



MAY 2023

**BASIC ASSESSMENT REPORT FOR THE PROPOSED DEVELOPMENT OF
A 19.8MW SOLAR PV PARK, WITH A BATTERY ENERGY STORAGE
SYSTEM AND ASSOCIATED INFRASTRUCTURE ON PORTION 4 OF THE
FARM RHEEBOKSFONTEIN 346, KOUGA LOCAL MUNICIPALITY,
EASTERN CAPE PROVINCE**

DRAFT BASIC ASSESSMENT REPORT



REFERENCE NO:

DOCUMENT SYNOPSIS

Item	Description
Proposed development and location	Proposed development of a 19.8MW Solar PV Park, and Battery Energy Storage System and associated infrastructure, On Portion 4 of the Farm Rheebofsfontein 346, Kouga Local Municipality, Eastern Cape Province.
Purpose of the study	Basic Assessment Report for the application for Environmental Authorisation for the development of a 19.8MW Solar PV Park, Battery Energy Storage System and associated infrastructure, On Portion 4 of the Farm Rheebofsfontein 346, Kouga Local Municipality, Eastern Cape Province.
1:50 000 Topographic Map	Attached in Appendix C
Coordinates	33°59'50.12"S; 24°47'35.86"E
Municipalities	Kouga Local Municipality
Predominant land use of surrounding area	Farming Area (grazing) Existing wind farm Electrical substations, and powerlines
Applicant	Kouga Local Municipality
Prepared for:	Kouga Local Municipality Theodore Madatt tmadatt@kouga.gov.za
Prepared by:	EnviroSaint (Pty) Ltd 511 Velskoen Road Die Wilgers, Pretoria, 0184 Cell: 072 175 2417 E-mail: environment@envirosaint.co.za / tnaicker@envirosaint.co.za
Authors	Moses Kgopana
Date of Report	May 2023

TITLE AND APPROVAL PAGE

Author:

Name	Title	Signature	Date
Moses Kgopana	Environmental Assessment Practitioner		10 May 2023
Tashriq Naicker	Project Manager		10 May 2023

ACKNOWLEDGEMENTS

The authors acknowledges Kouga Local Municipality and CVW Mechanical and Electrical Engineers for their assistance with project information, layouts and the associated project background Information documents (BID) as well as responding to technical queries related to the project.

EAP UNDERTAKING

THE INDEPENDENT ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

I ...Moses Kgopana....., on behalf of EnviroSaint (Pty) Ltd, as the appointed independent environmental practitioner ("EAP") hereby declare that I:

- act/ed as the independent EAP in this application;
- regard the information contained in this report to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2014 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2014 and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the application was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- have ensured that the comments of all interested and affected parties were considered, recorded and submitted to the competent authority in respect of the application;
- have kept a register of all interested and affected parties that participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favorable to the applicant or not; and
- am aware that a false declaration is an offence in terms of the EIA Regulations.



Signature of the Environmental Assessment Practitioner:

Name of company: EnviroSaint (Pty) Ltd

Date: 10/05/2023

EXECUTIVE SUMMARY

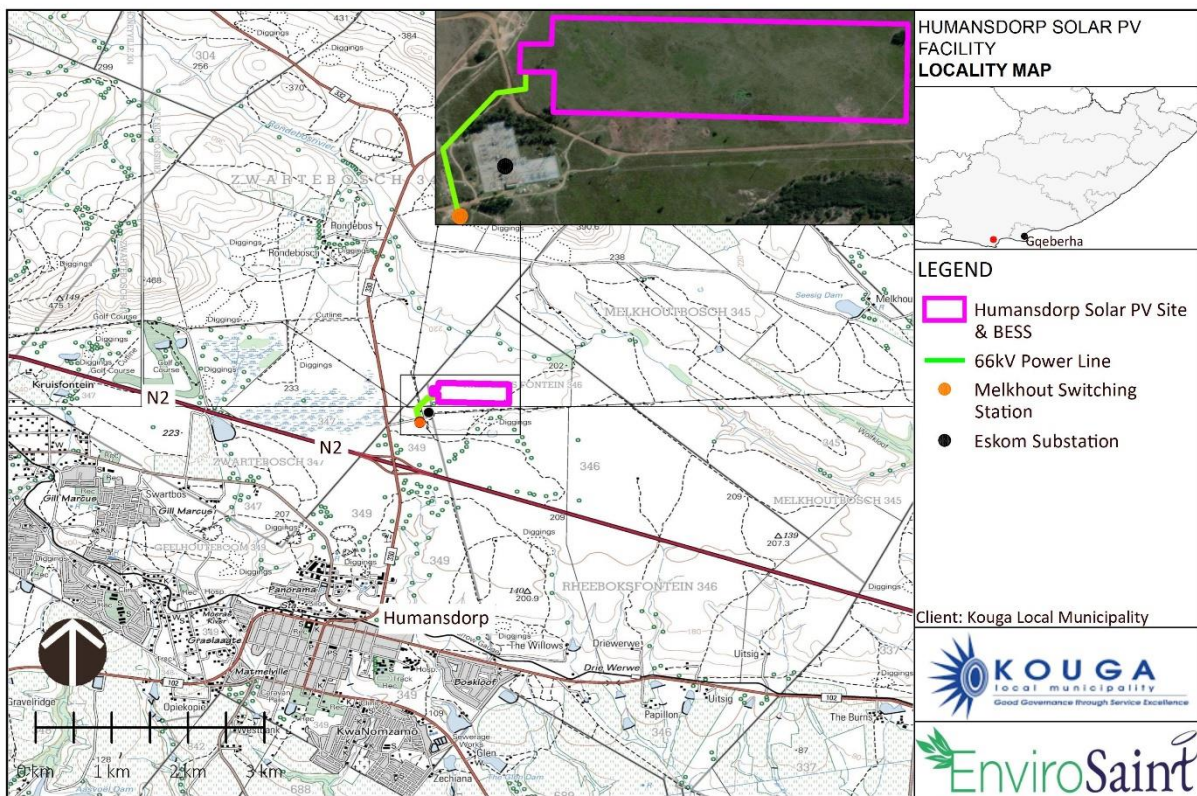
EnviroSaint (Pty) Ltd (EnviroSaint) has been appointed by CVW Mechanical and Electrical (hereafter referred to as "CVW") on behalf of Kouga Local Municipality (KLM) (the applicant) to undertake the required Environmental Authorisation (EA) application for the proposed development of a 19.8MW Solar PV Park, with a Battery Energy Storage System (BESS) and associated infrastructure On Portion 4 of the Farm Rheebofontein 346, Kouga Local Municipality, Eastern Cape Province.

The project is the proposed construction and establishment of a 19.8MW Solar PV Park with a Battery Energy Storage System (BESS) near Humansdorp in the Kouga Local Municipality, Sarah Baartman District Municipality, Eastern Cape Province. The site is approximately 19,8ha and will contain the solar PV panels, BESS, a 66/22kV Substation and a short 66kV Power Line (+/- 500m) connection to the adjacent Melkhout Switching Station.

The study site is located approximately 3km north of the town centre of Humansdorp in the Kouga Municipality, Eastern Cape Province. The Site is north of the N2 National Highway and east of the R330 Provincial Road. The site is situated immediately northeast of the existing Eskom Substation and small Melkhout Switching Station and west of an existing Wind farm.

The Integrated Resource Plan (IRP) 2010-2030 is South Africa's guide for upcoming electricity planning in the nation. The IRP 2010-2030 was announced in March 2011 with the intention of being a "living plan" that would be modified frequently to stay in line with South Africa's electricity demand as well as technological advancements and their impact on energy pricing. The IRP 2010-2030's goals for a dependable power supply, as well as for social and environmental obligations and economic policies, are in line with those of the government.

The Department of Mineral Resources and Energy (DMRE) set a target electricity supply of 17.8 GW from renewable energy sources by 2030 as a result, which was included in the IRP. Solar, wind, biomass, and small-scale hydroelectric power generation would be the main sources of this objective renewable energy capacity (with the main sources being wind and solar energy supply). The 2030 aim also guarantees that 42% of the nation's anticipated total electricity generation capacity would be supplied by renewable energy sources. The DMRE's goal and IRP 2010-2030 strategy to increase the capacity of South Africa's renewable energy electricity generation are being addressed through this application. Furthermore, the KLM wishes to reduce the burden that load shedding is placing on its infrastructure and constituents.



EnviroSaint's scope of work includes undertaking a Basic Assessment (BA) Process including a Public Participation Process (PPP) in applying for the relevant EA in line with the requirements of the EIA Regulations of 2014 (as amended). The application will be submitted to the competent authority, namely the Eastern Cape Department Economic Development, Environmental Affairs & Tourism (ECDEDEAT).

The development will trigger listed activities in the EIA Regulations of 2014 (as amended). As such, an Environmental Authorisation will need to be applied for by way of a Basic Assessment (BA) Process and associated Public Participation Process (PPP).

LISTED ACTIVITIES

In terms of NEMA EIA Regulations, 2014 as published in Government Notice No. 326 as amended, the proposed development triggers the following activities which requires an EA via a Basic Assessment Process:

Listing Notice 1:

Listed Activity 1: The development and related operation of facilities or infrastructure for the generation of electricity from a -renewable resource where—

- (i) the electricity output is more than 10 megawatts but less than 20 megawatts; or
- (ii) the output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare.

The proposed PV Park will have an electricity generation capacity of 19.8MW with a development footprint of 19,8ha. Given that the electricity generation is more than 10MW, this listed activity will be triggered.

Listed activity 11: The development of facilities or infrastructure for the transmission and distribution of electricity—

(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or

(ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more;

excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is —

(a) temporarily required to allow for maintenance of existing infrastructure;

(b) 2 kilometres or shorter in length;

(c) within an existing transmission line servitude; and

(d) will be removed within 18 months of the commencement of development.

The powerline to be constructed will be 66kV and 500m in length. This overhead powerline will connect the proposed Solar PV Park to the existing Melkhout switching station and as such will trigger this listed activity.

Listed Activity 27: The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—

(i) The undertaking of a linear activity; or

(ii) Maintenance purposes undertaken in accordance with a maintenance management plan.

The development footprint will require clearance of vegetation in order to accommodate the proposed PV Park. An area more than 1 hectares, but less than 20 hectares will be cleared for the development. Given that the area to be cleared is more than a hectare in extent, this listed activity will be triggered.

Listed Activity 28: Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:

(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or

(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;

excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.

The site is currently used as grazing land for cattle, and is 19,8ha in extent, as such this activity will be triggered.

Listing Notice 3:

Listed Activity 4 (a)(i)(ee): The development of a road wider than 4m with a reserve less than 13.5 metres:

- a. Eastern Cape
 - i. Outside Urban Areas:
 - (ee) Critical Biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.

According to the Eastern Cape Biodiversity Conservation Plan (2019), the study site is situated within a demarcated Critical Biodiversity Area (CBA 1), and the access road is approximately 6.8m wide with no reserve, therefore this listed activity will be triggered.

Listed Activity 12 (a)(ii): The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan:

- a. Eastern Cape
 - ii. Within Critical Biodiversity areas identified in bioregional plans.

According to the Eastern Cape Biodiversity Conservation Plan (2019), the study site is situated within a demarcated Critical Biodiversity Area (CBA 1), and there will be vegetation that will be cleared of approximately 19,8ha, therefore this listed activity will be triggered.

FINDINGS AND CONCLUSIONS

As shown within the Basic Assessment Report, the proposed project will have minimal environmental impacts which should be manageable through good design practices and following all environmental recommendations made in the sections below and in the EMPr. Although all foreseeable actions and potential mitigations or management actions are contained in the EMPr, the document should be considered as a day-to-day management document which can be adjusted as and when required. Major changes should however be communicated to the authorities. The current EMPr thus sets out the environmental standards that are required to minimise the negative impacts and maximize the positive benefits of the local community. An EMPr is a “live document” and its continuous review and correct management will definitely result to the successful construction and operation of the proposed development. Based on the impact assessment conducted, it is the EAP’s opinion that the proposed development be authorised with the inclusion of the following conditions:

- The EMPr is a legally binding document and must be adhered too at all times.
- The monitoring of the construction site must be carried out by a qualified Environmental Compliance Officer (ECO) with proven expertise in the field so as to ensure compliance to the Environmental Management Programme (EMPr).
- All mitigation measures listed in the BAR as well as the EMPr must be implemented and adhered to.

TERMS AND DEFINITIONS

BA	Basic Assessment
BAR	Basic Assessment Report
CBA	Critical Biodiversity Areas
CMA	Catchment Management Agencies
CPV	Concentrated Photovoltaic
Ha	Hectare
DEA	Department of Environmental Affairs
DWS	Department Water and Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIS	Ecological Importance & Sensitivity
ESA	Ecological Support Area
IAP's	Interested and Affected Parties
PDA	Primary Drainage Area
PV	Photovoltaic
PPP	Public Participation Process
QDA	Quaternary Drainage Area
SAHRA	South African Heritage Resource Agency
EnviroSaint	EnviroSaint (Pty) Ltd
WMA	Water Management Areas
EA	Water Management License
SACNASP	South African Council for Natural Scientific Professions
SANBI	South African National Biodiversity Institute
SWSA	Strategic Water areas of South Africa

STRUCTURE OF THE REPORT

The legislated content requirements for BARs are contained in Appendix 1 of the EIA Regulations of 2014 (as amended) (GNR 326). For ease of reference, the table below cross references the content requirements and related section number in this report.

NO.	REQUIREMENTS	APPLICABLE SECTION IN THIS REPORT
A	Details of the EAP who prepared the report, including the expertise of the EAP, including curriculum vitae.	Section 1.3 & Appendix A
B (i)	The location of the activity, including the 21 digit Surveyor General code of each cadastral land parcel	Section 1.6
(ii)	The physical address and farm name of the activity	Section 1.6
(iii)	The coordinates of the boundary of the property or properties	Section 1.6
c	A plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale; or, if it is on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Appendix C
d	A description of the scope of the proposed activity, including a description of the activities to be undertaken and associated structures and infrastructure and including all listed and specified activities triggered and being applied for as well as the	Section 1.1
e	A description of the policy and legislative context within which the development is proposed including an identification and description of compliance to all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report	Section 10
f	A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location	Section 9
g	A motivation for the preferred site, activity and technology alternative	Section 1.1
H (i)	A full description of the process followed to reach the proposed preferred alternative within the site, including details of all the alternatives considered	Section 1.1
(ii)	Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs	Section C
(iii)	Summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them	Section C
(iv)	The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section D
(v)	The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including	Section D

	the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;	
(vi)	The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives	Section D
(vii)	Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects	Section D
(viii)	The possible mitigation measures that could be applied and level of residual risk	Section D
(ix)	A full description of the process followed to reach the proposed preferred alternative within the site, including the outcome of the site selection matrix	Section D
(x) (xi)	A full description of the process followed to reach the proposed preferred alternative within the site, including if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such, as well as a concluding statement indicating the preferred alternatives, including preferred location of the activity	Section D
l(i)	A full description of the process and methodology used to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including a description of all environmental issues and risks that were identified during the environmental impact assessment process;	Section D
j	An assessment of each identified potentially significant impact and risk, including cumulative impacts, the nature, significance, consequences, extent, duration, probability of the impact and risk, as well as the degree to which the impact and risk may cause irreplaceable loss of resources and the degree to which the impact and risk can be avoided, managed or mitigated	Section D
k	Where applicable, a summary of the findings and impact management measures identified in any specialist report	Section D
l	An environmental impact statement which contains a summary of the key findings of the environmental impact assessment and a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. It must also contain a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	Section D
m	Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr.	Section D
n	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation	Section E
o	A description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed	Section 1.4
p	A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation	Section E

q	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised.	N/A
r	An undertaking under oath or affirmation by the EAP in relation to the correctness of the information provided in the reports, the inclusion of comments and inputs from stakeholders and I&APs, the inclusion of inputs and recommendations from the specialist reports where relevant and any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties	Page ii
s	Where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A
t	Any specific information that may be required by the competent authority	TBC
u	Any other matters required in terms of section 24(4)(a) and (b) of the Act.	TBC



BASIC ASSESSMENT REPORT

(For official use only)

File Reference Number:

NEAS Number:

Date Received:

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

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 as amended and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for. This report is current as of **1 OCTOBER 2022**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable or **black out** the boxes that are not applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority **unless indicated otherwise by the Department**.
7. No faxed or e-mailed reports will be accepted **unless indicated otherwise by the Department**.
8. The report must be compiled by an independent environmental assessment practitioner (EAP). The EAP must satisfy conditions 11 below.

9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

11.1 The Environmental Assessment Practitioner (EAP) must be registered in terms of S24H Regulations with the Registration Authority EAPASA as from 8 August 2022.

11.2. S24H (14) states that “only a person registered as an Environmental Assessment practitioner may perform tasks in connection with an application for an environmental authorisation contemplated in

(a) Chapter 5 of the Act read with the Environmental Impact Assessment Regulations.

(b) Section 24G of the Act

(c) Chapter 5 of the National Environmental Management Waste Act 2008 (Act No 59 of 2008) read with the Environmental Impact Assessment Regulations

11.3. Tasks in regulation 14 may only be conducted by an EAP that is registered

11.4. Regulations 20 of S24H indicates the offences and penalties as indicated below:

“20. *Offences and penalties*

(1) *A person is guilty of an offence if that person-*

(a) *contravenes regulation 14 of the Regulations; or*

(b) *pretends to be a registered environmental assessment practitioner or registered candidate environmental assessment practitioner.*

(2) *A person convicted of an offence in terms of subregulation (1) is liable to the penalties contemplated in section 49B(3) of the Act.”*

Section 49B(3) of the Act states:

“A person convicted of an offence in terms of section 49A(1)(h), (l), (m), (n), (o) or (p) is liable to a fine or to imprisonment for a period not exceeding one year, or to both a fine and such imprisonment.”

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES	
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If YES, please complete form XX for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail

1.1. Project Description

EnviroSaint (Pty) Ltd (EnviroSaint) has been appointed by CVW Mechanical and Electrical Consulting Engineers (Pty) Ltd (hereafter referred to as "CVW") on behalf of Kouga Local Municipality (KLM) (the applicant) to undertake the required Environmental Authorisation (EA) application for the proposed development of a 19.8MW Solar PV Park, with a Battery Energy Storage System (BESS) and associated infrastructure On Portion 4 of the Farm Rheebofsfontein 346, Kouga Local Municipality, Eastern Cape Province.

The project is the proposed construction and establishment of a 19.8MW Solar PV farm and Battery Energy Storage System (BESS) near Humansdorp in the Kouga Local Municipality of the Sarah Baartman District Municipality, Eastern Cape Province. The site is approximately 19,8 ha and will contain the solar PV panels, BESS, a 66/22kV Substation and a short (500m) 66kV Power Line connection to the adjacent Melkhout Switching Station. The switching station feeds directly into the KLM grid.

EnviroSaint's scope of work includes undertaking a Basic Assessment (BA) Process including a Public Participation Process (PPP) in applying for the relevant EA in line with the requirements of the EIA Regulations of 2014 (as amended). The application will be submitted to the competent authority, namely the Eastern Cape Department Economic Development, Environmental Affairs & Tourism (ECDEDEAT).

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The Department of Mineral Resources and Energy (DMRE) set a target electricity supply of 17.8 GW from renewable energy sources by 2030 as a result, which was included in the IRP. Solar, wind, biomass, and small-scale hydroelectric power generation would be the main sources of this objective renewable energy capacity (with the main sources being wind and solar energy supply). The 2030 aim also guarantees that 42% of the nation's anticipated total electricity generation capacity would be supplied by renewable energy sources. The DMRE's goal and IRP 2010–2030 strategy to increase the capacity of South Africa's renewable energy electricity generation are being addressed through this application. Furthermore, the KLM wishes to reduce the burden that load shedding is placing on its infrastructure and constituents.

In terms of NEMA EIA Regulations, 2014 as published in Government Notice No. 326 as amended, the proposed development triggers the following activities which requires an EA via a Basic Assessment Process:

Listing Notice 1:

Listed Activity 1: The development and related operation of facilities or infrastructure for the generation of electricity from a -renewable resource where—

(i) the electricity output is more than 10 megawatts but less than 20 megawatts; or

(ii) the output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare.

The proposed PV Park will have an electricity generation capacity of 19.8MW with a development footprint of 19,8ha. Given that the electricity generation is more than 10MW, this listed activity will be triggered.

Listed activity 11: The development of facilities or infrastructure for the transmission and distribution of electricity—

(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or

(ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more;

excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is —

(a) temporarily required to allow for maintenance of existing infrastructure;

(b) 2 kilometres or shorter in length;

(c) within an existing transmission line servitude; and

(d) will be removed within 18 months of the commencement of development.

The powerline to be constructed will be 66kV and 500m in length. This overhead powerline will connect the proposed Solar PV Park to the existing Melkhout switching station and as such will trigger this listed activity.

Listed Activity 27: The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—

- (i) The undertaking of a linear activity; or
- (ii) Maintenance purposes undertaken in accordance with a maintenance management plan.**

The development footprint will require clearance of vegetation in order to accommodate the proposed PV Park. An area more than 1 hectares, but less than 20 hectares will be cleared for the development. Given that the area to be cleared is more than a hectare in extent, this listed activity will be triggered.

Listed Activity 28: Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:

- (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or
- (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;**

excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.

The site is currently used as grazing land for cattle, and is 19,8ha in extent, as such this activity will be triggered.

Listing Notice 3:

Listed Activity 4 (a)(i)(ee): The development of a road wider than 4m with a reserve less than 13.5 metres:

- a. Eastern Cape
 - i. Outside Urban Areas:
 - (ee) Critical Biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.

According to the Eastern Cape Biodiversity Conservation Plan (2019), the study site is situated within a demarcated Critical Biodiversity Area (CBA 1), and the access road is approximately 6.8m wide with no reserve, therefore this listed activity will be triggered.

Listed Activity 12 (a)(ii): The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan:

- a. Eastern Cape
 - ii. Within Critical Biodiversity areas identified in bioregional plans.

According to the Eastern Cape Biodiversity Conservation Plan (2019), the study site is situated within a demarcated Critical Biodiversity Area (CBA 1), and there will be vegetation that will be cleared of approximately 19,8ha, therefore this listed activity will be triggered.

1.1.1. Project components

Key technical information applicable to this study is listed in Table 1 below:

Table 1: Technical information

Item	Applicable technical information
Power plant technology	Ground mount solar PV plant (~19,8 ha)
Solar modules	Crystalline-silicon PV technology
Structure /mounting	The PV solar modules will be installed on tracking tables which, in turn are mounted on steel supports and arranged on the site along a north-south axis. The panels rotate through the day, facing east in the morning and rotating to west in the afternoon. This is a typical arrangement for ground-mounted solar PV installations.
Inverter stations	Blocks of the above-mentioned panels will be connected to inverter stations (containerised), and a direct current (DC) combining box will be located at each of the inverter stations which will be a 2.6 m high cube container mounted on a concrete stand. Refer to Figure 4.
Battery Energy Storage System (BESS)	Lithium-ion batteries are stored in shipping containers, which are closely spaced on the side of the solar panel arrays (see Figure 3).
Access and internal roads	The existing dirt road from the R330 to the adjacent Eskom substation will be used to access the proposed facility. The access roads will be 6.8m wide gravel roads.
Ancillary infrastructure:	
– Permanent guard house	Approximately 3m high (will not exceed 1 storey) close to the existing Eskom substation.
– New fence	Around the perimeter of the site.
– Internal roads	3.4m wide, will be constructed to give access to the solar panels for performing maintenance.
– Civil services	Water and power supply. (Municipal power and water will be trucked in as needed, portable chemical toilet for guard house).

Project life cycle

The PV Facility is not currently planned to be decommissioned. However, the typical effective life of solar panels is 20 to 25 years, after which they may be replaced with new panels to extend the life of the facility.



Figure 1: Single access tracking structure tables



Figure 2: A view of installed single access tracking structures



Figure 3 Appearance of a typical BESS¹ (left)



Figure 4: Typical inverter container

¹ <https://www.energy.gov/eere/solar/solar-integration-solar-energy-and-storage-basics>

From a visual perspective, single axis tracking systems, with maximum heights less than 5 m above natural ground level, result in less visual impacts than the taller dual axis tracking systems, which can reach heights of up to 8m.

1.1.2. Alternatives

1.1.2.1. Site alternatives

Numerous sites were considered during the pre-feasibility study phase of the project. However, only the current site was deemed suitable for the proposed project. The current site is the preferred site and the only feasible site alternative to be investigated in the Basic Assessment, as it borders the electrical connection point into the local grid (Melkhout Switching Station), is adjacent to a renewable energy facility (wind farm), and the land is owned by the Municipality.

1.1.2.2. Land use alternative

No alternative land use and activity alternatives have been considered in this report.

1.1.2.3. Technology alternatives

Two mounting options were considered during the pre-feasibility of this project, namely fixed structure and the tracking system. The tracking system is the proposed and preferred technology as it will give greater return on investment and provide greater efficiency (i.e., results in higher electrical output), particularly during the early morning and late afternoon when the sun is low on the horizon. As such the fixed structure is no longer considered feasible and will not be discussed any further.

1.1.2.4. Layout alternatives

The project will use an existing dirt access road from the R330 to the adjacent Eskom substation. No other access alternatives with lesser environmental or visual impact need to be considered, since the access road already exists.

1.1.3. Project phase activities

The table below is a summary of typical activities associated with the different phases of the proposed project.

Table 2: Anticipated project phase activities

PROJECT PHASE	SUMMARY OF ASSOCIATED ACTIVITIES
Construction phase Estimated time duration: 1-2 years	<ul style="list-style-type: none"> • Clearing and grubbing. (No broadscale topographic levelling is planned); • Construction of internal access routes; • Preparation and use of material and equipment laydown areas; • Placement of solar collectors; • Construction of the electrical switching station; • Construction of the BESS; and

	<ul style="list-style-type: none"> Disturbed areas, other than the internal roads and areas used for maintenance, will be revegetated after construction.
Operational phase Estimated time duration: 20-30 years	<ul style="list-style-type: none"> Operation of the solar facility to produce power; Regular monitoring and maintenance activities to ensure safe and consistent operation; Maintenance of access roads; and Vegetation maintenance within the solar collector field.
Decommissioning phase	<ul style="list-style-type: none"> The PV Facility will not be decommissioned.

1.2. Purpose of the Basic Assessment Report

The main purpose of this report is to:

- Determine the policy and legislative context within which the activity is located and how the activity complies with and responds to said policy and legislative context;
- Identify feasible alternatives considered, including the activity, site location, and layout alternatives;
- State the need and desirability of the proposed activity;
- Provide a description of the receiving environment that would be affected by the proposed activity;
- Identify the preferred site, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of the identified preferred alternatives focusing on the geographical, physical, biological, social, economic and cultural aspects of the environment;
- Determine the significance, duration and probability of the impacts occurring to inform the technology and micro siting of the activity;
- Identify the most compatible micro-siting for the activity;
- Identify, assess and rank the significant impacts and risks the activity will impose on the preferred site through the lifetime of the activity;
- Identify suitable measures to avoid, reverse, mitigate or manage identified impacts;
- Identify residual risks that need to be managed and monitored;
- Describe the public participation process that was undertaken; and
- Make recommendations for decision-making.

1.3. Details of EAP and Applicant

1.3.1. Details of the Environmental Consulting Team

EnviroSaint (Pty) Ltd (EnviroSaint) is an independent environmental consultancy appointed by CVW on behalf of Kouga Local Municipality (the applicant) to undertake the required Basic Assessment Process as part of the application for an EA for the proposed project.

EnviroSaint does not have any financial or other interests in the undertaking of the proposed activity, other than remuneration for work performed in terms of the National Environmental Management Act, 1998 (Act

107 of 1998) (NEMA), the Environmental Impact Assessment Regulations, of 2014, as amended, and any specific environmental management Act; and does not have any vested interest in the proposed activity.

The contact details and experience of the Environmental Assessment Practitioner (EAP) undertaking the application are provided in **Table 3 below** and proof of qualification is attached in **Appendix A**.

Table 3: EAP Details

Environmental Assessment Practitioner:	EnviroSaint (Pty) Ltd
Contact Person:	Moses Kgopana
Address:	511 Velskoen Road, Die Wilgers Pretoria, 0184
Telephone	076 328 1558
E-mail	environment@envirosaint.co.za
Website	www.envirosaint.co.za
Expertise	<p>Moses Kgopana is an Environmental Manager with a four year bachelor's degree in Environmental Management with over 13 years experience. Mr Kgopana is a registered Professional Natural Scientist with the South African Council for Natural Scientific Professions (SACNASP). Mr Kgopana is also registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA) (Registration number 2022/4555).</p> <p>Mr Kgopana has experience in various aspects of Environmental Management and this includes the following:</p> <ul style="list-style-type: none"> Undertaking and writing Environmental Impact Assessment; ❖ Writing Environmental Management Programmes; ❖ Undertaking and writing Waste Management Report; ❖ Waste License; ❖ Sensitivity analysis, planning and Mapping; ❖ Conducting Public Participation Process; ❖ Conducting environmental awareness training; and ❖ Conducting legal compliance audits.

1.3.2. Details of Applicant/Developer

The contact details of the applicant are provided in **Table 4** below.

Table 4: Details of Applicant

Name of Applicant:	Kouga Local Municipality
Contact Person	Theodore Madatt
Tel No:	082 457 5030
Email Address:	tmadatt@kouga.gov.za
Postal Address:	P.O. Box 21, Jeffreys Bay, 6330

1.4. Assumptions and Gaps in Knowledge

The following assumptions and potential gaps in knowledge apply:

- All information provided by the applicant to the EAP was correct and valid at the time it was provided.
- The EAP does not accept any responsibility in the event that additional information comes to light at a later stage of the process.
- All data from unpublished research is valid and accurate at the time this report was written.
- The scope of this investigation is limited to assessing the potential environmental impacts associated with the proposed development only.

It should be noted that findings, recommendations and conclusions provided in this report are based on the author's best scientific and professional knowledge and experience. No part of this report may be amended or extended without prior written consent of the author. Any recommendations, statements or conclusions drawn from or based on this report must clearly cite or refer to this report. Whenever such recommendations, statements or conclusions form part of the main report to current investigation, this report must be included in its entirety.

1.5. Project Location

The study site is located approximately 3km north of the town centre of Humansdorp in the Kouga Municipality, Eastern Cape Province. The Site is north of the N2 National Highway and east of the R330 Provincial Road. The site is situated immediately northeast of the existing Eskom Substation and small Melkhout Switching Station. The development footprint will be approximately 19,8ha in extent (including the Solar PV Park and associated BESS). The proposed connection 66kv power line will be 500m long. Refer to Figure 1 below as well as **Appendix C**.

1.6. Property Description

The properties that will be affected by the proposed project are reflected in Table 5 below.

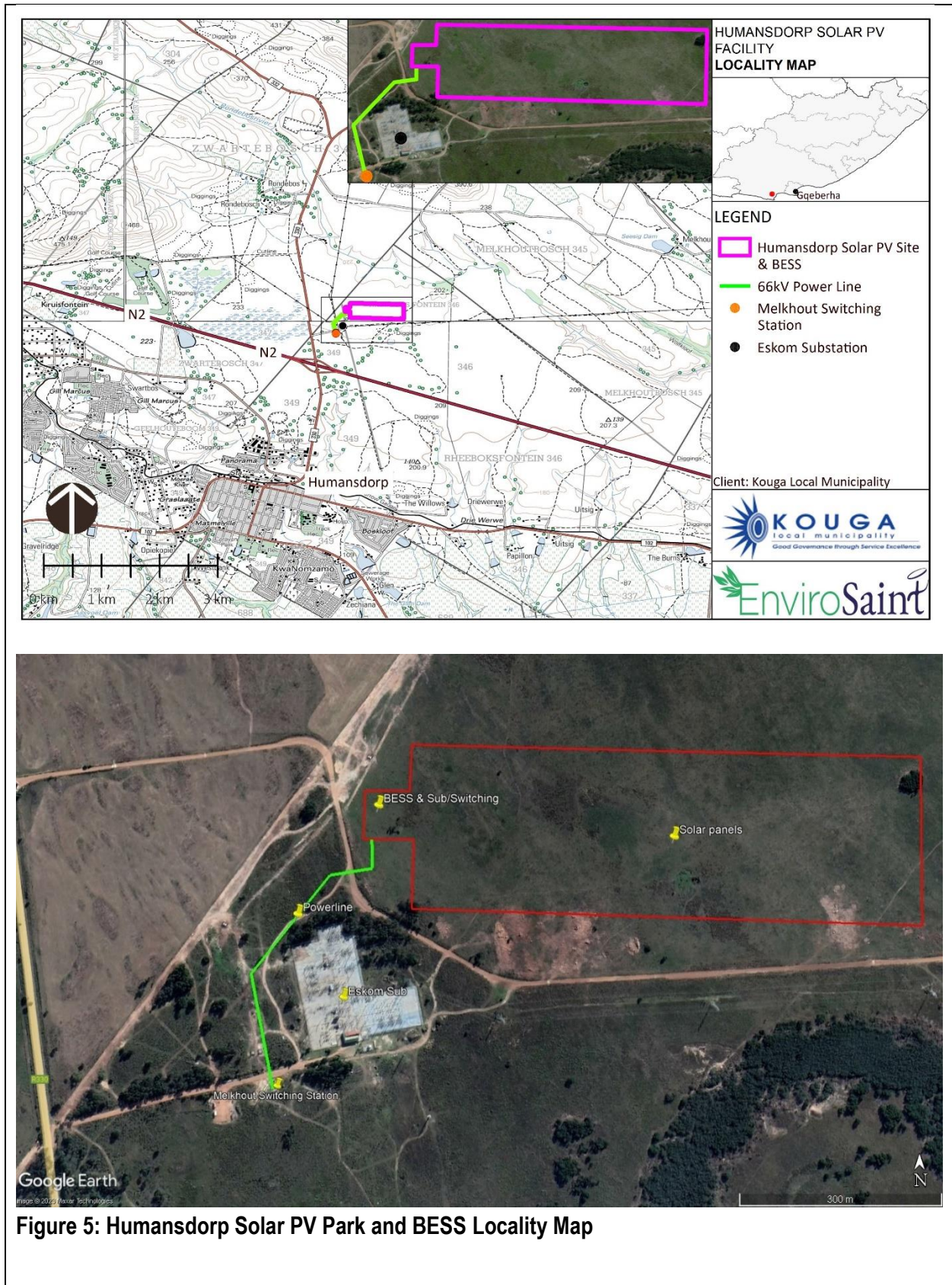
Table 5: Properties associated with the project

Farm Name	Surveyor-General Cadastral Code No.	Footprint	Coordinates
Portion 4 of the Farm Rheebofsfontein 346	C03400000000034600004	19,8ha	33°59'50.12"S; 24°47'35.86"E
Remaining Extent of Erf 499 Humansdorp	C03400050000049900000	500m (linear for the 66kV powerline)	Start: 33°59'54.41"S 24°47'3.48"E End: 34° 0'6.59"S 24°46'57.91"E

Table 6: Coordinates for the Study Area

Position	Coordinates
Solar PV Park study area - Property boundary corners	
Corner 1	33°59'50.12"S; 24°47'35.86"E
Corner 2	33°59'49.96"S; 24°47'5.79"E
Corner 3	33°59'52.02"S; 24°47'5.69"E
Corner 4	33°59'52.02"S; 24°47'4.09"E
Corner 5	33°59'54.20"S; 24°47'4.09"E
Corner 6	33°59'54.46"S; 24°47'5.92"E
Corner 7	33°59'57.76"S; 24°47'5.79"E
Corner 8	33°59'58.54"S; 24°47'35.64"E
66kV Powerline	
Starting Point	33°59'53.10"S; 24°47'4.11"E
Turn 1	33°59'55.74"S; 24°47'3.48"E
Turn 2	33°59'56.15"S; 24°47'0.99"E
Turn 3	34° 0'0.82"S; 24°46'56.51"E
End Point	34° 0'6.59"S; 24°46'57.91"E

Photographs of the site and the surroundings are attached as **Appendix B** of this report. The photographs capture relevant features on site.



1.7. Receiving Environment

1.7.1. Climate

The study site is situated within the medium rainfall zone of 401mm – 600mm per annum (Figure 6) and in the Temperate Coastal Climatic Zone of South Africa (Figure 7). The study site is within a transitional area between the summer and winter rainfall regions of South Africa and tends to receive rainfall that is spaced evenly throughout the year with slight peaks in March and October–November (Mucina & Rutherford, 2010).

The Climate within the Kouga Local Municipality area differs between the three main geographical features, i.e. Coastal Region, Humansdorp and the Gamtoos River Valley. The area is classified as subtropical and is situated in an intermediate zone between the summer and winter rainfall zones of the country, with annual precipitation between 400 and 650mm along the coast and in the Humansdorp area. Climatic conditions along the coast and Humansdorp inland areas are moderate. Temperatures along the coast vary from an average maximum of 19.8°C to average minimum of 14.5°C. The prevailing wind direction is generally westerly to south-westerly with equally dominantly easterly winds during the summer months. Hot, dry berg winds from the interior occur towards the end of winter. Light frost might occur during winter in high-lying areas (Kouga Spatial Framework, 2020).

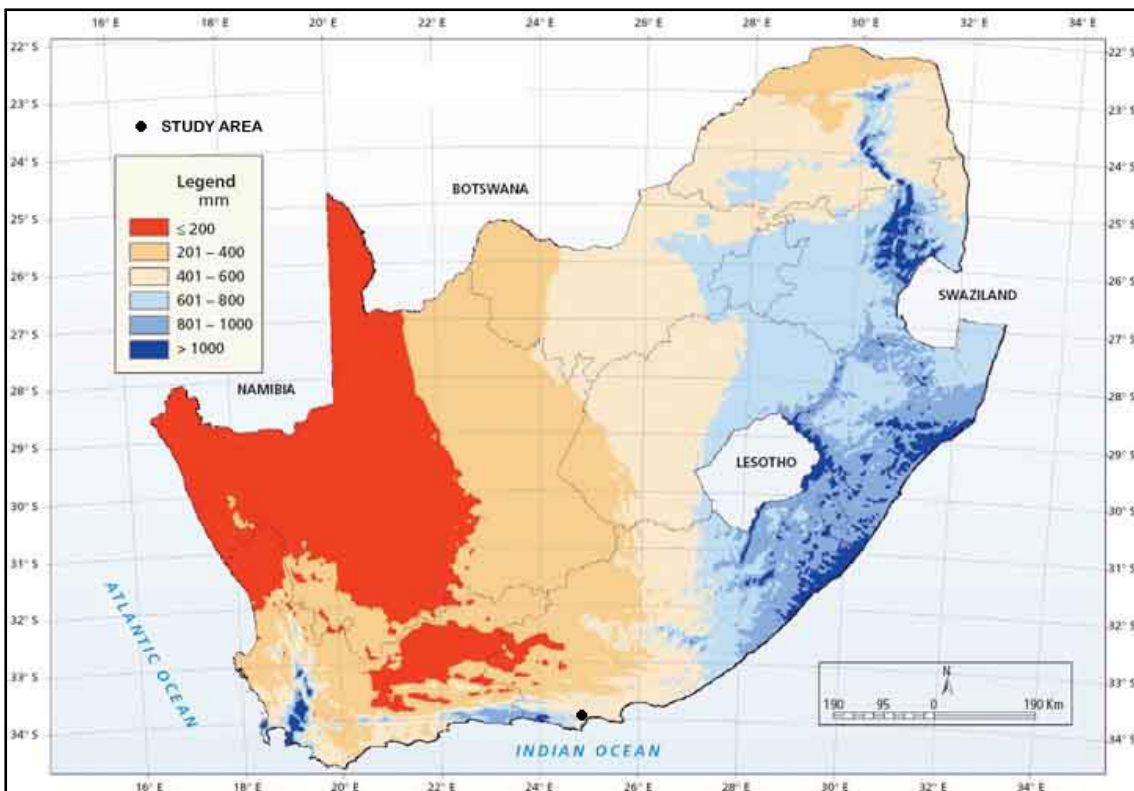


Figure 6: Rainfall Regions of South Africa

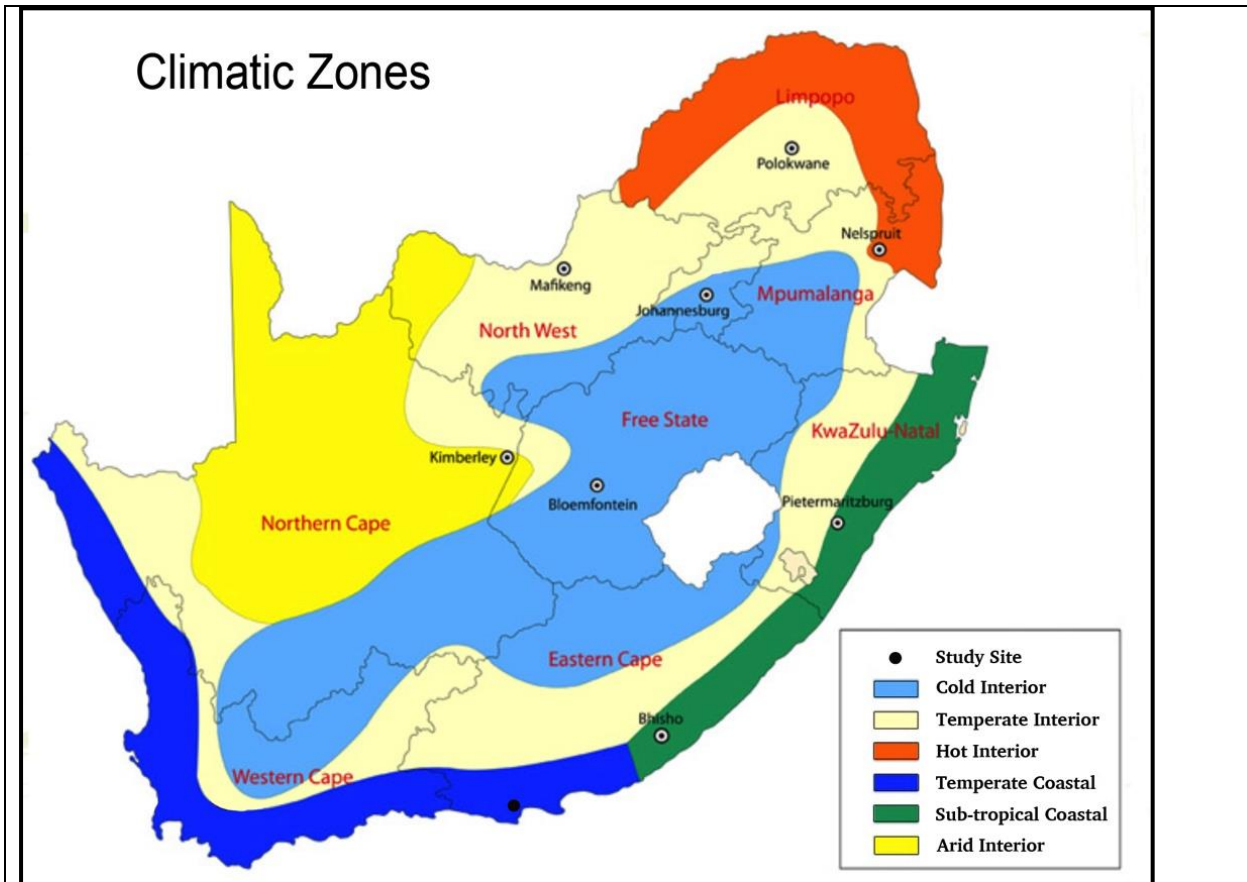


Figure 7: Climatic Regions of South Africa

1.7.2. Topography

The topography of the study site is a very flat open plain. The average height above sea level across the study site is 220m, with a maximum and minimum elevation of approximately 221m and 218m, respectively. The average gradient (slope) is less than 2% across the study area. The slight natural slope is to the north towards the river and to the south.

1.7.3. Geology and Soils

Acidic lithosol soils derived from sandstones of the Table Mountain Group as well as quartzitic sandstones of the Witteberg Group (Nardouw Subgroup). Glenrosa and Mispah forms prominent. Land types mainly Ib and Fa (Mucina & Rutherford, 2010) (Figure 8).

Short descriptions of the prominent landtypes of the study area are shown below (Table 7).

Table 7: Description of land types found in the region

Land Type	Description
Fa	Glenrosa and/or Mispah forms (other soils may occur). Lime rare or absent in the entire landscape. Generally shallow soils consisting of a topsoil directly underlain by weathered rock (Glenrosa form) or hard rock (Mispah form), sometimes with surface

	rock and steep slopes. Found in wetter areas or areas with acidic parent materials, where little lime exists.
1b	Miscellaneous land classes (Rock areas with miscellaneous soils). Areas where 60-80% of the surface is occupied by exposed rock and stones/boulders and the slopes are usually steep. The rest of the area comprises mostly shallow soils, directly underlain by hard or weathered rock.

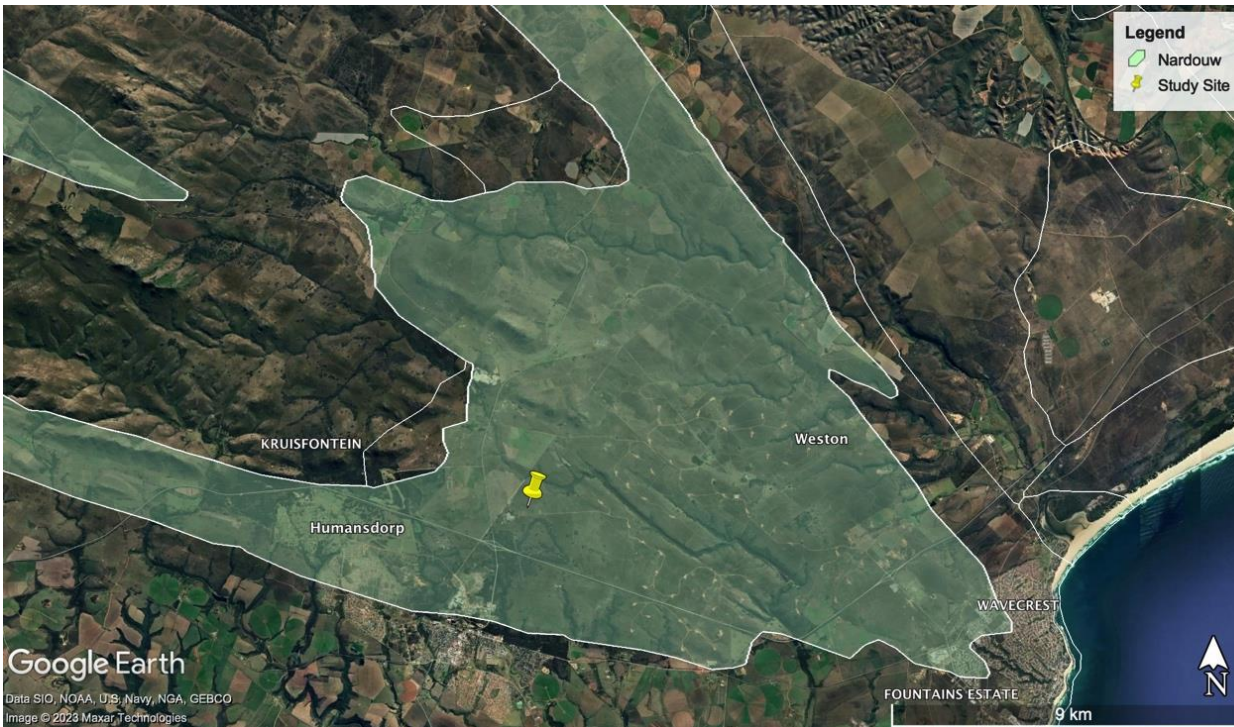


Figure 8: Basic geology of the region highlighting the Nardouw Sub-Group

1.7.4. Current Land Use

The current land use of the study site is open, degraded farmland that were previously regularly ploughed and cultivated. Presently the site is used for grazing of cattle and other livestock. The agricultural lands to the south of Humansdorp and the west of Jeffrey’s Bay are under pressure from human settlement development (KM Spatial Framework, 2020). The study site is, however, situated to the north of Humansdorp, on the rockier, medium elevation region and not in the high potential and commercially active agricultural lands mentioned above.

Dairy and stock farming is the main land use type in the surrounding region. The Gamtoos River floodplain is under intensive irrigated cultivation. Settlements such as Hankey and Humansdorp have developed as service centres for the agricultural industry. The Kouga Local Municipality has been the forerunner for the establishment of renewable energy projects, with specific reference to wind farms. Various projects are under construction or still subject to planning and bid process in terms of the Renewable Energy

Independent Power Producer Programme (REIPPP). These projects currently contribute significantly to the economy in the province and to renewable energy provision towards the national grid (KM Spatial Framework, 2020). Already established wind farms include the Jeffrey’s Bay Wind Farm area immediately east of the study site.

1.7.5. Vegetation

1.7.5.1. General

The study site is situated in the Fynbos Biome of South Africa and in the Eastern Fynbos – Renosterveld Bioregion. The site is within the original extent of the veldtype known as **Kouga Grassy Sandstone Fynbos** (Figure 9). The veldtype is not a threatened veldtype / ecosystem and has a status of ‘Least Concern’ (Skowno, 2019).

Kouga Grassy Sandstone Fynbos is characterised by low shrubland with sparse, emergent tall shrubs and dominated by grasses in the undergrowth, or grassland with scattered ericoid shrubs. The lower dry slopes, where leaching is less severe and nutrient levels are higher, support a higher grassy cover (Mucina & Rutherford, 2010).

Table 8: Hierarchy of vegetation

Category Description	Classification
Biome	Fynbos
Bioregion	Eastern Fynbos - Renosterveld
Vegetation Types	Kouga Grassy Sandstone Fynbos
Status	Not threatened (Least Concern)

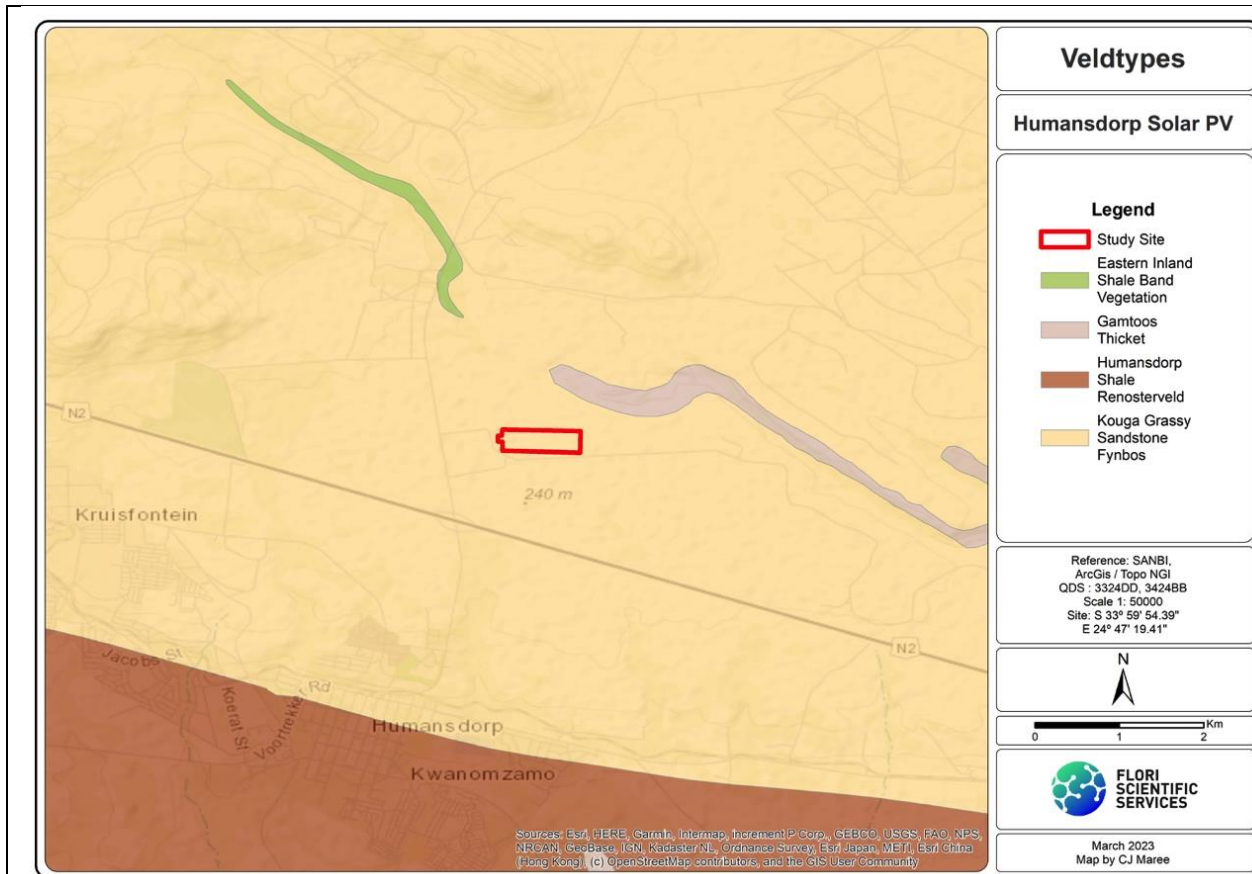


Figure 9: Veldtypes (Flori, 2023)

1.7.5.2. Vegetation of the Study Site

The study site is located within the original coverage of Kouga Grassy Sandstone Fynbos. The vegetation resembles natural grasslands with a few scattered fynbos elements in it. The vegetation / veld of the study site is badly degraded, open grassland with some features characteristic of Kouga Grassy Sandstone Fynbos, such as common grassy, forbs and scattered, but sparse low shrubland. However, there is a total lack of tall shrubs of proteoid shrubs (protea and leucadendron species), which is a determining factor of pristine, healthy Sandstone Fynbos. There is also a lack of ericoid shrubs on the study site, which is another common factor of pristine vegetation of the type in which the site is located.

During site investigations a number of common species were observed but no RDL species, and none are expected to occur either. The level of invasive alien infestation is low in terms of herbaceous plants, but is high in terms of trees, especially in disturbed areas where these trees (usually acacia species) quickly invade and colonise, forming dense groves. A list of species observed during the site visit can be found in the appendices, along with a list of species prominent to the vegetation unit.

1.7.6. Watercourses

There are no watercourses in the study area. The closest river is the Swart River (also known as the Rondebos River), which is approximately 533m north of the site perimeter (Figure 10). The Swart River flows in a southeasterly direction and into the sea at Aston Bay.

The latest national wetland map (Map 5, 2018) shows no wetlands in the project site (Figure 11).



Figure 10: Rivers and Streams (Google Earth, 2023)

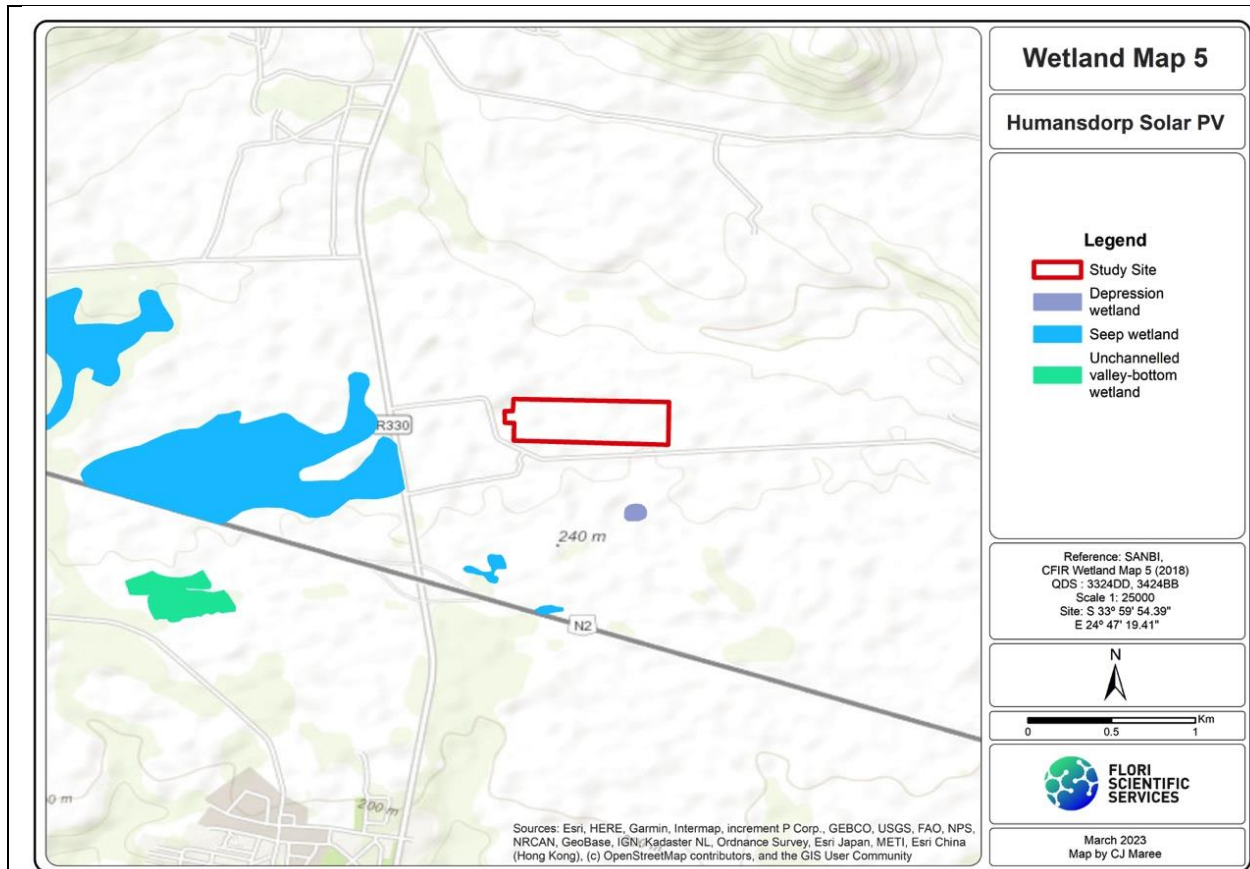


Figure 11: National Wetland Map 5 (Flori, 2023)

1.7.7. Drainage Regions

South Africa is geographically divided up into a number of naturally occurring Primary Drainage Areas (PDAs) and Quaternary Drainage Areas (QDAs). The different areas are demarcated into Water Management Areas (WMAs) and Catchment Management Agencies (CMAs). As of September 2016, there are officially nine WMAs, which correspond directly in demarcation to the CMAs (Government Gazette, 16 September 2016. No.1056, pg. 169-172). The study site is within PDA of **K** and the QDA of **K90F**. Table 9, below, gives a summary of information for the catchment areas for the study site.

Table 9: Summary of Catchment Area information

Level	Category
Primary Drainage Area (PDA)	K
Quaternary Drainage Area (QDA)	K90F
Water Management Area (WMA) – Previous / Old	Fish to Tsitsikamma
Water Management Area (WMA) – New (as of Sept. 2016)	Mzimvubu – Tsitsikamma (WMA 7)
Sub-Water Management Area	Tsitsikamma
Catchment Management Agency (CMA)	Mzimvubu – Tsitsikamma (CMA 7)

Wetland Vegetation Ecoregion	Eastern Fynbos – Renosterveld Sandstone Fynbos (Group 2)
Flagship Rivers	No
Fish FEPA (Freshwater Ecosystem Priority Area)	No
Fish FSA (Fish Support Area)	Yes (The quaternary sub-catchment)
Fish Corridor	No
Fish Migratory	No
Priority Quaternary Catchment	No
SWSA (National importance)	No
WSA (Sub-national, provincial importance)	No

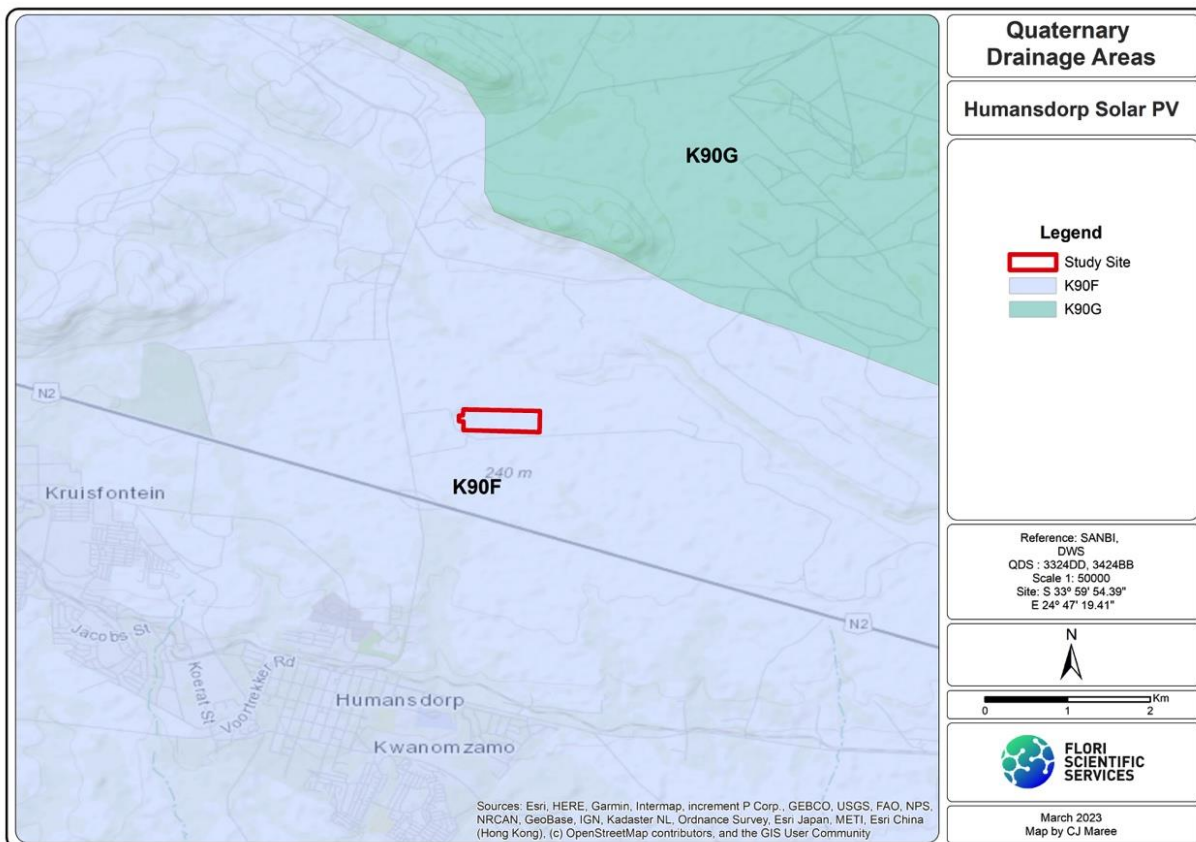


Figure 12: Quaternary Drainage Areas (QDAs) (Flori, 2023)

1.7.8. Strategic Water Source Areas

The study site is not situated within any Strategic Water Source area of South Africa (SWSA), or important Water Source Area (WSA) of the Province. That is, not within a groundwater (gw) or a surface water (sw) SWSA. The study site is outside of, but borders on, the West Rand Cast Belt, which is a national gw-SWSA. A Water Source Area (WSA) is a water catchment or aquifer system that either supplies a relatively large volume of water for its size or is the primary source of water for a town, city or industrial activity.

Strategic Water Source Areas of South Africa (SWSA) are defined as areas of land that either: (a) supply a large) volume of surface water runoff (i.e. watercourses) in relation to their size and so are considered nationally important; (b) have relatively high groundwater recharge and groundwater forms a nationally important resource; (c) areas that meet both criteria (a) and (b) (WRC, 2019).

According to SANBI, a Strategic Water Source Areas of South Africa (SWSA) are those areas that supply a disproportionate amount of mean annual runoff in relation to the size of the geographical region. These areas are important because they have the potential to contribute significantly to overall water quality and supply, supporting growth and development needs that are often a far distance away. These areas make up 8% of the land area across South Africa, Lesotho and Swaziland, but provide 50% of the water in these countries (SANBI).

1.7.9. National Priority areas

The study site is situated within the area of the large Garden Route Biosphere Reserve, which extends from the Gamtoos River mouth east of Jeffreys Bay, all the way to west of George and includes the entire Town of Humansdorp, as well as the study site (Figure 13). The study site is not within any other national priority areas.

National priority areas include formal and informal (private) protected areas (nature reserves); important bird areas (IBA); RAMSAR sites; National freshwater ecosystem priority areas (NFEPA) and National protected areas expansion strategy (NPAES) focus areas. According to the Protected Areas Register, which is maintained by the Department of Department of Forestry, Fisheries and the Environment (DFFE) (<https://portal.environment.gov.za>), the study site is not within a protected area.

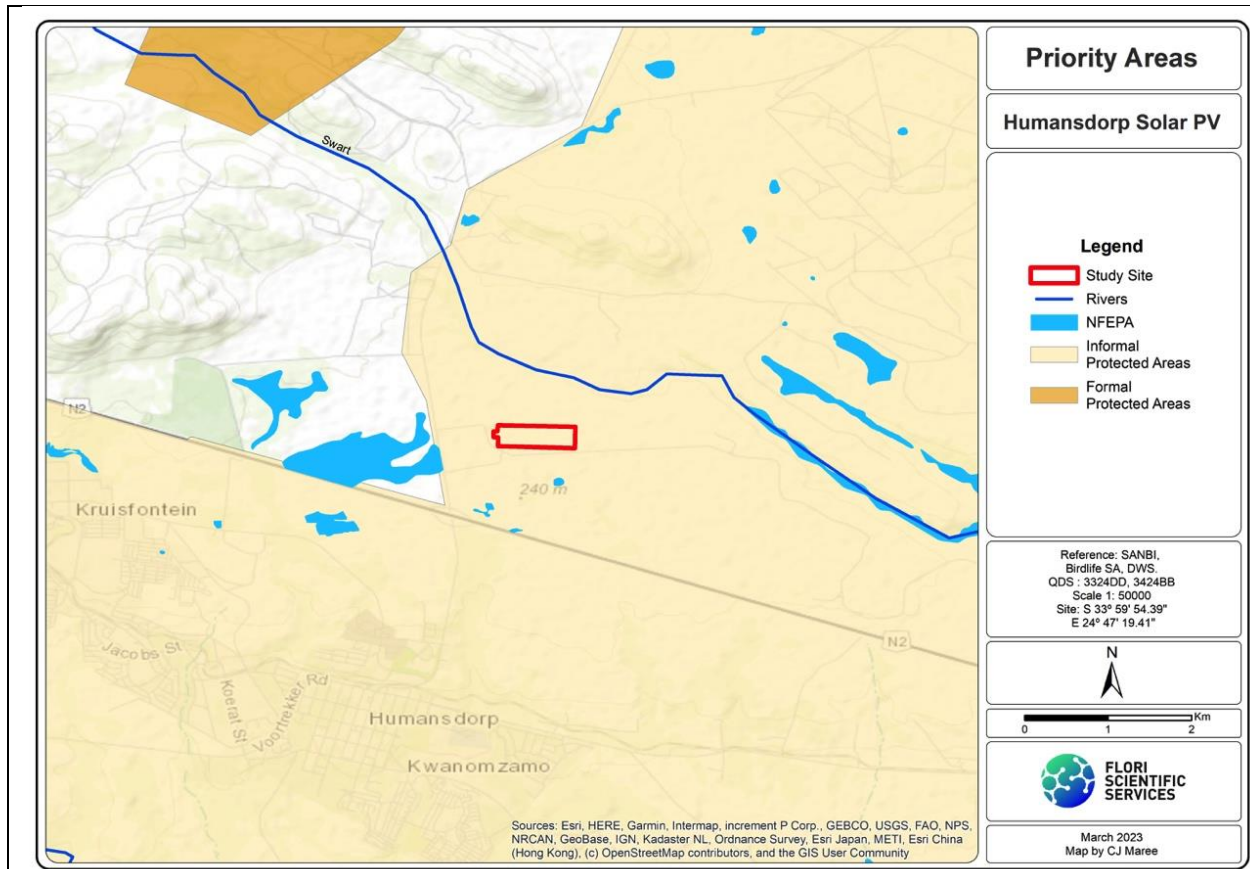


Figure 13: National Priority Areas (Flori, 2023)

1.7.10. Critical Biodiversity Areas & Ecological Support Areas

According to the Eastern Cape Biodiversity Conservation Plan (2019), the study site is situated within a demarcated Critical Biodiversity Area (CBA) (Figure 14). Critical biodiversity areas (CBAs) are terrestrial and aquatic features in the landscape that are critical for retaining biodiversity and supporting continued ecosystem functioning and services (SANBI, 2007). These form the key outputs of a systematic conservation assessment and are the biodiversity sectors inputs into multi-sectoral planning and decision-making tools. CBAs are areas of the landscape that need to be maintained in a natural or near-natural state in order to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services (SANBI). Ecological Support Areas (ESAs) are mostly natural or semi-natural areas that are often used to buffer CBAs as well as form corridors for the movement of fauna between CBAs and other natural areas.

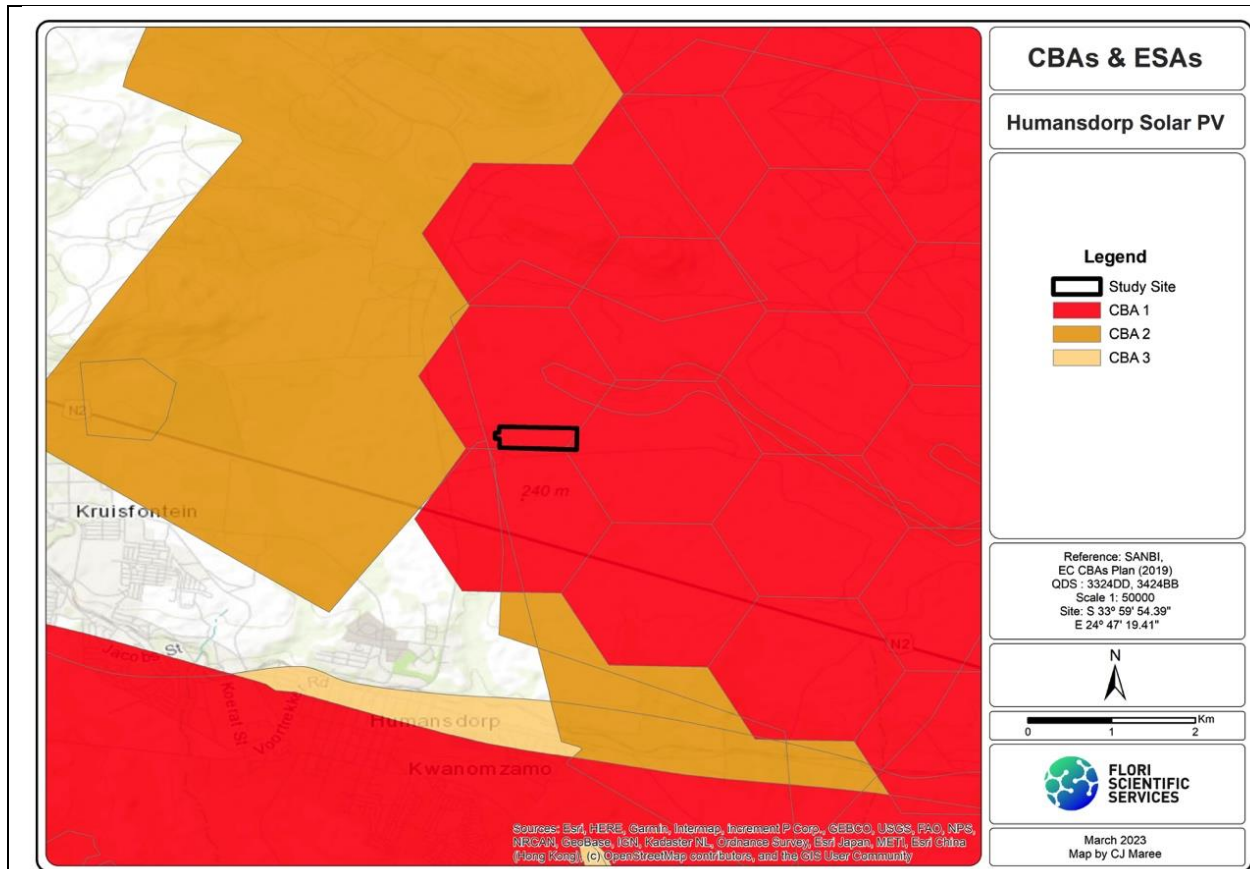


Figure 14: Critical Biodiversity Areas (CBAs) (Flori, 2023)

1.7.11. National Screening Tool

The National Screening Tool (www.screening.environment.gov.za) is a desktop assessment and guideline implemented by the DFFE. The assessments of sensitivities according to the screening tool (accessed in March 2023) are as follows:

- Terrestrial Biodiversity Theme Sensitivity: Very High.
- Aquatic Biodiversity Theme Sensitivity: Low.
- Animal Species Theme Sensitivity: High.
- Plant Species Theme Sensitivity: Medium.

During site investigations the sensitivities as per the desktop screening tool were assessed and ‘ground-truthed’. According to the site investigations the aquatic and plant sensitivities are correct and verified, as being ‘Low’ and ‘Medium’, respectively. The terrestrial biodiversity sensitivity of ‘Very High’ is disputed and at most is only ‘Medium’, due to the high levels of impacts, degradation, which are historical in nature and not simply recent. The only factor influencing the sensitivity of the screening tool for the study area is that it is in a CBA. The animal theme is also disputed and calculated to be ‘Medium’ as well, with the main driver being the avifaunal component.

1.7.12. Heritage Impact Assessment Findings

The purpose of this study is to identify, record and if necessary, salvage the irreplaceable heritage resources that may be impacted upon by the proposed development. In compliance with Section 38 (8) of the NHRA, EnviroSaint (Pty) Ltd retained Sativa Travel and Environmental Consultants (Pty) Ltd (STEC) to conduct a Phase 1 Archaeological and Heritage Impact Assessment (AIA/HIA) for the proposed establishment of a Solar PV Park with Battery Energy Storage System on Portion 4 of the farm Rheebofsfontein 346, Kouga Local Municipality, Sarah Baartman District Municipality, Eastern Cape Province. Desktop studies, drive-throughs and consultations with the landowners were conducted in order to identify heritage sites within the proposed development site. The proposed development site has been altered by mainly agriculture activities in the area as well as wind farms in the greater area. The general study area is known for occurrence of archaeological and Stone Age archaeological sites; however, the study did not identify any significant archaeological sites within the proposed development site. In terms of the built environment there are no buildings which are older than 60 years (no buildings on site). It should be noted that archaeological material and unmarked graves may exist in the area and when encountered during construction, work must be stopped forth-with, and the finds must be reported to the South African Heritage Resource Agency (SAHRA) or the heritage practitioner. This report must be submitted to the SAHRA for review in terms of Section 38 (4) of the NHRA.

The report makes the following observations:

- The findings of this report have been informed by desktop review, site investigations and consultations with landowners and impact assessment reporting which include recommendations to guide heritage authorities in making decisions with regards to the proposed development.
- The immediate project area is predominantly agriculture and wind farm.
- Some sections of the proposed development site are severely degraded from previous and current land use activities.

The report sets out the potential impacts of the proposed development on heritage matters and recommends appropriate safeguard and mitigation measures that are designed to reduce the impacts where appropriate. The Report makes the following recommendations:

- It is recommended that SAHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA requirements.

- It is recommended that SAHRA make a decision in terms of Section 38 (4) of the NHRA to approve the proposed development on condition that no significant archaeological and heritage sites were identified within the proposed development.
- From a heritage perspective supported by the findings of this study, the proposed development is supported. However, the proposed development should be approved under observation that construction does not extend beyond the area considered in this report.
- Should chance archaeological materials or human remains be exposed during construction on any section of the site, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in construction scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.
- Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resources barriers to the proposed development. SAHRA may approve the proposed development planned with special conditions to implement with the recommendations here in made.

This report concludes that the impacts of the proposed development on the cultural environmental values are not likely to be significant on the entire site if the EMP includes recommended safeguard and mitigation measures identified in this report. The project may proceed from a heritage point of view.

1.7.13. Palaeontology Assessment Findings

There is a low chance of finding fossils in the sandy soil and the eroded sedimentary rock of the Goudini Formation that underlies the study site. Fossil trackways made by invertebrates may be found in the rocks of the Goudini Formation.

An overview of the literature on the palaeontology and associated geology of the area is given. Although no publications exist that mention fossils from the study site, several geological studies and palaeontological assessments have been done elsewhere on the Goudini Formation.

The ECO should take responsibility for supervising the development and should follow the Chance Find Procedure (outlined in this report) if in the unlikely event a significant fossil discovery is made.

The Development may proceed from a Palaeontological point of view.

1.7.14. Visual Impact Assessment Findings

Based on the findings it is evident that the proposed project is in a rural area which is located on a low coastal plain, with limited topographical variation. The natural vegetation of the region is low grassy fynbos, which reaches a maximum height of around 0.5m. The natural vegetation is treeless, apart from coastal areas and those with steep slopes that provide fire protection (e.g., river valleys). The area north of the site towards the mountains is natural vegetated, and used for extensive (grazing) agriculture, whilst the area to the south of the N2 is cleared and is used for dairy agriculture.

The region around the largest settlements (Humansdorp, Jeffreys Bay and St. Francis Bay) is a mecca for the development of wind energy facilities. The presence of these large structures and their associated transmission lines and substations has already affected the quality of the visual landscape. Wind turbines are more than a hundred metres tall and dot the landscape over extensive areas.

Furthermore, the proposed site is directly adjacent to an Eskom substation, with several electricity transmission and distribution lines that radiate out from it. The closest wind turbine is 1.3km east of the site. The presence of this existing infrastructure with an industrial appearance significantly lowers the landscape quality directly around the proposed site. The region generally has an agricultural sense of place, except for the above-mentioned industrial elements.

The most significant risks to the landscape and visual environment are the impact on visual character and sense of place, impact on visual intrusion and VAC and the impact on visibility and visual exposure. Based on the impact assessment, it was found that the various landscape and visual impacts would generally be low to very low. Proposed mitigation measures would not necessarily decrease the overall impact significance but will decrease the severity. Specific focus should be placed on the maintenance of natural vegetation and the rehabilitation of areas cleared for construction purposes which will not be used during the operational phase of the project. Avoidance of vegetation clearance is a definite priority over later rehabilitation after clearance.

Other considerations include the effective management of dust generation. The impact on landscape character and sense of place cannot be mitigated. Theoretically the predicted visual impact [based on the Guideline for Involving Visual and Aesthetic Specialists on EIA processes (Oberholzer, 2005)] is expected to be moderate. The assessment of the nature of the development and the sensitivity of the existing landscape and visual environment shows that landscape and visual impact during construction and operation are limited and of low significance. This is based on the following:

- The presence of existing industrial type (electricity transmission and generation) infrastructure has already significantly lowered the landscape quality within the study area.
- The limited height of the proposed infrastructure (generally less than 5m).
- There are no main roads and sensitive, permanent receptors located within the areas indicated under *high visibility* (areas within 2km from the proposed site boundary).

- Most views will be transient; even the transient viewpoints towards the site have effective vegetation screening to avoid the impact.

The proposed development will extend the cumulative effect of industrial type electrical generation and transmission development within the landscape. However, this will not increase to the extent of causing significant additional impact on the landscape and most of the receptors. Should the proposed solar PV facility be authorised, mitigation measures must be implemented to minimise the severity of impacts. The project may proceed from a Visual point of view.

Kindly refer to Appendix D for the full specialist studies.

2. FEASIBLE AND REASONABLE ALTERNATIVES

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

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

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

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

3. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

List alternative sites if applicable.

Alternative: (Solar PV Park + BESS)

Alternative S1² (preferred or only site alternative)

Alternative S2 (if any)

Alternative S3 (if any)

Latitude (S):		Longitude (E):	
33°	59'50.12"	24°	47'35.86
⊖	┆	⊖	┆
⊖	┆	⊖	┆

In the case of linear activities:

Alternative: (Powerline)

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Turn 1
- Turn 2
- Turn 3
- End point of the activity

Latitude (S):		Longitude (E):	
33°	59'53.10"	24°	47'4.11"
33°	59'55.74"	24°	47'3.48"
33°	59'56.15"	24°	47'0.99"
33°	0'0.82"	24°	46'56.51"
33°	0'6.59"	24°	46'57.91"

Alternative S2 (if any)

• Starting point of the activity

• Middle point of the activity

• End point of the activity

⊖	┆	⊖	┆
⊖	┆	⊖	┆
⊖	┆	⊖	┆

Alternative S3 (if any)

• Starting point of the activity

• Middle point of the activity

• End point of the activity

⊖	┆	⊖	┆
⊖	┆	⊖	┆
⊖	┆	⊖	┆

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

² "Alternative S.." refer to site alternatives.

4. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative: (Solar PV Park + BESS)

Alternative A1³ (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the activity:

195 000m ²
m ²
m ²

or, for linear activities:

Alternative: (Powerline)

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Length of the activity:

500m
m
m

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

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the site/servitude:

195 000m ²
m ²
m ²

5. SITE ACCESS

Does ready access to the site exist?

If NO, what is the distance over which a new access road will be built

YES	
m	

Describe the type of access road planned:

The site will be accessed via the N2 highway then the R330 Provincial Road and an unnamed gravel road to the proposed site. Within the site itself, existing internal access roads utilised for the Eskom Substation and small Melkhout Switching Station will be utilised to facilitate the movement of machinery, trucks and vehicles needed for the Solar PV Park and BESS establishment activities.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site. Layout Map is attached in **Appendix C** of this report.

6. SITE OR ROUTE PLAN

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

The site or route plans must indicate the following:

³ "Alternative A.." refer to activity, process, technology or other alternatives.



- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
 - rivers;
 - the 1:100 year flood line (where available or where it is required by DWA);
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.9 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.10 the positions from where photographs of the site were taken.




The study site is located approximately 3km north of the town center of Humansdorp in the Kouga Municipality, Eastern Cape Province. The Site is north of the N2 National Highway and east of the R330 Provincial Road. The site is situated immediately northeast of the existing Eskom Substation and small Melkhout Switching Station. The development footprint will be approximately 19,8ha in extent (including the Solar PV Park and associated BESS). The proposed connection 66kv power line will be 500m long. Refer to **Figure 1** above as well as **Appendix C** for site layouts and maps.




7. SITE PHOTOGRAPHS



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

Table 10: Photos of the study site

	<p>Study Site. Looking south. Showing some <i>Leucadendron</i> species (Conebush) – red and yellow small shrubs and <i>Stoebe</i> (Bankrupt Bush) – grey small bush in front.</p>
	<p>The veld is degraded and currently utilised as grazing for cattle. There are numerous other existing and historic disturbances of the site including diggings, and cultivation / ploughing.</p>

	<p>Study site looking north towards the mountains and Swart River. Notice the lack of the short shrub layer that is also characteristic of Kouga Grassy Sandstone Fynbos (i.e. degraded veld)</p>
	<p>Existing disturbances on the study site. Appears that there were low levels of excavation of sand as well as removal of rocks from out the land for the purpose of cultivation. Also notice the wind farm in the background, which is close and situated to the east of the site.</p>
	<p>Highly disturbed and altered section in the extreme west of the site earmarked for the BESS and Switching station area of the Solar PV project. The trees in picture are all invasive alien species of blackwattle (<i>Acacia mearnsii</i>) and rooikrans (red-eye wattle) (<i>Acacia cyclops</i>). All of the trees and groves present on the site and adjacent lands / areas are various <i>Acacia</i> species and pine (<i>Pinus pinaster</i>) all of which are invasive weeds.</p>

	<p>Gravel road bordering the study site in the south. Looking east towards the large existing wind farm and power lines along the road. Study site is to the immediate left.</p>
	<p>More areas on the study site invaded by alien Acacias. Here many have been cut down and removed, probably for firewood.</p>
	<p>The Eskom (Humansdorp) Substation located on the southwest corner of the study site.</p>

	<p>Melkhout Switching Station</p>
	<p>Geelbos (<i>Leucadendron microcephalum</i>) is a common proteoid species growing on the study site and region. The shrub is not threatened and as a status of 'Least Concern'.</p>

Photographs of the site and the surroundings are **attached as Appendix B** of this report. The photographs capture the site-specific conditions and potential receiving environment.

8. FACILITY ILLUSTRATION

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

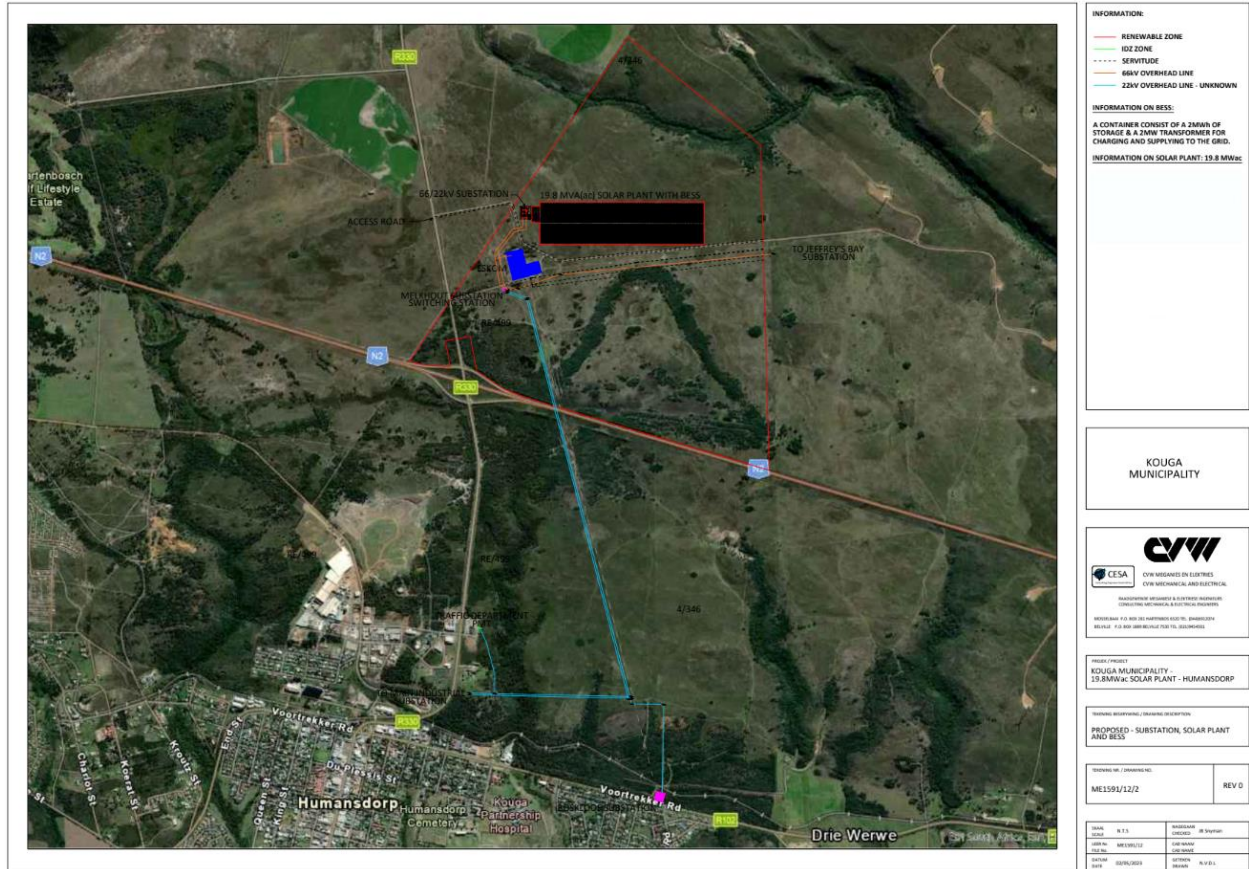


Figure 15: Facility illustration

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 560 000 000.00
What is the expected yearly income that will be generated by or as a result of the activity?	R 94 315 000.00
Will the activity contribute to service infrastructure?	YES
Is the activity a public amenity?	NO
How many new employment opportunities will be created in the development phase of the activity?	60 x Contractor workers for 8 x months
What is the expected value of the employment opportunities during the development phase?	R 36 000 000.00
What percentage of this will accrue to previously disadvantaged individuals?	10 %
How many permanent new employment opportunities will be created during the operational phase of the activity?	15 x Permanent jobs
What is the expected current value of the employment opportunities during the first 10 years?	R 14 400 000.00
What percentage of this will accrue to previously disadvantaged individuals?	50 %

9(b) Need and desirability of the activity

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

The critical aim of investigating the need and desirability of a proposed project revolves around determining suitability (i.e. is the activity proposed in the right location for the suggested land-use/activity) and timing (i.e. is it the right time to develop a given activity?). It is important to take note that South Africa's population and economy continue to grow, so does the electricity demand and the strain it places on natural resources. Renewable energy is the fastest-growing electricity source, displacing fossil fuel-electricity which ensures the transition towards more sustainable electricity production Globally and as a results the IRP 2010-2030 Plan was initiated.

The proposed development is in line with the national DMRE's IRP 2010-2030 which was promulgated with the aim of providing a long-term, cost-effective strategy to meet the electricity demand in South Africa. The IRP 2010-2030 objectives align with Government's in terms of increased electricity supply sourced from renewable

sources, as well as broader environmental and social responsibilities. Furthermore, the KLM wishes to reduce the burden that load shedding is placing on its infrastructure and residents.

Indicate any benefits that the activity will have for society in general:

There will be an increase in the electricity output within the Humansdorp area, and reduce the impact of load shedding on the Municipal infrastructure and its residents.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

The placement of the proposed development will result in direct temporary employment during construction where the highest possible portion of construction employees will be sourced from the local area followed by the region and province. Once established, the operation of the facility would also result in direct and indirect economic opportunities. These would stem from expenditure on operations including expenditure on employees that would not otherwise have occurred particularly in the local area. Aside from these direct employment opportunities, the operational expenditure on the project and the spending of those employed directly would result in positive indirect impacts on the local and regional economy. Essentially those that secure jobs on the project would spend some portion of their increased income on local goods and services generally purchased by households. This would benefit those businesses where the money is spent. During the construction phase the civil works and other construction activities, specialised industrial machinery and building construction sectors would benefit substantially. The development would provide a major injection for contractors and workers in the area that would in all likelihood purchase goods and services in the local area and the wider region.

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline:	Administering authority:	Date:
National Environmental Management Act, 1998 (Act No.107 of 1998)	National Department of Forestry, Fisheries and the Environment (DFFE)	1998
National Water Act, 1998 (Act No.36 of 1998)	Department of Water and Sanitation (DWS)	1998
Biodiversity Assessment 2013	Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (ECDEDEAT).	2013
National Heritage Resources Act, 1999 (Act No.25 of 1999)	PHRA – Eastern Cape	1999
Legislation and Guidelines		

All the applicable environmental standards contained within the environmental legislation will be adhered to. Below are applicable legislations and guidelines for the proposed development and have been identified as relevant:

The Constitution of South Africa, 1996 (Act No.108 of 1996), as amended.

The Constitution of the Republic of South Africa⁴ provides that, everyone has a right to an environment that is not harmful to their health or well-being. It further provides that, the environment should be protected for future generations through the implementation of the reasonable legislative and other measures that prevent pollution and ecological degradation.

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

The National Environmental Management Act aims to improve the quality of environmental decision-making by setting out principles for environmental management that apply to all government departments and organizations that may affect the environment. The Integrated Environmental Management (IEM) principles also aim to ensure that environmental impacts are considered before actions are taken or implemented and to ensure that there are adequate opportunities for public participation in decisions that may affect the environment. NEMA also creates a framework for facilitating the role of civil society in environmental governance.

EIA Regulations of 2014 (as amended)

The NEMA EIA Regulations (2014), were promulgated and came into effect on 04 December 2014. The Amendments to the EIA Regulations, 2014, published in Government Notice R326 in Government Gazette No. 40772 came into effect on 7 April 2017 and the subsequent amendments on 11 June 2021. These Regulations regulate the procedure and criteria as contemplated in Chapter 5 of the Act relating to the preparation, evaluation, submission, processing and consideration of, and decision on, applications for environmental authorisations for the commencement of activities, subjected to environmental impact assessment, in order to avoid or mitigate detrimental impacts on the environment, and to optimise positive environmental impacts, and for matters pertaining thereto.

National Water Act, 1998 (Act No.36 of 1998)

In terms of chapter 3, water resources are to be protected, used, developed, conserved, managed and controlled. This Act recognizes that water is a scarce resource; it is a natural resource that belongs to all of South Africa's people. The National Department of Water and Sanitation is responsible for the nation's water resource and also the Minister of Department of Water and Sanitation ensures that the water resource is "protected, used, developed, conserved, managed and controlled" through the implementation of this Act (National Water Act 36 of 1998).

⁴ The Constitution of the Republic of South Africa, 1996 (Act 108 of 1996).
Section 24 – Bill of Rights

It should be noted that the proposed development activities are not planned to impact on any receiving water resources.

National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004)

The National Environmental Management: Biodiversity Act (NEM:BA) makes provisions for achieving the objectives of the United Nation's Convention on Biological Diversity, to which South Africa is a signatory. The Bill promotes management, conservation and sustainable use of indigenous biological resources, and provides for:

- the management and conservation of biological diversity;
- the use of indigenous biological resources in a sustainable manner; and
- the fair and equitable sharing of benefits arising from the commercialization through bio-prospecting of traditional uses and knowledge of generic resources.

The Bill gives effect to international agreements relating to biodiversity which are binding on the Republic and provides for co-operative governance in biodiversity management and conservation, and provides for a National Biodiversity Institute to assist in achieving the above objectives. The Act gives wide powers to the National Biodiversity Institute to inter alia protect flora and fauna in appropriate enclosures, the collection of information, undertaking and promotion of research on indigenous biodiversity and the sustainable use of indigenous biological resources, the prevention, control or eradication of listed invasive species, biodiversity planning and other functions. This act lists all critically endangered, vulnerable and protected species. The potential occurrence of any such species were investigated in the process.

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

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

National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004)

The main objective of the National Environmental Management Air Quality Act (NEMAQA) is the protection of the environment and human health in a sustainable (economic, social and ecological) development

framework, through reasonable measures of air pollution control. *The proposed development is not envisaged to impact on the receiving air quality conditions.*

Occupational Health and Safety Act, 1993 (Act No.85 of 1993)

To provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work. All permits required in terms of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) as amended must be obtained from the relevant authority prior to construction.

Hazardous Substance Act, 1973 (Act No. 15 of 1973)

Provides for the definition, classification, use, operation, modification, disposal or dumping of hazardous substances.

National Environmental Management: Waste Act, 2008 (Act No.59 of 2008) (NEM:WA)

The NEM:WA provides reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development. One of its main objectives is to protect health, wellbeing and the environment by providing reasonable measures for securing ecologically sustainable development while promoting justifiable economic and social development. During the construction and operational phase of the project, various waste streams will be generated such:

- Domestic waste from the construction camp / office area;
- Building rubble due to cut and fill activities on site amongst others.

It should be kept in mind that the project does not trigger a Waste management activity.

National Heritage Resource Act, 1999 (Act No.25 of 1999) and Regulations

No person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site. No person may, without a permit issued by the South African Heritage Resource Agency (SAHRA) or a provincial heritage resources authority destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority. A grave is widely defined in the Act to include the contents, headstone or other marker of such a place, and any other structure on or associated with such place. No heritage resources are affected by the development.

This BAR Process also takes consideration the following legislation amongst others:

- South African National Standard SANS 10103:2008 (The Measurement and Rating of Environmental Noise with Respect to Annoyance and Speech Communication).
- National Noise Control Regulations (1998)

11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	
50m ³	

If yes, what estimated quantity will be produced per month?

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

The construction Solid waste will be temporarily be stored on site in skip bins. Once the waste is ready for disposal the recyclable material will be put aside for recycling while the non-recyclables materials will be transported to a municipal landfill site.

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

The construction solid waste will be disposed at the nearest registered solid waste facility. It might be the Humansdorp Landfill site or any other registered waste facility in the area. The necessary permits will be arranged by the applicant (Kouga Local Municipality) for the contractor.

Will the activity produce solid waste during its operational phase?

	NO
m ³	

If yes, what estimated quantity will be produced per month?

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

N/A

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

N/A

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

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

	NO
--	----

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?

	NO
--	-----------

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

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

	NO
--	-----------

If yes, what estimated quantity will be produced per month?

m^3

Will the activity produce any effluent that will be treated and/or disposed of on site?

	NO
--	-----------

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

Will the activity produce effluent that will be treated and/or disposed of at another facility?

	NO
--	-----------

If yes, provide the particulars of the facility:

Facility name:	N/A		
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

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

During construction phase, a two waste bin system will be used. Whereby one bin will be marked as recyclables and the other non recyclables in order to separate waste at source. A community-based recycling organisation will be identified were all the recyclables will be sent to. The non-recyclables will be transported to a municipal landfill site. Chemical portable toilets will be used on site.

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	
	NO

If yes, is it controlled by any legislation of any sphere of government?

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

If no, describe the emissions in terms of type and concentration:

There will be minimal emission of dust particles into the atmosphere from the movement of vehicles during the construction of the Humansdorp Solar PV Plant and during the transportation of equipment and material to site. The emissions are however minimal and such emissions are controlled by the local municipality. If by any means the local municipality notices emissions beyond those allowed by their by-laws, then they will approach the contractor. The dust particles can however be minimised by making sure the vehicles move at speeds below 40km/h while on gravel roads. Other pollutants which can result but at very low concentrations are SO₂, NO_x and PM10 from diesel operated machinery and vehicles. There will also be emission construction materials and raw materials stored on site. The workers should cover or wet construction materials such as marl to prevent dust nuisance.

11(d) Generation of noise

Will the activity generate noise?

YES	
	NO

If yes, is it controlled by any legislation of any sphere of government?

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

If no, describe the noise in terms of type and level:

The activity will generate noise during construction phase. During construction noise will arise from construction machinery such as back-actors, trucks, and tractors.

- The noise levels are not expected to be beyond acceptable levels as there are no sensitive receptors nearby.
- During construction, noise should be limited strictly to normal working hours.

Should members from the community complain about noise, the contractor should seek the advice of the site manager on possible noise reduction measures.

12. WATER USE

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

municipal	water board	groundwater	river, stream, dam or lake	other	the activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:

25 000litres

Does the activity require a water use permit from the Department of Water Affairs?

NO

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

13. ENERGY EFFICIENCY

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

The proposed project is a Solar PV Park which harnesses renewable energy to produce electricity. Thus the project itself is an energy efficient facility.

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

The project is an alternative energy source by nature.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

Section C Copy No. (e.g.
A):

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

- Has a specialist been consulted to assist with the completion of this section?

YES	<input type="text"/>
-----	----------------------

If YES, please complete form XX for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

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

Alternative S2 (if any):

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

Alternative S3 (if any):

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

2. LOCATION IN LANDSCAPE

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

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

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

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

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion

of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

4.1 Natural veld – good condition ^E

4.2 Natural veld – scattered aliens ^E

4.3 Natural veld with heavy alien infestation ^E

4.4 Veld dominated by alien species ^E

4.5 Gardens

4.6 Sport field

4.7 Cultivated land

4.8 Paved surface

4.9 Building or other structure

4.10 Bare soil

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s). An ecological Impact Assessment report is attached to **Appendix D** of this report.

Natural veld - good condition ^E	Natural veld with scattered aliens^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

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

5. LAND USE CHARACTER OF SURROUNDING AREA

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

5.1 Natural area

5.2 Low density residential

5.3 Medium density residential

5.4 High density residential

5.5 Informal residential

5.6 Retail commercial & warehousing

5.7 Light industrial

5.8 Medium industrial ^{AN}

5.9 Heavy industrial ^{AN}

5.10 Power station – Eskom Substation

5.11 Office/consulting room

5.12 Military or police base/station/compound

5.13 Spoil heap or slimes dam^A

5.14 Quarry, sand or borrow pit

5.15 Dam or reservoir

5.16 Hospital/medical centre

5.17 School

5.18 Tertiary education facility

5.19 Church

5.20 Old age home

5.21 Sewage treatment plant^A

5.22 Train station or shunting yard ^N

5.23 Railway line ^N

5.24 Major road (4 lanes or more) ^N

5.25 Airport ^N

5.26 Harbour

5.27 Sport facilities

5.28 Golf course

5.29 Polo fields

5.30 Filling station ^H

5.31 Landfill or waste treatment site

5.32 Plantation

5.33 Agriculture

5.34 River, stream or wetland

5.35 Nature conservation area

5.36 Mountain, koppie or ridge

5.37 Museum

5.38 Historical building

5.39 Protected Area

5.40 Graveyard

5.41 Archaeological site

5.42 Other land uses (describe) – Wind Farm

If any of the boxes marked with an “N” are ticked, how will this impact / be impacted upon by the proposed activity.

N/A

If any of the boxes marked with an “An” are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain: **N/A**

If YES, specify:

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

If YES, specify and explain:

If YES, specify:



6. CULTURAL/HISTORICAL FEATURES

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

	NO
	Uncertain

If YES, explain:

N/A

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

Briefly explain the findings of the specialist:

The field survey did not identify any graves within the proposed Solar PV Park development site. It should be noted that burial grounds and grave sites are accorded the highest social significance threshold. They have both historical and social significance and are considered sacred. Also, graves are important in providing evidence for communities seeking land restitution. Wherever they exist or not, they may not be tampered with or interfered with during any development without a permit from SAHRA. It is also borne in mind that the possibility of encountering human remains during subsurface earth moving works anywhere on the landscape is ever present.

There are structures that exist in greater project area and not within the proposed development site. Therefore, the proposed Solar PV Park establishment does not trigger Section 34 of the NHRA which protects buildings, and structures older than 60 years.

The study did not record any public memorials and monuments within the proposed Solar PV Park establishment site.

Will any building or structure older than 60 years be affected in any way?
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

	NO
	NO

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The person conducting a public participation process must take into account any 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 the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
 - (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
 - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (v) the municipality which has jurisdiction in the area;
 - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
 - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
 - (i) one local newspaper; or
 - (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;
- (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 local 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 subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
 - (i) illiteracy;
 - (ii) disability; or
 - (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
 - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
 - (iii) the nature and location of the activity to which the application relates;
 - (iv) where further information on the application or activity can be obtained; and
 - (iv) the manner in which and the person to whom representations in respect of the application may be made.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

6. AUTHORITY PARTICIPATION

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least 30 (thirty) calendar days before the submission of the application.

7. CONSULTATION WITH OTHER STAKEHOLDERS

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

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application at least 30 (thirty) calendar days before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

<input type="checkbox"/>	<input checked="" type="checkbox"/> NO
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If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

EnviroSaint has not yet received any comments from stakeholders. The public participation period is planned to occur from Friday, 26 May 2023 to Monday 26 June 2023 . All comments received will be incorporated into the Final BAR.
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SECTION D: IMPACT ASSESSMENT

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

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

EnviroSaint has not yet received any comments from stakeholders. The public participation period is planned to occur from **Friday, 26 May 2023 to Monday 26 June 2023**. All comments received will be incorporated into the Final BAR.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report):

EnviroSaint has not yet received any comments from stakeholders. The public participation period is planned to occur from **Friday, 26 May 2023 to Monday 26 June 2023**. All comments received will be incorporated into the Final BAR.

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

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

2.1. IMPACT ASSESSMENT METHODOLOGY

The section below is the method used for determining the significance of impacts. Each of the impacts were listed taking into consideration the different phases (construction, operation, decommissioning). A description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives on the environment was provided. Impacts and risks were identified, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to

which these impacts - (a) can be reversed; (b) may cause irreplaceable loss of resources; and (c) can be avoided, managed or mitigated.

It should be noted that all findings and recommendations for mitigation are included in the EMPr (full reports are included as Appendices). The contents of all specialist reports include information as prescribed in Regulation 32(3) of the EIA Regulations, 2014 and provide preference ranking of the site.

In addition, the following was identified:

- Positive and negative impacts that the proposed development will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; and
- The possible mitigation measures that could be applied and level of residual risk.

The following methodology was applied to the prediction and assessment of impacts/risks. Potential impacts were rated in terms of the direct, indirect and cumulative:

- Direct impacts are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.
- Indirect impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.
- Cumulative impacts are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.
- Nature of impact - this reviews the type of effect that a proposed activity will have on the environment and should include “what will be affected and how?”

Table 11: Potential Intensity/Severity Rating

Potential Intensity Description (negative)	Intensity	Score
Change is slight, often not noticeable, natural functioning of environment not affected.	Negligible	1
Natural functioning of environment is minimally affected. Natural, cultural and social functions and processes can be reversed to their original state.	Low	2
Environment remarkably altered, still functions, if in modified way. Negative impacts cannot be fully reversed.	Medium	3
Cultural and social functions and processes disturbed – potentially ceasing to function temporarily.	High	4
Natural, cultural and social functions and processes permanently cease, and valued, important, sensitive or vulnerable systems or communities are substantially affected. Negative impacts cannot be reversed.	Very high	5

Note that the concept of “irreplaceable loss of a resource” is to be taken into account in the Potential Intensity score of an impact

- Irreplaceability of resource loss caused by impacts –
 - High irreplaceability of resources (project will destroy unique resources that cannot be replaced, i.e. this is the least favourable assessment for the environment. For example, if the project will destroy unique wetland systems, these may be irreplaceable);
 - Moderate irreplaceability of resources;
 - Low irreplaceability of resources; or
 - Resources are replaceable (the affected resource is easy to replace/rehabilitate, i.e. this is the most favourable assessment for the environment).

Table 12: Spatial extent – The size of the area that will be affected by the risk/impact

Extent Description	Score
Site specific (Impacted area is only at the site – the actual extent of the activity).	1
Local (iiimpacted area is limited to the site and its immediate surrounding area).	2
Regional (Impacted area extends to the surrounding area, the immediate and the neighboring properties).	3
Provincial (Impact considered of provincial importance).	4
International/Global (e.g. Greenhouse Gas emissions or migrant birds).	5

- **Duration** – The timeframe during which the risk/impact will be experienced:
The concept of “reversibility” is reflected in the duration scoring. I.e. the longer the impact endures the less likely it will be reversible.

Table 13: Duration

Duration Description	Score
Temporary (less than 3 year) or duration of the construction period. This impact is fully reversible. E.g. the construction noise temporary impact that is highly reversible as it will stop at the end of the construction period	1
Medium term (3 to 10 years). The impact is reversible with the implementation of appropriate mitigation and management actions.	2
Long term (> 10 years but where the impact will cease after the operational life of the activity). The impact is reversible with the implementation of appropriate mitigation and	3

management actions. E.g. the noise impact caused by the desalination plant is a long term impact but can be considered to be highly reversible at the end of the project life, when the project is decommissioned	
Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient). This impact is irreversible. E.g. The loss of a palaeontological resource on site caused by construction activities is permanent and would be irreversible.	4
Permanent – no mitigation measures of natural process will reduce impact after implementation – impact will remain after operational life of project.	5

Reversibility of impacts -

- High reversibility of impacts (impact is highly reversible at end of project life, i.e. this is the most favorable assessment for the environment. For example, the nuisance factor caused by noise impacts associated with the operational phase of an exporting terminal can be considered to be highly reversible at the end of the project life);
- Moderate reversibility of impacts;
- Low reversibility of impacts; or
- Impacts are non-reversible (impact is permanent, i.e. this is the least favorable assessment for the environment. The impact is permanent. For example, the loss of a paleontological resource on the site caused by building foundations could be non-reversible).

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

Table 14: Probability – The probability of the impact/risk occurring

Probability Description	Score
Improbable (little or no chance of occurring <10%)	1
Low Probability (10 - 25% chance of occurring)	2
Probable (25 - 50% chance of occurring)	3
Highly probable (50 – 90% chance of occurring)	4
Definite (>90% chance of occurring).	5

- Magnitude–The anticipated severity of the impact (Intensity + Extent + Duration):
- Extreme (extreme alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they permanently cease);
- Severe (severe alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);

- Substantial (substantial alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);
- Moderate (notable alteration of natural systems, patterns or processes, i.e. where the environment continues to function but in a modified manner); or
- Slight (negligible alteration of natural systems, patterns or processes, i.e. where no natural systems/environmental functions, patterns, or processes are affected).
- Significance – Will the impact cause a notable alteration of the environment? To determine the significance of an identified impact/risk, the consequence is multiplied by probability.

Impact Magnitude = Potential Intensity + duration + extent

Significance rating = Impact magnitude * Probability

Table 15: Guide to assessing risk/impact significance as a result of consequence and probability

Scoring	Significance rating	Description
81-100	Very High	The project cannot be authorised unless major changes to the design are carried out to reduce the significance rating.
60--80	High	The impacts will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-making.
45-59	Medium high	The impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated.
30-44	Medium Low	The impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making.
15-29	Low	The impact may result in very minor alterations of the environment and can be avoided through the implementation of mitigation measures.
1-14	Very Low	No action required.

- Significance was rated as follows (based on Table above)
 - Very low (the risk/impact may result in very minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making);
 - Low (the risk/impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision making);

- Medium (the risk/impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated); or
- High (the risk/impacts will result in a considerable alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision making).
- Very high (the risk/impacts will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision making
- (i.e. the project cannot be authorized unless major changes to the engineering design are carried out to reduce the significance rating).

Impacts have been described both before and after the implementation of the proposed mitigation and management measures. The scenario “without mitigation” considers all management actions already proposed by the proponent as part of the project description. “With mitigation” assesses the significance rating of the potential impact, taking into account any additional management actions recommended by the specialist.

Linked to the above, for each impact assessment, mitigation measures are generally listed under the following three categories (as applicable):

- Mitigation measures inherent to the project design (i.e. mitigation/management actions that the proponent had planned to implement as part of the project description);
- Key management actions proposed by specialist (pertinent measures that will be written into, and enforced through the EMPr for implementation to ensure that the significance of the associated impact is acceptable); and
- Additional management actions proposed by the specialist (management actions to be considered by proponent and authority).

The impact assessment has attempted to quantify the magnitude of potential impacts (direct and cumulative effects) and outline the rationale used. Where appropriate, national standards are used as a measure of the level of impact.

The above assessment must be summarised in an impact assessment Table as below.

2.2. Assessment of Potential Impacts and Mitigation

This Chapter identifies and evaluates the actual and potential environmental consequences of the proposed activity. Furthermore, the potential for mitigation of negative impacts and enhancement of positive impacts are described. The below impacts on the biophysical, socio-economic and cultural/historical environment have been assessed based on the methodology provided in Section 2.1 above. For each impact assessed, mitigation measures have been proposed to reduce or avoid negative impacts and enhance positive impacts. These mitigations were also incorporated in the EMPr to ensure that they are implemented during the various phases of the proposed project.

2.2.1. Summary of Impacts to Assessed

The following impacts were identified as potentially significant:

Table 16: Potential Significant Impacts

Aspect	Potential Impacts	
	Construction Phase	Operational Phase
Air Emissions	<ul style="list-style-type: none"> • Generation of dust from site clearance and construction activities. • Engine emissions from construction Vehicles. 	<ul style="list-style-type: none"> • N/A
Terrestrial Fauna and Flora	<ul style="list-style-type: none"> • Fringe impacts arising from construction phase with vegetation clearance 	<ul style="list-style-type: none"> • N/A
Aquatic Ecosystems: Watercourses	<ul style="list-style-type: none"> • There are no aquatic ecosystems on site that would be affected by the proposed project. The nearest river is approximately 600m away from the boundaries of the development. 	
Land use and Soils	<ul style="list-style-type: none"> • It should be noted that the site is currently used for grazing land, and is adjacent to existing Eskom Substation and a Wind Farm. 	
Heritage Resources	<ul style="list-style-type: none"> • The field survey did not identify any heritage resources of significance within the study area. 	
Visual Impact	<ul style="list-style-type: none"> • Visual intrusion during construction. 	<ul style="list-style-type: none"> • Visual intrusion of infrastructure. • Effect of lighting at night on dark skies
Noise	<ul style="list-style-type: none"> • Noise and vibration from construction traffic along main transport/access routes. 	<ul style="list-style-type: none"> • N/A
Traffic Impacts	<ul style="list-style-type: none"> • Increase in traffic associated with delivery vehicles for the BESS and solar PV infrastructure • Accidents with pedestrians, animals and other drivers on the surrounding tarred/gravel roads • Change in quality of surface condition of the roads. 	<ul style="list-style-type: none"> • N/A
Cumulative Impacts	<ul style="list-style-type: none"> • Cumulative impacts associated with the proposed project, will primarily be related to the temporary increase in delivery trucks. All other construction impacts will remain the same / minimal increase. 	<ul style="list-style-type: none"> • Increase in renewable electricity supply in the area.

2.2.2. BIO-PHYSICAL AND SOCIO-ECONOMIC IMPACTS ASSESSMENT

2.2.2.1. Air Emission

Generally, construction and decommissioning activities generate dust. The emission of particulates into the atmosphere is through vehicle dust entrainment, excavation, ground levelling, etc. The main environmental problem with dust that is generated from these activities is that it settles on surrounding properties and land which is often more of a nuisance problem than a health issue. The dust is generally coarse, but may include fine respirable particles (PM10) and these are known to be a risk to human health.

Exhaust emissions from construction vehicles and equipment typically include particulates (including PM10), carbon monoxide (CO), nitrogen oxides (NO_x), and sulphur dioxide (SO₂). The construction and decommissioning activities are typically short lived and the pollutants are released close to ground level with little or no buoyancy which limits their dispersion and the potential impacts to the site.

Table 17: Impact Significance of Air Emission

Theme	Air Quality		
	Construction Phase	Operation Phase	Decommissioning Phase
Phases	Construction Phase	Operation Phase	Decommissioning Phase
Nature and Status of Impact.	Generation of dust from site clearance and construction activities. Engine emissions from construction vehicles.	None	Generation of dust from site clearance and construction activities.
Extent	Local (2)		Local (2)
Duration	Medium Term (1)		Medium Term (1)
Intensity	Low-Medium (3)		Low-Medium (3)
Probability	Definite (5)		Definite (5)
Confidence	High		
Level of Significance before mitigation (Inherent risk)	(2+1+3)*5= 30		(2+1+3)*5= 30
	Medium - low (-)		Medium - Low (-)
Reversibility	High		High
Irreplaceability	Replaceable		Replaceable
Mitigation Measures	Construction Phase		Decommissioning Phase
	Covering of vehicle loads;		Same as construction phase.

	Loading and unloading materials in wind-sheltered areas; Speed restrictions on site; Spraying of roads to minimise dust; Maintenance of vehicles and equipment.		
Level of Significance with Mitigation (Residual risks)	Low		Low

2.2.2.2. Terrestrial Fauna and Flora

The potential impacts of the proposed project activities are medium-level negative impacts on the natural environment due to the footprint of the proposed development being on an area of natural but degraded vegetation. The study area is not situated within any 'high sensitivity' habitats present. There are no watercourses that will be affected by the proposed Project. The impact is rated as Medium without mitigation and Medium-Low with mitigation.

Table 18: Impact Significance of Terrestrial Fauna and Flora

Theme	Terrestrial Fauna and Flora		
Phases	Construction Phase	Operation Phase	Decommissioning Phase
Nature and Status of Impact.	<ul style="list-style-type: none"> Loss of natural vegetation Loss or impact on wildlife Fringe impacts arising from construction phase 	<ul style="list-style-type: none"> Operational impacts on fauna (noise emissions emanating from the site) 	<ul style="list-style-type: none"> Decommissioning will leave the site vulnerable to erosion Decommissioning will leave the site vulnerable to alien plant invasion
Extent	Site(1)	Site (1)	Site (1)
Duration	Long Term (3)	Long Term (3)	Long Term (3)
Intensity	Medium (3)	Low-Medium (3)	Low (3)
Probability	Definite (5)	Definite (5)	Possible (5)
Confidence	High		
Level of Significance before mitigation (Inherent risk)	$(1+3+3)*5= 35$	$(1+3+3)*5= 35$	$(1+3+3)*5= 35$
	Medium Low (-)	Medium Low (-)	Medium Low (-)
Reversibility	Moderate	Moderate	Moderate
Irreplaceability	Low	Low	Low
Mitigation Measures	Construction Phase	Operational Phase	Decommissioning Phase
	<ul style="list-style-type: none"> Any temporary storage, lay-down areas or accommodation facilities to be setup in existing disturbed areas (as far as 	<ul style="list-style-type: none"> Care must be taken not to interact directly with any wild life encountered. Any bird nests encountered in the vegetation or under the solar 	<ul style="list-style-type: none"> Revegetation of cleared areas with monitoring and follow-up to ensure that rehabilitation is successful. Monitoring and rehabilitation must continue until

	<p>possible) and within the study area.</p> <ul style="list-style-type: none"> • Ensure a small footprint during construction phase. • No buffer zones or 'no-go' zones are required. However, no removed topsoil, rocks, vegetation, etc. may be dumped in open land outside of the study area. Removed topsoil and sand may be used to repair gravel roads in the area and access roads, but relevant permission must first be obtained from landowners. • Temporary site offices and lay-down areas must be setup within the study area. • All excess materials and equipment brought onto site must be removed after construction, unless properly stored in a fenced off storage area for future use or for use as spares. • All hazardous materials must be stored appropriately to prevent these contaminants from entering the water environment (in this case mostly groundwater). 	<p>panels must not be interfered with. If encountered must first be discussed with the ECO.</p> <ul style="list-style-type: none"> • Any potentially dangerous fauna such as snakes or fauna threatened by the maintenance and operational activities should be removed to a safe location. 	<p>such time as the benchmark has been attained. It is suggested that 40% of the natural vegetation for the affected habitat type represents a useful goal for rehabilitation.</p> <ul style="list-style-type: none"> • Alien management plan to be implemented during the decommissioning phase of the development, which makes provision for regular alien clearing and monitoring for up to 5 years after decommissioning.
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	<ul style="list-style-type: none"> • All areas disturbed during the construction phase must be corrected and cleaned up, and ground / soils re-contoured to blend in with the original contours and lines of undisturbed and undeveloped adjacent areas. • A basic, standard rehabilitation plan for the project is required prior to construction. • Site specific stormwater management plan is required, which should form part of the initial engineering / layout plans of the project prior to construction. As part of the plan all attempts must be made to keep the flow / movement of surface stormwater as free and natural as possible. The erosion potential for the site is very low due to the flatness of the area and basic stormwater management is all that is required. 		
<p>Level of Significance with Mitigation (Residual risks)</p>	<p>Medium - Low</p>	<p>Low</p>	<p>Low</p>

Table 19: Impact Significance on Avifauna

Theme	Impacts on Avifauna		
Phases	Construction Phase	Operation Phase	Decommissioning Phase
Nature and Status of Impact.	<ul style="list-style-type: none"> Loss of habitat Displacement of priority species: Construction disturbances Electrocution of priority species 	<ul style="list-style-type: none"> Displacement of priority species 	<ul style="list-style-type: none"> Displacement of priority species
Extent	Site(1)	Site (1)	Site (1)
Duration	Long Term (3)	Long Term (3)	Long Term (3)
Intensity	Medium (3)	Low-Medium (3)	Low (3)
Probability	Definite (5)	Definite (5)	Possible (5)
Confidence	High		
Level of Significance before mitigation (Inherent risk)	$(1+3+3)*5= 35$	$(1+3+3)*5= 35$	$(1+3+3)*5= 35$
	Medium Low (-)	Medium Low (-)	Medium Low (-)
Reversibility	Moderate	Moderate	Moderate
Irreplaceability	Low	Low	Low
Mitigation Measures	Construction Phase	Operational Phase	Decommissioning Phase
	<ul style="list-style-type: none"> A potential mitigating measure is to either clear and prepare the site before the main breeding season starts and if not, the timeous identification of nests to avoid disturbance during the critical breeding cycle. In practice this is difficult but a continual monitoring of the site by the Contractor and ECO is therefore important. Any active nests identified must be clearly marked 	<ul style="list-style-type: none"> Care must be taken not to interact directly with any wild life encountered. Any bird nests encountered in the vegetation or under the solar panels must not be interfered with. If encountered must first be discussed with the ECO. 	<ul style="list-style-type: none"> Revegetation of cleared areas with monitoring and follow-up to ensure that rehabilitation is successful. Monitoring and rehabilitation must continue until such time as the benchmark has been attained. It is suggested that 40% of the natural vegetation for the affected habitat type represents a useful goal for rehabilitation. Alien management plan to be implemented during the

	<p>and a bird specialist immediately contacted as how to proceed.</p> <ul style="list-style-type: none"> • The actual project footprint must be kept as small as possible. Access to the remainder of the site, and especially north near the river should be strictly controlled and limited to avoid general disturbance of priority birds and birds in general. • Displacement due to habitat loss is difficult to fully mitigate against. Once again, removal of vegetation must be kept to a minimum. Even alien trees growing in the area must first be carefully checked for large bird nests of priority birds and if present must be clearly marked and cordoned off until a bird specialist is contacted to advise on how to proceed. • Under no circumstances may active bird nests be interfered with or destroyed. A bird specialist must first and quickly contacted to advise on how to proceed. The procedure might very likely be cordoning off the nest until youngsters have fledged and the nest is empty. 		<p>decommissioning phase of the development, which makes provision for regular alien clearing and monitoring for up 5 years after decommissioning.</p>
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	<ul style="list-style-type: none"> • Depending on the final line designs and distances it is likely that some bird flight diverters (BFDs) will be recommended. These must be installed along the full length of the earth wires and this must be done as soon as conductors are strung. • Construction of new access roads should be kept to a minimum. Preferably no access roads to come in from the north, near the river. Existing access roads must be used. 		
<p>Level of Significance with Mitigation (Residual risks)</p>	<p>Low</p>	<p>Low</p>	<p>Low</p>

2.2.2.3. Land use and Soils

The project site has previously being affected by the construction of the existing substation and associated infrastructure. Limited livestock farming is being practiced on the site with cattle grazing. The entire operation takes place within the context of a presently underutilized farm adjacent to substation area. The site is currently underutilized as a farm and managed sub-par from an agricultural point of view. Therefore the loss of agricultural land during the construction and operational phase is **not significant**.

2.2.2.4. Heritage Resources

The main cause of impacts to archaeological sites is direct, physical disturbance of the archaeological remains themselves and their contexts. It is important to note that the heritage and scientific potential of an archaeological site is highly dependent on its geological and spatial context. This means that even though, for example, a deep excavation may expose buried archaeological sites and artefacts, the artefacts are relatively meaningless once removed from their original position.

The field survey did not identify any graves within the study area or any other heritage resources of significance, and therefore this impact is rated as **not-significant**.

2.2.2.5. Landscape and Visual Aspects

Potential Impacts:

- Impact on landscape character and sense of place
 - *This impact is a change in the landscape character and sense of place of the study area through the addition of industrial-type infrastructure. The proposed development will add to the industrial components in the landscape, resulting in negative changes to the landscape character and sense of place.*
- Impact on visual intrusion and Visual absorption capacity
 - *The level of compatibility and the ability of the landscape to visually absorb the proposed infrastructure, including contrasts in form, line, colour, and texture resulting from vegetation clearing.*
- Visual exposure and visibility
 - *The visibility and presence of the cleared PV facility associated infrastructure, and transmission lines and the potential solar reflection of the PV panels.*

Proposed Mitigation Measures:

- Minimise or eliminate large scale vegetation clearance for the proposed plant. This may be achieved either by limiting the width of strips that are cleared for each row of PV panels and leaving natural vegetation between these rows, or by only removing vegetation directly around each PV panel support foundation or driving the support poles directly into the ground (if this is technically feasible) without any vegetation removal. Vegetation growth will be less vigorous than under natural conditions if these recommendations are followed but will nonetheless reduce the contrast and landscape impact.
- After the construction phase, the areas disturbed that are not earmarked for operational purposes (part of infrastructure footprint) must be suitably rehabilitated with fynbos vegetation. The planting of trees and shrubs for screening is not recommended since the fynbos in this area is naturally devoid of trees and shrubs over half a meter tall. Establishment of tree and shrub screens in this area would be an additional source of contrast with the natural landscape.
- Avoid the complete removal of vegetation beneath the solar collector arrays, if vegetation can safely be left beneath the array and does not interfere with facility construction, operation, or maintenance. By implementing this measure colour contrasts associated with exposed or eroded soils can be reduced. Where it is not feasible to leave existing vegetation due to construction, safety, or operational concerns, post-construction revegetation should be considered, consistent with facility operations and safety considerations;
- Make use of the existing access road so that it minimizes modification of the existing topography and additional clearing of vegetation;
- Construction signage should not be obtrusive and should not be seen against the skyline;
- The Contractor shall ensure ongoing housekeeping to maintain a tidy construction area;
- Stockpile heights shall not exceed 3m (natural vegetation will still be able to screen heights lower than 3m);

- Where material laydown areas and construction camps are located adjacent to a road or other existing infrastructure where views from receptors are possible, a 50m natural vegetation (visual buffer) must be maintained between the road and the laydown area or construction camp;
- The Contractor shall not deface, paint, damage or mark any natural feature (e.g., rocks, etc.) situated on or around the site for survey or any other purposes unless agreed beforehand; and
- Maintain as much of the natural vegetation on the ground within the development footprint as practically feasible. Vegetation under solar arrays may need periodic maintenance to maintain an acceptable height and reduce fire risk.
- Install low level lighting or limit mounting heights of lighting fixtures by utilising footlight or bollard level lights. The use of high light masts and high pole top security lighting should be avoided along the security fence of infrastructure areas. Any high-level masts should be covered to reduce glow and light spillage

Based on the identified impacts and proposed mitigation measures, the Visual impacts associated with the proposed project is rated as having a **low significance**.

2.2.2.6. Noise Pollution

Activity which generates noise during the construction, operation and decommissioning phases of the project will result in an increase in ambient noise levels within the local area. The impacts of the increase in noise will depend on the level of increase.

Table 20: Impact on Noise Pollution

Theme	Noise Pollution		
Phases	Construction Phase	Operation Phase	Decommissioning Phase
Nature and Status of Impact.	<ul style="list-style-type: none"> • Generation of noise from construction of solar PV Park and Battery Energy Storage System may have an impact on sensitive receptors. • Noise and vibration from construction traffic along main transport/access routes. 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Noise and vibration from construction traffic along main transport/access routes.
Extent	Site(1)		Site (1)
Duration	Long Term (3)		Long Term (3)
Intensity	Low (2)		Low (2)
Probability	Definite (5)		Possible (4)
Confidence	High		
Level of Significance before mitigation (Inherent risk)	$(1+3+2)*5=30$		$(1+3+2)*4=24$
	Medium Low (-)		Low (-)
Reversibility	Moderate		High
Irreplaceability	Low		Low
Mitigation Measures	Construction Phase		Decommissioning Phase
	<ul style="list-style-type: none"> • Construction camps, mobile equipment storage yards and other noisy fixed facilities should be located away from the Portion 		<ul style="list-style-type: none"> • Construction camps, mobile equipment storage yards and other noisy fixed facilities should be located away from the Portion

	<p>boundaries to reduce the noise emission levels leaving the sites</p> <ul style="list-style-type: none"> All construction vehicles and equipment are to be kept in good repair to reduce operational noise levels 		<p>boundaries to reduce the noise emission levels leaving the sites</p> <ul style="list-style-type: none"> All construction vehicles and equipment are to be kept in good repair to reduce operational noise levels
Level of Significance with Mitigation (Residual risks)	Low	Low	Low

2.2.2.7. Social Baseline, Economy and Employment

It is envisaged that the establishment of the solar PV Park and associated infrastructure will have a significant impact on the receiving socio economic environment in terms of employment opportunities.

Table 21: Social Baseline, Economy and Employment

Theme	Socio-Economic
Phases	Construction Phase
Nature and Status of Impact.	Creation of employment opportunities
Extent	Regional (3)
Duration	Short Term (1)
Intensity	Moderate (3)
Probability	Possible (4)
Confidence	High
Level of Significance before mitigation (Inherent risk)	$(3+1+3)*4=28$
	Low (+)
Reversibility	High
Irreplaceability	Low
Mitigation Measures	<p>To enhance the potential positive impact associated with the creation of temporary employment opportunities during the construction phase, the following measures should be implemented:</p> <ul style="list-style-type: none"> • To the extent possible, the Applicant and any contractors appointed to undertake construction related activities should prioritize employment of local people from Humansdorp, particularly for semi and low-skilled job categories. • Employment of black people, women and youth should be prioritized. • Where feasible, training and on-job skills development programmes for temporary employees should be implemented during the construction phase. • Where feasible, efforts should be made to employ local contractors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria. • Recruitment and employment practices must be aligned with prevailing labour legislation in South Africa. • Vacancies should be advertised in the local media when they become available.

	<ul style="list-style-type: none">• Procurement spend should priorities black, female and youth owned local companies to the extent possible.
Level of Significance with Mitigation (Residual risks)	Medium-High (+)

2.2.2.8. Traffic and Road Network

The proposed development will require delivery trucks to drop off the solar PV panels and BESS. This equipment comes in containerized modular forms and thus requires minimal assembly. It is envisaged that a short term increase in traffic on the local roads surrounding the site will continue until construction is completed.

Table 22: Impact on Traffic and Road Network

Theme	Traffic and Road Network		
Phases	Construction Phase	Operation Phase	Decommissioning Phase
Nature and Status of Impact.	<ul style="list-style-type: none"> Increase in traffic associated with delivery vehicles for the BESS and solar PV panels Accidents with pedestrians, animals and other drivers on the surrounding tarred/gravel roads Change in quality of surface condition of the roads. 	<ul style="list-style-type: none"> No Impact as there will not be additional staff hired beyond security personnel. 	<ul style="list-style-type: none"> Increase in traffic. Accidents with pedestrians, animals and other drivers on the surrounding tarred/gravel roads Impact on air quality due to dust generation, noise and release of air pollutants from vehicles and construction equipment. Change in quality of surface condition of the roads
Extent	Local (2)	-	Local (2)
Duration	Short-term (2)	-	Short-term (2)
Intensity	Low (1)	-	Low (1)
Probability	Probable (3)	-	Probable (3)
Level of Significance before mitigation (Inherent risk)	$(2+2+1)*3= 15$	-	$(2+2+1)*3= 15$
	Low (-)	-	Low (-)
Reversibility	Moderate	-	Moderate
Irreplaceability	Low	-	Low
Mitigation Measures	Construction Phase		Decommissioning Phase
	<ul style="list-style-type: none"> Appropriate warning traffic signs, in accordance with the South African Road Traffic Signs Manual, should be erected to protect road users on the approaches to the sharp curves and the access road junction. Temporary signs should be erected on the approaches to the access road junction warning motorists of heavy vehicle traffic during the construction phase. 		

	<ul style="list-style-type: none"> Any maintenance of the access roads required due to the construction phase, must be collectively implemented by the applicant and the local municipality traffic department. 			
Level of Significance with Mitigation (Residual risks)	Low		Low	

3. CLIMATE CHANGE ASSESSMENT

Climate change issues must be considered as part of the EIA process Please consider the Climate Change guideline. EAP must determine:

- a)The potential impact of climate change on society and the economy, whether the impact is negative or positive, considering that society needs to be at the centre of the proposed development;
- b)The potential alternatives of the proposed development, alternatives that will have less impact on climate change (environment and generation of waste included), the society and economy;
- c)whether, and to what extent, the proposed development will result in the release of greenhouse gas (GHG) emissions;
- d)whether the proposed development is necessary to achieve long term decarbonisation goals;
- e)the impact of the development on social, economic, natural and built environment that are crucial for climate change, adaptation and resilience;
- f) the projected impact of climate change on proposed development; and surrounding environment, and implications for the development.
- g)Explanation of how the impacts is likely to be exacerbated or minimised as result of climate change and what measures are likely to be implemented to accommodate and manage (adapt to) the anticipated worst scenario where applicable
- h) whether, and to what extent, the impacts identified in (a) -(g) can be mitigated.

Given that the proposed project is for the generation of electricity from renewable sources, the project by definition has a positive impact on climate change.

4. ENVIRONMENTAL IMPACT STATEMENT

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

The following environmental impact statement constitutes the EAP's reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation. The proposed project will be developed in compliance with the requirements of the Constitution of the Republic of South Africa, 1996 (Act No.108 of 1996) which provides the legal framework for the regulation of environmental management activities in South Africa, especially Section 24 which states that the people of South Africa have the right to an environment that is not harmful to their health or well-being, and makes it the duty of the State to regulate ecologically sustainable infrastructure development and use of natural resources while promoting justifiable economic and social development. The applicant must comply with the principles contained in section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended (NEMA), which, amongst other things, indicates that environmental management should aim to avoid, minimise or remedy disturbance of ecosystems and loss of biodiversity, especially:

- Avoid degradation of the environment;
- Avoid jeopardising ecosystem integrity;
- Pursue the best practicable environmental option by means of integrated environmental management;
- Protect the environment as the people's common heritage;
- Control and minimise environmental damage; and

- Pay specific attention to management and planning procedures pertaining to sensitive, vulnerable, highly dynamic or stressed ecosystems.

Alternative A (preferred alternative)

The project is the proposed construction and establishment of a 19.8MW Solar PV farm and Battery Energy Storage System (BESS) near Humansdorp in the Kouga Local Municipality of the Sarah Baartman District Municipality, Eastern Cape Province. The site is approximately 19,8ha and will contain the solar PV panels, BESS, a 66/22kV Substation and a short 66kV Power Line connection to the adjacent Melkhout Switching Station.

The table below summarizes the potential residual risk associated with the planned development.

Table 23: Residual Risk Summary

Impact theme	Construction Phase	Operational Phase	Decommissioning Phase
Air Emissions	Low	N/A	Low
Terrestrial Fauna & flora	Medium - Low	Low	Low
Avifauna	Low	Low	Low
Land Use and Soils	Low	Low	Low
Heritage Resources	The field survey did not identify any heritage resources of significance.		
Landscape and Visual Aspect	Low	Low	Low
Noise Pollution	Low	Low	Low
Social aspects	It is envisaged that the establishment of the solar PV Park and associated infrastructure will have a significant impact on the receiving socio economic environment in terms of employment opportunities (Medium-High +).		
Traffic	Low	N/A	Low
Cumulative Impacts	Cumulative impacts associated with the proposed project will primarily be related to the temporary increase in delivery trucks, and electricity generation and distribution activities within the area.	The Cumulative impact associated with the project and surrounding area relate to the generation of renewable electricity.	Cumulative impacts associated with the proposed project, will primarily be related to the temporary increase in delivery trucks. All other decommissioning impacts will remain the same / minimal increase.

No-go alternative (compulsory)

The no-go alternative represents the option of not undertaking the proposed activity or any of its alternatives. It provides the baseline against which the predicted impacts and risks can be assessed. Although the no-go alternative would not result in any environmental impacts on the site or surrounding area, it would also not bring any positive impact to the local area in terms of electricity security, socio-economic benefits, job creation and skills development. The local area will not benefit from economic benefits. The no-go alternative will not

contribute to national renewable energy development targets and policy imperatives, as well as energy supply stability and security to the benefit of local residential electricity consumers as well as farmers and businesses. Although the predicted negative impacts of the proposed activities (e.g. vegetation clearance, disturbance of habitat, noise and dust generation, etc) would not occur on the proposed site, the no-go alternative may result in other and less environmentally friendly land uses to be developed on the site.

SECTION E. RECOMMENDATIONS OF PRACTITIONER

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

YES	
YES	

Is an EMPr attached?

The EMPr must be attached as Appendix F.

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

N/A

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

As shown within the Basic Assessment Report, the proposed project will have minimal environmental impacts which should be manageable through good design practices and following all environmental recommendations made in the sections above and in the EMPr. Although all foreseeable actions and potential mitigations or management actions are contained in the EMPr, the document should be considered as a day-to-day management document which can be adjusted as and when required. Major changes should however be communicated to the authorities. The current EMPr thus sets out the environmental standards that are required to minimise the negative impacts and maximize the positive benefits of the local community. An EMPr is a “live document” and its continuous review and correct management will definitely result to the successful construction and operation of the proposed development. Based on the impact assessment conducted, it is the EAP’s opinion that the proposed development be authorised with the inclusion of the following conditions:

- The EMPr is a legally binding document and must be adhered too at all times.
- The monitoring of the construction site must be carried out by a qualified Environmental Compliance Officer (ECO) with proven expertise in the field so as to ensure compliance to the Environmental Management Programme (EMPr).
- All mitigation measures listed in the BAR as well as the EMPr must be implemented and adhered to.

SECTION F: APPENDICES

The following appendixes must be attached as appropriate:

Appendix A: EAP qualifications

Appendix B: Photographs

Appendix C: Facility illustration(s) & site plans

Appendix D: Specialist reports

Appendix E: Public Participation information

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information