	High
All solar technologies except Concentrated Solar Power (CSP)	Small (<30 ha / <10 MW)	<b>Regime 1</b> One site visit of 1-5 days	<b>Regime 1</b> One site visit of 1-5 days	<b>Regime 2</b> 2-3 seasonal visits of 3-5 days over 6 months Pre- & post-con monitoring mortality searches
	Medium (30-150 ha / 10-50 MW)	<b>Regime 1</b> One site visit of 1-5 days	<b>Regime 2</b> 2-3 seasonal visits of 3-5 days over 6 months Pre- & post-con monitoring mortality searches	<b>Regime 2</b> 2-3 seasonal visits of 3-5 days over 6 months Pre- & post-con monitoring mortality searches
	Large (>150 ha / >50 MW)	<b>Regime 2</b> 2-3 seasonal visits of 3-5 days over 6 months Pre- & post-con monitoring mortality searches	<b>Regime 2</b> 2-3 seasonal visits of 3-5 days over 6 months Pre- & post-con monitoring mortality searches	<b>Regime 3</b> 4-5 seasonal visits of 4-8 days over 12 months Pre- & post-con monitoring mortality searches
CSP	All	<b>Regime 3</b> 4-5 seasonal visits of 4-8 days over 12 months Pre- & post-con monitoring mortality searches		

The avifaunal sensitivity is based on the number of priority species present, or potentially present, the regional, national, or global importance of the affected area for these species (both individually and collectively), and the perceived susceptibility of these species (both individually and collectively) to the anticipated impacts of development

## 6.4 HERITAGE / ARCHAEOLOGICAL IMPACT

The possible impact on heritage resources (heritage / archaeological and palaeontological) has been identified as a possible environmental impact as a result of the development of the Kopleegte Recharging Station.

The site, as a whole is not significant enough to warrant mitigation. Most of the features are in a poor state of preservation and have been damaged. However, enough of the site remains to yield basic information that can be added to the general understanding of Late Iron Age (LIA) settlement patterns.

The applicant / developer will require a permit to damage/alter/destroy the site and features. This can be obtained from KZNARI who will require some form of mitigation. The following mitigation to be undertaken is suggested in the following order:

1. Accurate mapping with a land surveyor;
2. Results from mapping will determine areas of interest for limited excavation;
3. Graves to be excavated and soil sample taken if no remains are found.

The area was scanned using LADAR. Once the features have been mapped, a more accurate vision of the area can be obtained. This in turn will indicate areas that are potentially excavatable. The stone walled enclosures may have graves inside them, or attached to them. Moreover, houses would occur behind the primary enclosures and these would yield more information. Excavations should occur for the graves in the western footprint. Each grave should be bisected with a trench to determine if there is a grave and/or human remains. If human remains occur, then the grave should be fully excavated. If no human remains occur, then a soil sample from the lower part of the pit should be taken. It must be noted that if this part of the main site follows the excavations at GLK078, then it is not expected to find many artefacts nor human remains.

All of the graves in this area date to the Moor Park Period, apart from two that appears to be 16th – 18th century in age. No post 18th century graves occur in the footprint occurs on part of a larger archaeological site that was surveyed, mapped and partially excavated in 2008. The footprint is in an area that has been partially affected by a laydown area for road works and a memorial. A total of twenty three (23) archaeological features were recorded and these included stone walled enclosures, graves, and general walling. These features mostly date to the early LIA and are associated with the Moor Park Phase. The results of the mitigation should be on display at the main shops. This display can be an information board.

Most of the archaeological features are in a poor condition. Many of the graves have been disturbed by termatarium and/or aardvark burrows. It is for this reason that the area is surveyed with a land surveyor to note the spatial component of the site. This will need to occur after the area has been burnt. Once the mapping results are finalised, limited excavations should occur in sensitive areas such as graves.

The chances of finding significant fossiliferous material are low. However, a Chance Find Protocol was initiated and needs to form part of the EMPr.



## 6.5 LANDSCAPE / VISUAL IMPACT

The area is predominantly characterised by agricultural landscapes and minimal infrastructure, with some existing elements such as the Netcare Helicopter Memorial Crash Site and Eskom pylon infrastructure contributing to the visual context. Key Visual Elements include:

- The site is primarily open grassland with minimal natural disturbances, offering a moderate Visual Absorption Capacity (VAC).
- Significant topographical features, such as the distant rolling hills and koppies, provide a unique visual setting.
- The Netcare Helicopter Memorial Crash Site is a culturally and historically significant landmark that must be preserved and integrated sensitively into the project design.

Anticipated Visual Impacts:

- **Altered Landscape and Sense of Place:** The introduction of solar structures will change the visual character of the landscape, which is currently characterised by open grasslands and flat terrains. This could disrupt the visual harmony of the area and alter the sense of place for local residents and visitors.
- **Visibility of the Facility to Residents:** Given the gentle nature of the site, the solar structures could be visible from various viewpoints, potentially affecting the visual amenity for local residents.
- **Impact on Water Features:** The presence of the Kaalspruit River and other non-perennial rivers and wetlands contributes significantly to the visual appeal of the region. Any visual impact on these features could affect their aesthetic value.
- **Impact on Vegetation:** The construction of solar structures could disrupt the existing KwaZulu-Natal Highland Thornveld vegetation and grasslands, affecting the site's visual sensitivity and local biodiversity.
- **Impact on Local Infrastructure:** The presence of existing high and medium voltage overhead lines, the Rostrata Substation, and three telecommunication towers could potentially be impacted by the construction and operation of the N3 Electrical Highway Kopleegte Truck Site.

Mitigation Measures:

- Implement landscape screening with native vegetation to blend the solar structures into the surroundings and maintain the area's sense of place.
- Use natural topography and vegetation to screen the facility from key viewpoints and consider the strategic placement of structures to minimise visual intrusion.
- Establish buffer zones around water features as per the Aquatic Specialist's Recommendations and ensure that any development is set back to minimise visual impacts.
- Establish buffer zones around Netcare Helicopter Memorial Crash Site as per the Heritage Specialist's Recommendations and ensure that any development is set back to minimise visual impacts.
- Restore and rehabilitate disturbed areas with native plant species and implement the mitigation measures recommended by the Vegetation Specialist.
- Coordinate with local authorities and utility providers to ensure that the new development integrates smoothly with existing infrastructure without causing disruptions.

The proposed development of the Kopleegte Recharging Station is classified as a Category 4 development due to its extensive infrastructure and potential visual impact. The Visual SSV process

has highlighted the need for careful consideration of the site's unique visual and cultural elements. By implementing the recommended mitigation measures, the potential visual impacts can be minimised, ensuring that the development aligns with the local landscape character and preserves the site's environmental and cultural significance.

The Visual SSV report has provided a comprehensive understanding of the site's visual sensitivity and potential impacts, forming a crucial component of the overall Environmental Impact Assessment (EIA) for the project. The findings and recommendations will guide the planning and development process, ensuring that the visual impacts are effectively managed and mitigated.

## **6.6 AGRICULTURAL IMPACT**

The proposed site is located on a property zoned for agricultural use. Currently, large parts of the property are used for agricultural purposes (grazing). Due to the size and nature of the proposed development, a small amount of agricultural land will be lost.

### **6.6.1 Compliance Statement**

An Agricultural Compliance Statement for the proposed development was undertaken as part of the pre-application Scoping Report. The following findings were made as per the Agricultural Compliance Statement report:

- The site was dominated by shallow soils which is characteristic of Fa land type data.
- No field were verified, and the Netcare crash memorial was identified as land use change.
- The property is being used for grazing and cutting of grasslands.

Therefore, the entire site is classified as moderate sensitivity and very well suited for grazing. Therefore, the site assessment does not align with the screening tool for high agricultural sensitivity. No evidence of cultivation was found on-site, and the soils classified on site were not suitable for cultivation.

Due to the low impact on existing agricultural activities and the site being classified as medium sensitivity, it is the specialist's opinion that the development continues. The development will not have a significant impact on agricultural activities in the area and poses no threat to food security.

### **6.6.2 Financial incentive for agriculture**

An agreement structure with financial incentives for agriculture between the applicant and the landowner(s), farmers by profession, should be considered. If the loss of agricultural land does not significantly impact food security or reduce arable land, diversifying income sources should be seen as positive for agriculture. Such an agreement could give landowners a share of the profit from the recharging facility, providing an income source independent of farm activities.

## **6.7 SOCIO-ECONOMIC IMPACT**

### **6.7.1 Socio-economic Impact Statement and Conclusion**

South Africa's socio-economic landscape faces challenges like unemployment and infrastructural gaps. The Kopleegte Recharging Station aims to address these by integrating renewable energy into transportation, establishing solar-powered electric truck charging stations in regions like Kwa-Zulu Natal.

This initiative can create jobs, support sustainable development, and reduce carbon footprints, aligning with South Africa's sustainability goals. It can boost local economies through improved infrastructure and tourism. Although potential environmental impacts and disruptions require careful planning, no fatal flaws were identified. With proper mitigation and community engagement, the project can provide long-term benefits and contribute to South Africa's green transportation future.

### **6.7.2 Recommendations**

Recommendations for the project include prioritizing local labour for unskilled and semi-skilled roles to boost employment and mitigate socio-economic challenges from non-local workers. Collaboration with local educational institutions for tailored training programs is also advised. Local suppliers should be prioritized in procurement processes to stimulate the local economy. Construction impacts like noise, dust, and traffic disturbances should be addressed with regular monitoring and interventions. A comprehensive safety and security plan should be implemented for construction and operation phases, addressing potential risks and emergency protocols. Open communication with the local community through a dedicated liaison officer is essential, providing updates, feedback sessions, and grievance mechanisms.

The project should align with best practices in socio-economic development, ensuring equitable benefit distribution, gender equality, and support for vulnerable groups. Partnerships with local businesses are encouraged to integrate project infrastructure, promoting local tourism and economic growth. These recommendations will help the project positively impact the local community and economy while minimizing negative effects.

## **7 DETAILS OF THE PUBLIC PARTICIPATION PROCESS**

Interested and Affected Parties (I&APs) have been and will be identified throughout the process. Landowners adjacent to the proposed site, relevant organs of state, organisations, ward councillors and the Local and District Municipality were added to this database. A complete list of organisations and individual groups identified to date is shown in Appendix 4.

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

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

Table 10: Public participation process Regulations as per NEMA EIA Regulations, 2014 (as amended 2021)

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
<b>Regulation 39 - Activity on land owned by person other than proponent</b>		
1.	If the proponent is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorisation in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake such activity on that land.	Written consent of the landowner or person in control of the land to undertake the proposed activities on the land has been obtained through an established agreement.
2.	Subregulation (1) does not apply in respect of— a) linear activities; and	Noted. Not applicable to this proposed development.
	b) strategic integrated projects as contemplated in the Infrastructure Development Act, 2014.	Noted. Not applicable to this proposed development.
<b>Regulation 40 - Purpose of public participation</b>		
1.	The public participation process to which the— a) basic assessment report and EMPr, and the closure plan in the case of a closure activity, submitted in terms of regulation 19; and	As part of the pre-application Scoping phase, a 30-day commenting period occurred from <u>25 September 2024 to 25 October 2024</u> . All potential or registered interested and affected parties, including the competent authority were invited and allowed to submit comments regarding the proposed development.
	b) scoping report submitted in terms of regulation 21, the environmental impact assessment report, EMPr, and the closure plan in the case of a closure activity, submitted in terms of regulation 23; was subjected to must give all potential or registered interested and affected parties, including the competent authority, a period of at least 30 days to submit comments on each of the basic assessment report, EMPr, scoping report and environmental impact assessment report, and the closure plan in the case of a closure activity, as well as the report contemplated in regulation 32, if such reports or plans are submitted at different times.	
2.	The public participation process contemplated in this regulation must provide access to all information that reasonably has or may have the potential to influence any decision with regard to an application unless access to that information is protected by law and must include consultation with — a) the competent authority;	As part of the pre-application Scoping phase, initial notification letter were sent to —  a) The KwaZulu-Natal Department of Economic Development and Environmental Affairs (KZN EDTEA), identified as the competent authority.
	b) every State department that administers a law relating to a matter affecting the environment relevant to an application for an environmental authorisation;	



Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
	<p>c) all organs of state which have jurisdiction in respect of the activity to which the application relates; and</p> <hr/> <p>d) all potential, or, where relevant, registered interested and affected parties.</p>	<p>b &amp; c) The following state departments that administers a law relating to a matter affecting the environment relevant to an application and organs of state that have jurisdiction in respect of the activity to which the application relates:</p> <ul style="list-style-type: none"> <li>- Department of Agriculture and Rural Development</li> <li>- Co-operative Governance and Traditional Affairs</li> <li>- Eskom</li> <li>- Department of Energy</li> <li>- Department of Water and Sanitation</li> <li>- KZN AMAFA and Research Institute</li> <li>- Department of Public Works</li> <li>- Department of Transport</li> <li>- N3 Toll concession</li> <li>- SANRAL</li> <li>- Transnet</li> <li>- Ezemvelo KZN Wildlife</li> </ul> <p>d) All potential, or, where relevant, registered interested and affected parties.</p> <p>These initial notification letters were sent to inform the parties described above about the proposed activity/development and to invite their input.</p>

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
3.	<p>Potential or registered interested and affected parties, including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in subregulation (1) prior to submission of an application but must be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority.</p>	<p>During the pre-application Scoping phase, potential or registered interested and affected parties, including the competent authority were notified and given the opportunity to comment on the proposed development. However, no reports or plans, as outlined in subregulation (1), were available at that time</p> <p>Nevertheless, an opportunity for potential or registered interested and affected parties, including the competent authority to comment on such reports and plans will be given once an application has been submitted to the competent authority.</p>
<b>Regulation 41 – Public participation process</b>		
1.	<p>This regulation only applies in instances where adherence to the provisions of this regulation is specifically required.</p>	<p>Noted.</p>
2.	<p>The person conducting a public participation process must take into account any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of an application or proposed application which is subjected to public participation by—</p> <p>a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of —</p> <p>i. the site where the activity to which the application or proposed application relates is or is to be undertaken; and</p>	<p>During the pre-application Scoping phase an English and an isiZulu A2 sized notice board was fixed on the boundary / fence of the site where the activity to which the proposed application relates is to be undertaken.</p> <p>Additionally, multiple English and isiZulu A3 sized notice boards were placed at various locations around the site.</p>
	<p>ii. any alternative site</p>	<p>There is no alternative site.</p>
	<p>b) giving written notice, in any of the manners provided for in section 47D of the Act, to—</p> <p>i. the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken</p>	<p>As part of the pre-application Scoping phase, initial notification letters were sent to occupiers and persons in control of the site via email and/or mail drops conducted during the site visit.</p>
	<p>ii. owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken</p>	<p>As part of the pre-application Scoping phase, initial notification letters were sent to occupiers of land adjacent to the site via email and/or mail drops conducted during the site visit.</p>

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
	<p>iii. the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area</p>	<p>As part of the pre-application Scoping phase, an initial notification letter was sent to the relevant municipal ward councillor at the Okhahlamba Local Municipality.</p> <p>No ratepayer organisation were identified for the community in the area.</p>
	<p>iv. the municipality which has jurisdiction in the area</p>	<p>As part of the pre-application Scoping phase, an initial notification letter was sent to a representative of the Okhahlamba Local Municipality and the uThukela District Municipality.</p>
	<p>v. any organ of state having jurisdiction in respect of any aspect of the activity; and</p>	<p>As part of the pre-application Scoping phase, initial notification letters were sent to the following organs of state having jurisdiction in respect of any aspect of the activity:</p> <ul style="list-style-type: none"> <li>- Department of Agriculture and Rural Development</li> <li>- Co-operative Governance and Traditional Affairs</li> <li>- Eskom</li> <li>- Department of Energy</li> <li>- Department of Water and Sanitation</li> <li>- KZN AMAFA and Research Institute</li> <li>- Department of Public Works</li> <li>- Department of Transport</li> <li>- N3 Toll concession</li> <li>- SANRAL</li> <li>- Transnet</li> <li>- Ezemvelo KZN Wildlife</li> </ul>
	<p>vi. any other party as required by the competent authority</p>	<p>Noted. Should the competent authority require any other party to receive written notice, then this will be duly carried out.</p>
	<p>c) placing an advertisement in— i. one local newspaper; or</p>	<p>An English and isiZulu advertisement was placed in the Ladysmith Gazette, a local newspaper, on 20 September 2024.</p>

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
	ii. any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;	Noted. Not applicable to this proposed development.
	d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in paragraph (c) (ii); and	Noted. Not applicable to this proposed development.
	e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to — <ul style="list-style-type: none"> <li>i. illiteracy;</li> </ul>	Noted. In instances where a person desires to participate in the process but is unable to do so due to illiteracy, disability, or any other disadvantage, and make such a desire known to the EAP, then reasonable alternative methods will be used, as agreed upon by the competent authority.
	<ul style="list-style-type: none"> <li>ii. disability; or</li> </ul>	
	<ul style="list-style-type: none"> <li>iii. any other disadvantage</li> </ul>	
3.	A notice, notice board or advertisement referred to in subregulation (2) must— <ul style="list-style-type: none"> <li>a) give details of the application or proposed application which is subjected to public participation; and</li> <li>b) state —               <ul style="list-style-type: none"> <li>i. whether basic assessment or S&amp;EIR procedures are being applied to the application;</li> <li>ii. the nature and location of the activity to which the application relates;</li> <li>iii. where further information on the application or proposed application can be obtained; and</li> <li>iv. the manner in which and the person to whom representations in respect of the application or proposed application may be made.</li> </ul> </li> </ul>	The written notices — specifically, notification letters, notice boards, and advertisements — that form part of the pre-application Scoping phase's 30-day commenting period, contain details of the proposed application, which is subject to public participation.  Please refer to Appendix 4 for proof of the written notices.
4.	A notice board referred to in subregulation (2) must— <ul style="list-style-type: none"> <li>a) be of a size of at least 60cm by 42cm; and</li> <li>b) display the required information in lettering and in a format as may be determined by the competent authority.</li> </ul>	The notice boards measured 60cm by 42cm is size and displayed the required information in a legible format.  Please refer to Appendix 4 for proof of the notice boards.

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
5.	Where public participation is conducted in terms of this regulation for an application or proposed application, subregulation (2) (a), (b), (c) and (d) need not be complied with again during the additional public participation process contemplated in regulations 19 (1) (b) or 23 (1) (b) or the public participation process contemplated in regulation 21 (2) (d), on condition that— a) such process has been preceded by a public participation process which included compliance with subregulation (2) (a), (b), (c) and (d); and	Noted.
	b) written notice is given to registered interested and affected parties regarding where the— i. revised documents as contemplated in regulation 19 (1) (b);	Noted.
	ii. revised documents as contemplated in regulation 23 (1) (b); or	Noted.
	iii. environmental impact assessment report and documents as contemplated in regulation 21 (2) (d); may be obtained, the manner in which and the person to whom representations on these reports or plans may be made and the date on which such representations are due.	Noted.
6.	When complying with this regulation, the person conducting the public participation process must ensure that— a) information containing all relevant facts in respect of the application or proposed application is made available to potential interested and affected parties; and	Noted.
	b) participation by potential or registered interested and affected parties is facilitated in such a manner that all potential or registered interested and affected parties are provided with a reasonable opportunity to comment on the application or proposed application.	Noted.
7.	Where an environmental authorisation is required in terms of these Regulations and an authorisation, permit or licence is required in terms of a specific environmental management Act, the public participation process contemplated in this Chapter may be combined with any public participation processes prescribed in terms of a specific environmental management Act, on condition that all relevant authorities agree to such combination of processes.	Noted.



Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
<b>Regulation 42 - Register of interested and affected parties</b>		
1.	<p>A proponent or applicant must ensure the opening and maintenance of a register of interested and affected parties and submit such a register to the competent authority, which register must contain the names, contact details and addresses of—</p> <p>a) all persons who, as a consequence of the public participation process conducted in respect of that application, have submitted written comments or attended meetings with the proponent, applicant or EAP;</p> <p>b) all persons who have requested the proponent or applicant, in writing, for their names to be placed on the register; and</p> <p>c) all organs of state which have jurisdiction in respect of the activity to which the application relates.</p>	A register of interested and affected parties was opened and is maintained.
<b>Regulation 43 - Registered interested and affected parties entitled to comment on reports and plans</b>		
1.	A registered interested and affected party is entitled to comment, in writing, on all reports or plans submitted to such party during the public participation process contemplated in these Regulations and to bring to the attention of the proponent or applicant any issues which that party believes may be of significance to the consideration of the application, provided that the interested and affected party discloses any direct business, financial, personal or other interest which that party may have in the approval or refusal of the application.	This subregulation is communicated to registered interested and affected parties during the public participation process.
2.	In order to give effect to section 24O of the Act, any State department that administers a law relating to a matter affecting the environment must be requested, subject to regulation 7 (2), to comment within 30 days.	<p>State departments that administer laws relating to environmental matters relevant to the application, as well as organs of state with jurisdiction over the activity, were notified of the proposed application and invited to comment within 30 days.</p> <p>However, should comments not be received within the prescribed timeframes, it would be assumed that no comments are forthcoming.</p>
<b>Regulation 44 - Comments of interested and affected parties to be recorded in reports and plans</b>		

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
1.	The applicant must ensure that the comments of interested and affected parties are recorded in reports and plans and that such written comments, including responses to such comments and records of meetings are attached to the reports and plans that are submitted to the competent authority in terms of these Regulations.	Comments of interested and affected parties are recorded together with the responses in a Comment and Response report (CRR) and where applicable, incorporated into reports and plans.
2.	<p>Where a person desires but is unable to access written comments as contemplated in subregulation due to—</p> <p>a) a lack of skills to read or write;</p> <p>b) disability; or</p> <p>c) any other disadvantage;</p> <p>reasonable alternative methods of recording comments must be provided for.</p>	Noted. Where a person desires to but is unable to access written comments due to illiteracy, disability, or any other disadvantage, and make such a desire known to the EAP, then reasonable alternative methods of recording comments will be provided for.

## 8 PLAN OF STUDY FOR THE EIA

### 8.1 TASKS TO BE UNDERTAKEN

Due to the nature of the proposed development, there are a number of activities that will still need to be undertaken during the next phase of the project. The proposed process is as described as follows (this follows from a Scoping process to be accepted by the KwaZulu-Natal Department of Economic Development and Environmental Affairs (KZN EDTEA)):

The NEMA application form will be submitted to KZN EDTEA along with the Draft Scoping Report which will also be made available for viewing and comment for a 30-day comment period. Comments received during the Public Participation Process will be incorporated into the Final Scoping Report, to be submitted to KZN EDTEA for a decision.

The following is a list of tasks to be performed as part of the EIA Process. Should the process be modified significantly, changes will be copied to KZN EDTEA.

**Table 11: EIA process - Timeline**

EIA Process	
Task	Timeframes
Submit NEMA Application and Draft Scoping Report (DSR) and Plan of Study for EIA to KZNEDTEA and distribute to registered I&APs for comment.	February 2025
Submit Final Scoping Report (FSR) and Plan of Study to KZNEDTEA for a decision.	March 2025
Receive approval for the FSR and the Plan of Study for EIA.	April 2025
Undertake/further specialist studies and compile the Draft Environmental Impact Report (EIR) for public comment based on specialist information.	May 2025
Submit Draft EIR for public comment.	June 2025
Receive responses to the Draft EIR.	July 2025
Preparation of a FINAL EIR and submission to KZNEDTEA	August 2025

*\*Timeframes provided are estimates and are subject to change. They serve as a tentative indication and may be adjusted as the process progresses.*

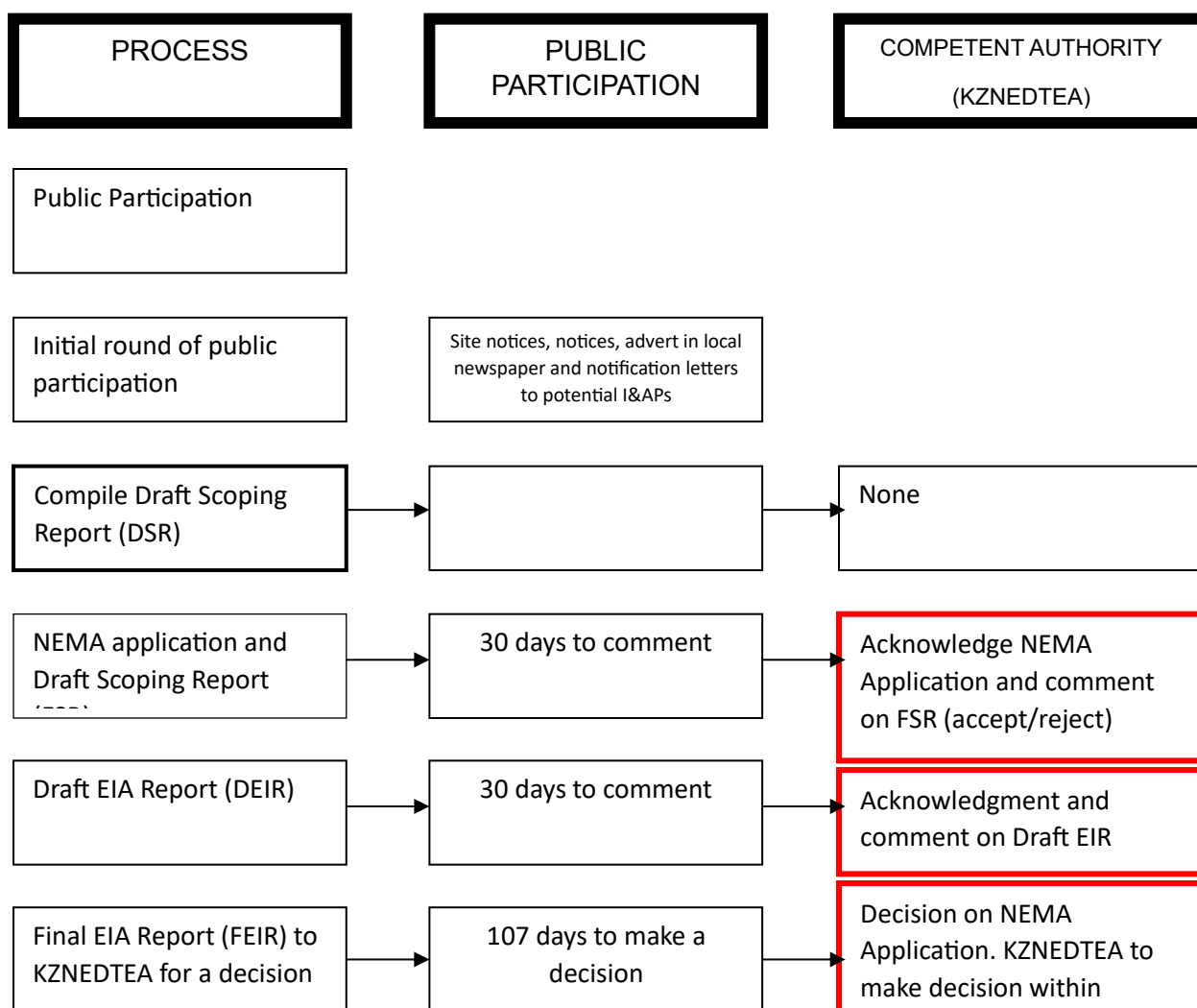


Figure 31: Summary of the EIA process and public participation process. The red indicates the stages where the competent authority will be consulted during the process

## 8.2 PUBLIC PARTICIPATION AND INTERESTED AND AFFECTED PARTIES

Please refer to Figure 32 to see where the public participation process is present in the environmental impact assessment. The Interested and Affected Parties will have a chance to view and comment on all the reports that are submitted. The figures also indicated what timeframes are applicable to what stage in the process. If required, meetings with key stakeholders will be held.

At the end of the comment period, the EIR will be revised in response to feedback received from I&APs. All comments received and responses to the comments will be incorporated into the Final Environmental Impact Report (EIR). The Final EIR will then be submitted to KZNEDTEA for consideration and decision-making.

Correspondence with I&APs will be via post, fax, telephone, email and/or newspaper advertisements. Should it be required, this process may be adapted depending on input received during the on-going process and as a result of public input. KZNEDTEA will be informed of any changes in the process.

### 8.3 CRITERIA FOR SPECIALIST ASSESSMENT OF IMPACTS

As a result of the environmental issues and potential impacts identified in Section 6, the need for the following specialist studies has been identified:

- Biodiversity Assessment
- Freshwater Assessment
- Heritage Impact Assessment
- Socio-economic Impact Assessment
- Visual Impact Assessment
- Agricultural Potential Assessment
- Avifauna Impact Assessment

These specialist studies have been conducted and some have been concluded. The findings of some the studies have already been included in this report, however, the studies will be finalised and the findings included during the EIA phase.

The impacts of the proposed activity on the various components of the receiving environment will be evaluated in terms of duration (time scale), extent (spatial scale), magnitude and significance as outlined in Table 12. These impacts could either be positive or negative. This includes an assessment of the alternatives, including the option of not proceeding with the proposed development (see Section 4).

The magnitude of an impact is a judgment value that rests with the individual assessor while the determination of significance rests on a combination of the criteria for duration, extent and magnitude. Significance thus is also a judgment value made by the individual assessor.

In addition to determining the individual impacts against the various criteria, the element of mitigation, where relevant, will also be brought into the assessment. In such instances the impact will be assessed with a statement on the mitigation measure that could/should be applied. An indication of the certainty of a mitigation measure considered, achieving the end result to the extent indicated, is given on a scale of 1-5 (1 being totally uncertain and 5 being absolutely certain), taking into consideration uncertainties, assumptions and gaps in knowledge. Cognisance of the minimum report content requirements of the various specialist assessment as per the Assessment Protocols (Government Notice 320, Government Gazette No. 43110 of 20 March 2020).

**Table 12: Criteria used for evaluating impacts**

Criteria	Category
<b>Nature of impact</b>	This is an evaluation of the effect that the construction, operation and maintenance of a proposed dam would have on the affected environment. This description should include what is to be affected and how.
<b>Duration</b> (Predict whether the lifetime of the Impact will be temporary (less than 1 year) short term (0 to 5 years); medium term (5 to 15 years); long term (more than 15 years, with the Impact ceasing after full implementation of all development)	<b>Temporary:</b> < 1 year (not including construction) <b>Short-term:</b> 1 – 5 years <b>Medium term:</b> 5 – 15 years <b>Long-term:</b> >15 years (Impact will stop after the operational or running life of the activity, either due to natural course or by human interference) <b>Permanent:</b> Impact will be where mitigation or moderation by natural course or by human interference will not occur in a particular means or in a particular time period that the impact can be considered temporary



Criteria	Category
components with mitigations); or permanent.	
<p><b>Extent</b> (Describe whether the impact occurs on a scale limited to the site area; limited to broader area; or on a wider scale)</p>	<p><b>Site Specific:</b> Expanding only as far as the activity itself (<i>onsite</i>)  <b>Small:</b> restricted to the site's immediate environment within 1 km of the site (<i>limited</i>)  <b>Medium:</b> Within 5 km of the site (<i>local</i>)  <b>Large:</b> Beyond 5 km of the site (<i>regional</i>)</p>
<p><b>Intensity</b> (Describe whether the magnitude (scale/size) of the Impact is high; medium; low; or negligible. The specialist study must attempt to quantify the magnitude of impacts, with the rationale used explained)</p>	<p><b>Very low:</b> Affects the environment in such a way that natural and/or social functions/processes are not affected  <b>Low:</b> Natural and/or social functions/processes are slightly altered  <b>Medium:</b> Natural and/or social functions/processes are notably altered in a modified way  <b>High:</b> Natural and/or social functions/processes are severely altered and may temporarily or permanently cease</p>
<p><b>Probability of occurrence</b> Describe the probability of the Impact <u>actually</u> occurring as definite (Impact will occur regardless of mitigations)</p>	<p><b>Improbable:</b> Not at all likely  <b>Probable:</b> Distinctive possibility  <b>Highly probable:</b> Most likely to happen  <b>Definite:</b> Impact will occur regardless of any prevention measures</p>
<p><b>Status of the Impact</b> Describe whether the Impact is positive, negative (or neutral).</p>	<p><b>Positive:</b> The activity will have a social/ economical/ environmental benefit  <b>Neutral:</b> The activity will have no affect  <b>Negative:</b> The activity will be socially/ economically/ environmentally harmful</p>
<p><b>Degree of Confidence in predictions</b> State the degree of confidence in predictions based on availability of information and specialist knowledge</p>	<p><b>Unsure/Low:</b> Little confidence regarding information available (&lt;40%)  <b>Probable/Med:</b> Moderate confidence regarding information available (40-80%)  <b>Definite/High:</b> Great confidence regarding information available (&gt;80%)</p>
<p><b>Significance</b> (The impact on each component is determined by a combination of the above criteria and defined as follows) The significance of impacts shall be assessed <u>with and without mitigations</u>. The significance of identified impacts on components of the affected biophysical or socio-economic environment (and, where relevant, with respect to potential legal requirement/s) shall be described as follows:</p>	<p><b>No change:</b> A potential concern which was found to have no impact when evaluated  <b>Very low:</b> Impacts will be site specific and temporary with no mitigation necessary.  <b>Low:</b> The impacts will have a minor influence on the proposed development and/or environment. These impacts require some thought to adjustment of the project design where achievable, or alternative mitigation measures  <b>Moderate:</b> Impacts will be experienced in the local and surrounding areas for the life span of the development and may result in long term changes. The impact can be lessened or improved by an amendment in the project design or implementation of effective mitigation measures.  <b>High:</b> Impacts have a high magnitude and will be experienced regionally for at least the life span of the development, or will be irreversible. The impacts could have the no-go proposition on portions of the development in spite of any mitigation measures that could be implemented.</p>

**Table 13: The stated assessment and information will be determined for each individual issue or related groups of issues and presented in descriptive format in the following table example or a close replica thereof**

<b>Impact Statement:</b>		
<b>Mitigation:</b>		
<b>Ratings</b>	Duration	
	Extent	
	Intensity	
	Probability of impact	
	Status of Impact (Positive/negative)	
	Degree of confidence	
<b>Significances</b>	Significance <b>without</b> Mitigation	
	Significance <b><i>WITH</i></b> Mitigation	
Indication of the certainty of a mitigation measure considered, achieving the end result to the extent indicated, is given on a scale of 1-5 (1 being totally uncertain and 5 being absolutely certain), taking into consideration uncertainties, assumptions and gaps in knowledge:		
Legal Requirements (Identify and list the specific legislation and permit requirements which are relevant to this development):		

## 9 CONCLUSION AND RECOMMENDATIONS

A scoping exercise is being undertaken to present the proposed activities to the I&APs and to identify environmental issues discussed in this report and concerns raised as a result of the proposed development alternatives to date. The issues and concerns were raised by I&APs, authorities, the project team as well as specialist input, based on baseline studies undertaken.

This pre-application Draft Scoping Report, being undertaken in terms of NEMA, summarises the process undertaken, the alternatives presented, and the issues and concerns raised.

As a result of the above, the need for the following specialist studies, have been identified:

- Biodiversity Assessment
- Freshwater Assessment
- Heritage Impact Assessment
- Socio-economic Impact Assessment
- Visual Impact Assessment
- Agricultural Potential Assessment
- Avifauna Impact Assessment

These specialist studies have been conducted and some have been concluded. The findings of some the studies have already been included in this report, however, the studies will be finalised and the findings included during the EIA phase.

Any further issues raised as a result of the Public Participation Process will be dealt with during the EIA phase. The significance of the impacts associated with the alternatives proposed will be assessed in these specialist studies, as part of the EIA. Once the specialist studies have been completed, they will be summarised in an Environmental Impact Report (EIR), which integrates the findings of the assessment phase of the EIA.

Based on the significance of the issues raised during the ongoing Public Participation Process and Scoping Phase, it is evident that an Environmental Impact Assessment (EIA) is required. ***It is therefore recommended that authorisation for the commencement of an EIA for the proposed development is granted.*** Should the EIA process be authorised, the issues raised in the process to date will be addressed and the specialist studies noted in this report, will be undertaken.

### 9.1 PRELIMINARY RECOMMENDATIONS / CONDITIONS FOR AUTHORISATION

- In cases where there is not a significant impact on agricultural land, a diversification of income sources should be considered by the landowner(s). Through establishing an agreement between the applicant and the landowner(s); landowner(s) will be enabled to share in the profit generated from the facility, thereby offsetting their probable financial loss sustained through the loss of agricultural land (utilised or grazing mainly) over the development area.

## 10 DETAILS AND EXPERTISE OF THE EAP

<b>Author / Compiler</b>	Lian Roos
<b>Qualifications</b>	BSc Hons (App Sci) Water Utilisation (UP) BSc Environmental Science (UP)
<b>Registrations</b>	EAPASA Reg no. 2022/4550 SACNASP Pr. Sci. Nat (151023)
<b>Expertise</b>	<p>Lian Roos has over 6 years of experience as an Environmental Consultant and Assessment Practitioner in environmental monitoring, management and assessment in various industries ranging from mining and industrial to agricultural and renewable. His expertise includes, but are not limited to:</p> <ul style="list-style-type: none"> <li>- Environmental Authorisation applications</li> <li>- Water Use Licence applications</li> <li>- Waste Management Licence applications</li> <li>- Prospecting Right, Mining Permit &amp; Right applications</li> <li>- Integrated Water and Waste Management plans</li> <li>- Rehabilitation, Decommissioning and Mine Closure plans</li> <li>- Environmental Due Diligence &amp; Gap Analyses</li> <li>- Environmental Monitoring &amp; Compliance</li> </ul>

<b>Reviewer / Supervisor</b>	Clinton Geyser
<b>Qualifications</b>	MSc. Geography and Environmental Management (2002) (UJ) BSc. (hons): Geography and Environmental Management (2001) (UJ) BSc. Earth Sciences, Majors in Geology and Geography and Environmental Management (1998 – 2000) (UJ)
<b>Registrations</b>	EAPASA Reg no. 2021/3287
<b>Expertise</b>	<p>Clinton Geyser has over fifteen years' experience in the environmental management field as an Environmental Assessment Practitioner and as an Environmental Control Officer, having worked on a variety of projects in the Western, Eastern and Northern Cape. Previous completed applications include, but not limited to:</p> <ul style="list-style-type: none"> <li>- Civil engineering infrastructure including pipelines, Waste Water Treatment Works, and roads in the Western and Northern Cape.</li> <li>- Solar PV facilities in the Free State and Western Cape</li> <li>- Agricultural developments, including reservoirs and dams, in the Western, Eastern and Northern Cape.</li> <li>- Telecommunications masts in the Western and Eastern Cape</li> <li>- Housing Developments in the Western and Northern Cape.</li> <li>- Resort developments in the Western and Northern Cape.</li> <li>- Cemeteries in the Western Cape</li> <li>- Waste Management Licences in the Western Cape</li> </ul>

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