GEORGE



TEL: +27 (0) 44 873 4923 FAX: +27 (0) 44 874 5953 EMAIL: info@sescc.net WEBSITE: www.sescc.net ADDRESS: Unit 17 Cathedral Square, Cathedral Street, George, 6530 PO BOX: 9087, George, 6530

CAPE TOWN

TEL: +27 (0) 21 554 5195 FAX: +27 (0) 86 575 2869 EMAIL: betsy@sescc.net WEBSITE: www.sescc.net ADDRESS: Tableview, Cape Town, 7441 PO BOX: 443, Milnerton, 7435

SITE SENSITIVITY VERIFICATION REPORT

FOR THE

PROPOSED PV SOLAR PLANT & BATTERY ENERGY

STORAGE SYSTEMS

FOR

GROOT BRAK WASTEWATER TREATMENT WORKS, SANDHOOGTE AND KLEIN BRAK WATER TREATMENT WORKS LOCATED ON PORTION 23 OF THE FARM WOLVEDANS 129, GROOT BRAK RIVIER, MOSSEL BAY LOCAL MUNICIPALITY, GARDEN ROUTE, WESTERN CAPE.



| APPLICANT: | ELEMENT CONSULTING ENGINEERS ON BEHALF OF MOSSEL BAY | |
|-----------------------------|--|--|
| | LOCAL MUNICPLAITY | |
| ENVIRONMENTAL CONSULTANT: | SHARPLES ENVIRONMENTAL SERVICES CC | |
| | AUTHOR: JESSICA GOSSMAN (EAPASA #6154) | |
| | Overseeing eap: betsy ditcham (eapasa #1480) | |
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GLOSSARY OF TERMS

| Activity: | An activity or operation carried out as part of the construction or | | | | | |
|----------------------------|--|--|--|--|--|--|
| | operation of the housing development and associated | | | | | |
| Anthropogenic | Impacts originating in human activity e.g. pollution mining | | | | | |
| impacts: | destruction of vegetation etc | | | | | |
| Biodiversity: | The diversity, or variety, of plants, animals and other living things in a | | | | | |
| | particular area or region. It encompasses habitat diversity, species | | | | | |
| | diversity and genetic diversity. | | | | | |
| Community: | Those people who may be impacted upon by the construction and | | | | | |
| | operation of the project. This includes neighbouring landowners | | | | | |
| | local communities and other occasional users of the area. | | | | | |
| Competent Authority | The decision-making authority responsible for evaluating the viability | | | | | |
| | of the proposal and issuing the appropriate Authorisation. Also see | | | | | |
| | Department of Forestry, Fisheries and Environment. | | | | | |
| Consultation: | A process for the exchange of views, concerns and proposals about | | | | | |
| | a proposed project through meaningful discussions and the open | | | | | |
| | sharing of information. | | | | | |
| Construction Phase: | The stage of project development comprising site preparation as | | | | | |
| | well as all construction activities associated with the development. | | | | | |
| Cumulative Impact: | The impact of an activity that by itself may not be significant but | | | | | |
| | combined with other existing and potential tuture impacts may be | | | | | |
| Demendence and st | significant. | | | | | |
| Department of | Inis Department is responsible for evaluating the viability of the | | | | | |
| environmental Attairs | development proposal and issuing the appropriate Authorisation. | | | | | |
| Planning: | | | | | | |
| Fcology: | The study of the interrolationships of organisms with and within their | | | | | |
| | environment | | | | | |
| Ecosystem: | The interconnected assemblage of all species populations that | | | | | |
| | occupy a given area and the physical environment with which they | | | | | |
| | interact. | | | | | |
| Endemic / | Found only within the study area / tendency of being found only in | | | | | |
| Endemism: | the study area. | | | | | |
| Environment: | The surroundings within which humans exist and that are made up | | | | | |
| | of | | | | | |
| | i. The land, water and atmosphere of the earth; | | | | | |
| | ii. Microorganisms, plant and animal life; | | | | | |
| | iii. Any Part or combination of (i) and (ii) and the | | | | | |
| | interrelationships among and between them; and | | | | | |
| | iv. The physical, chemical, aesthetic and cultural properties | | | | | |
| | and conditions of the foregoing that influence human health | | | | | |
| Fuer due numero a sub-sub- | and wellbeing. | | | | | |
| Environmental | ine authorisation by a competent authority of a listed activity. | | | | | |
| Aumonsation: | The person responsible for planning management and co | | | | | |
| Assessment | ardination of environmental impact assessment stratagic | | | | | |
| Practitioner (EAP): | environmental assessments environmental management plans or | | | | | |
| | environmental assessmenta, environmental management plans en | | | | | |

| | any other appropriate environmental instrument introduced through regulations |
|-----------------------|---|
| Environmental | In relation to an application to which scoping must be applied |
| Impact Assessment | means the process of collecting organizing analysing interpreting |
| (FIA). | and communicating information that is relevant to the consideration |
| | of that application. This process necessitates the compilation of an |
| | Environmental Impact Pepert, which describes the process of |
| | environmental impact report, which describes the process of |
| | the anticipated impacts and proposed mitigater magnutes |
| | A management are grammed designed an affind the introduces the |
| Environmental | A management programme designed specifically to infroduce the |
| Management | mitigation measures proposed in the Reports and contained in the |
| Programme (EMPr) | Conditions of Approval in the Authorisation. |
| Fauna: | The collective animals of a region. |
| Flora: | The collective plants growing in a geographic area. |
| Heritage resources: | A building, area, a ritual, etc. that forms part of a community's |
| | cultural legacy or tradition and is passed down from preceding |
| | generations. |
| Hydrological: | (The study of) surface water flow. |
| Impact: | A change to the existing environment, either adverse or beneficial, |
| | that is directly or indirectly due to the development of the project |
| | and its associated activities. |
| Integrated | The practice of incorporating environmental management into all |
| Environmental | stages of a project's life cycle, namely planning, design, |
| Management | implementation, management and review. |
| Interested and | Any individual, group, organization or associations which are |
| Affected Party (I&AP) | interested in or affected by an activity as well as any organ of state |
| | that may have jurisdiction over any aspect of the activity. |
| Mitigation Measures | Design or management measures that are intended to avoid and/or |
| | minimise or enhance an impact, depending on the desired effect. |
| | These measures are ideally incorporated into a design at an early |
| | stage. |
| NEMA EIA | The EIA Regulations means the regulations made under section 24(5) |
| Regulations: | of the National Environmental Management Act (Act 107 of 1998) |
| | (Government Notice No. R 324, R 325, R 326 and R 327 in the |
| | Government Gazette of 7th April 2017 refer). |
| No-go alternative: | The option of not proceeding with the activity, implying a |
| | continuation of the current situation / status quo. |
| Operational Phase: | The stage of the works following the Construction Phase, during |
| | which the development will function or be used as anticipated in |
| | the Environmental Authorisation. |
| Public Participation | A process in which potential Interested and Affected Parties are |
| Process (PPP) | given an opportunity to comment on, or raise issues relevant to, |
| | specific matters. |
| Red Data List: | Species of plants and animals that because of their rarity and/or |
| | level of endemism are included on a Red Data List (usually compiled |
| | by the International Union for Conservation of Nature (IUCN)) which |
| | provides an indication of their threat of extinction and |
| | recommendations for their protection. |

| Registered Interested and Affected Party: | All persons who, as a consequence of the Public Participation Process conducted in respect of an application, have submitted written comments or attended meeting with the applicant or environmental assessment practitioner (EAP); all persons who have requested the applicant or the EAP in writing, for their names to be placed on the register and all organs of state which have jurisdiction in respect of the activity to which the application relates. |
|--|--|
| Species of | Species of Conservation Concern (SCC) that have either been |
| Conservation | highlighted as species of concern through the National Web-Based |
| Concern | Environmental Screening Tool, or a species that has been identified |
| | as being recognised as in danger and in need of protection in terms of the IUCN (International Union for Conservation) Red List |
| Site Ecological | Site Ecological Importance (SEI) is a function of the Biodiversity |
| Importance | Importance of the sensitive receptors within a proposed |
| | development site and its resilience to anticipated impacts. |
| Significant impact: | Means an impact that by its magnitude, duration, intensity or |
| | probability of occurrence may have a notable effect on one or |
| | more aspects of the environment. |
| Solar Exclusion Norm | Solar Exclusion Norm and Exclusion of the Development and |
| (GN 4558 of 2024) | Expansion of Solar Photovoltaic Facilities from the Requirement to obtain an Environmental authorisation (GN 4558 of March 2024) |
| Specialist Study | A study into a particular aspect of the environment, undertaken by |
| | an expert in that discipline. |
| Stakeholders: | All parties affected by and/or able to influence a project, often |
| | those in a position of authority and/or representing others. |
| Sustainable | Development that meets the needs of the present generation |
| Development: | without compromising the ability of future generations to meet their |
| | own needs. NEMA defines sustainable development as the |
| | integration of social, economic and environmental factors into |
| | planning, implementation and decision-making so as to ensure that |
| | development serves present and future generations. |

ABBREVIATIONS

| BA | Basic Assessment |
|---------|---|
| BAR | Basic Assessment Report |
| BEE | Black Economic Empowerment |
| BNG | Breaking New Ground |
| CA | Competent Authority |
| CBA | Critical Biodiversity Area |
| CR | Critically Endangered |
| DFFE | Department of Forestry, Fisheries and Environment |
| DWS | Department of Water and Sanitation |
| EA | Environmental Authorisation |
| EAP | Environmental Assessment Practitioner |
| ECO | Environmental Control Officer |
| EIA | Environmental Impact Assessment |
| EMF | Environmental Management Framework |
| EMPr | Environmental Management Programme |
| EN | Endangered |
| ESA | Ecological Support Area |
| HWC | Heritage Western Cape |
| I&AP | Interested and Affected Party |
| IDP | Integrated Development Plan |
| NEMA | National Environmental Management Act (Act No. 107 of 1998) |
| NEM:BA | National Environmental Management: Biodiversity Act (Act No. 10 of 2004) |
| NEM:PAA | National Environmental Management: Protected Areas Act (Act No. 57 of 2003) |
| NEM:WA | National Environmental Management: Waste Act (Act No. 59 of 2008) |
| NHRA | National Heritage Resources Act (Act No. 25 of 1999) |
| NWA | National Water Act (Act No. 36 of 1998) |
| PPP | Public Participation Process |
| SA | South Africa |
| SANS | South African National Standard |
| SDF | Spatial Development Framework |
| SES | Sharples Environmental Services cc |
| VU | Vulnerable |
| WCPSDF | Western Cape Provincial Spatial Development Framework |
| WTW | Water Treatment Works |
| WWTW | Waste Water Treatment Works |

COMPLIANCE IN TERMS OF THE SOLAR NORMS

Sharples Environmental Services cc has been appointed by Element Consulting to oversee the environmental processes associated with the abovementioned project. As per Condition 2.4 of the Solar Exclusion Norm and Exclusion of the Development and Expansion of Solar Photovoltaic Facilities from the Requirement to obtain an Environmental Authorisation (GN 4558 of March 2024) (Thereafter Referred to as the Solar Exclusion Norm), below, isa comprehensive list of the objectives, along with the corresponding section numbers in this report for easy of navigation. Apart of the Solar Exclusion Norm requirements, the proposed project is required to follow the Site Sensitivity Verification Report process and the criteria that needs to be met are as follows within the required document location.

"2.1. the activities contemplated in paragraph 3 of this Norm are excluded from the requirements to obtain an environmental authorisation when undertaken in compliance with the requirements contemplated in this paragraph as well as paragraphs 4,5 and 6, read with paragraph 7 or 8 of this Norm-" No. REQUIRMENT SECTION IN THE REPORT: Project Description Page 15 activities have not yet been commenced 1. The required theme has been assessed: 1. Plant species Plant Species Page 49 2 Animal and Avian species 3. 2. Animal species themes Page 31 3.Terrestrial biodiversity Terrestrial Biodiversity page 60 4. Aquatic Biodiversity page 45 5. 4. Aquatic biodiversity 5. Agriculture 6. Agriculture page 29 With the exception of linear infrastructure which forms an integral part of SUMMARY OF SPECIALIST a solar photovoltaic facility, which is located in a pre-negotiated **STUDIES Page 77** corridor, which may be located in areas of "very high", "high", "medium" or "low" environmental sensitivity on condition that the requirements contained in paragraph 2.2 are complied with. Mitigation Hierarchy page 13 Mitigation hierarchy has been applied to the pre-negotiated corridor 8. SUMMARY OF SPECIALIST 9. The proposed pre-negotiated corridor avoids areas of "very high or "high" sensitivity STUDIES page 77 The relevant specialists identify areas within the corridor in which 10. No-Go Alternative page 79 development is not permitted to take place due to environmental sensitivity and such areas are avoided The exception of linear infrastructure contemplated in paragraph 2.1.2(a) will only apply if the mitigation hierarchy has been applied to the pre-negotiated Mitigation Hierarchy Page 13 a) corridor b) The relevant specialists identify areas within the corridor in which No-Go Alternative page 79 And development is not permitted to take place due to environmental outlined in the EMPr sensitivity and such areas are avoided C) no plant species of conservation concern is destroyed or removed and Plant Species Page 49 no breeding areas of species of conservation concern are impacted on; confirms in the site sensitivity verification report that any remaining Error! Not a valid result for table. e) environmental impact is acceptable after avoidance and mitigation Page 15 and outlined in the EMPr. confirm in the site sensitivity verification report that the necessary No-Go Alternative page 79 and f) mitigation measures and areas where development is not permitted outlined in the EMPr. have been included 13. The corridor contemplated in this Norm is to be determined by the Error! Not a valid result for table. proponent and may not exceed 200 meters in width. page 15 14. With the exception of the requirement contemplated in paragraph N/A 2.1.1, where any of the requirements contemplated in this paragraph or paragraphs 4, 5 and 6, read with paragraphs 7 or 8, cannot be met or are not met, this exclusion does not apply and an application for an environmental authorisation must be submitted in terms of the EIA

Regulations, the Renewable Energy Development Zones Notice or the

Strategic Transmission Corridors Notice, whichever applies.

Activities

"2.1. the activities contemplated in paragraph 3 of this Norm are excluded from the requirements to obtain an environmental authorisation when undertaken in compliance with the requirements contemplated in this paragraph as well as paragraphs 4,5 and 6, read with paragraph 7 or 8 of this

| NOIT | | |
|--------|--|-------------------------------|
| NO. | REQUIRMENI | SECTION IN THE REPORT: |
| 15. | The activities which are the subject of this exclusion relate to the | N/A |
| | development or expansion of a facility for the generation of electricity | |
| | from solar photovoltaic technology, where such development or | |
| | expansion triggers- 3.1.1 Activity 1 or Activity 36 of Listing Notice 1; or | |
| | 3.1.2 Activity 1 of Listing Notice 2; and any associated activity identified | |
| - | in Listing Notice 1,2 or 3 necessary for the realisation of such facilities. | |
| 16. | Identified activities for the development or expansion of battery storage | SUMMARY OF SPECIALIST |
| | facilities, associated with and integral to the operation of the solar | STUDIES page 77 |
| | photovoltaic facility, are to be registered under this Norm and not the | |
| | Norm for the exclusion of identified activities associated with the | |
| | development and expansion of battery storage facilities in areas of low | |
| | or medium environmental sensitivity. | |
| Site S | ensitivity Verification | |
| 17. | Where possible, land which has already been modified should be | Project Description – Page 15 |
| | considered for the location of the proposed facility and the | |
| | consideration of such land for the location of the proposed facility must | |
| | be discussed in the site sensitivity verification report. | |
| a) | It is advised that a buffer is identified around the footprint to allow for | Project Description – Page 15 |
| | slight adjustments without the need to resubmit the request for | |
| | registration contemplated in this Norm | |
| b) | which buffer— | |
| | must be clearly indicated | |
| | must envelope the footprint; and | Summary of the specialist |
| | must be subjected to the site sensitivity verification requirements of | studies – Page 77 |
| | which the findings must confirm that it is in an area of low or medium | Ŭ |
| | environmental sensitivity. | |
| C) | proponent must ensure that a site sensitivity verification inspection is | |
| -, | undertaken for the environmental themes contemplated in paragraph | |
| | 2.1.2 to confirm whether or not the environmental sensitivity of the | |
| | footprint and corridor is as identified by the screening tool. | |
| d) | "very high" or "high" environmental sensitivity rating may be disputed by | |
| с, | the specialist provided that evidence and motivation to substantiate | |
| | such a change of environmental sensitivity is provided | |
| 18 | The site sensitivity verification must be undertaken | |
| 10. | for the environmental themes contemplated in paragraph 2.1.2 | Themes – Page 27 |
| | for the footprint as well as the proposed corridor for the linear | momos rage z/ |
| | infrastructure | |
| | by specialists, registered in the field for which they are undertaking the | |
| | site sensitivity verification and where relevant with demonstrated | |
| | experience in the taxonomic group of the species being considered: | |
| 10 | within the season which would be most relevant to identify the specific | |
| 17. | species or vegetation of interest: and | |
| 20 | for a pariad of time as necessitated by the sopritivity of the proposed site | |
| 20. | and size of the proposed facility | |
| 21 | The site consitivity verification inspection must be a physical inspection | |
| 21. | the site sensitivity vehiculation inspection most be a physical inspection, | Themes Page 27 |
| | information available, including any fine scale data available from the | memes ruge 27 |
| | provincial department responsible for the opvironment, provincial | |
| | provincial department responsible for the environment, provincial | |
| | conservation authomies, individiist records of the relevant municipality, | |
| 22 | Where additional information identified in paragraph 4 (has been used | N1/A |
| 22. | in the verification process, this information paragraph 4.6 has been used | |
| | In the vehication process, this information must be identified and | |
| 00 | Ferenced in the site sensitivity vehication report. | A eviewth we Deve - 00 |
| 23. | For the agriculture meme, the site sensitivity verification report must | Agriculture Page 29 |
| | confirm that the "allowable aevelopment limits" set for solar | |
| | photovoltaic technology on agricultural land in the Agricultural | |
| | Specialist Assessment Protocol, are not exceeded. | |
| 24. | For the plant and animal species themes, the relevant specialist must | Animal and Avian species |
| | confirm the presence, likely presence, or absence of a species of | themes – Page 31 |
| | conservation concern within the footprint and corridor identified as | Plant Species – Page 49 |
| | "medium" sensitivity by the screening tool. | |
| 25. | Should a species of conservation concern be found or have been | N/A |
| | confirmed to be likely present on the footprint, this exclusion does not | |

"2.1. the activities contemplated in paragraph 3 of this Norm are excluded from the requirements to obtain an environmental authorisation when undertaken in compliance with the requirements contemplated in this paragraph as well as paragraphs 4,5 and 6, read with paragraph 7 or 8 of this Norm "

| 110111 | | |
|--------|--|------------------------------------|
| No. | REQUIRMENT | SECTION IN THE REPORT: |
| | apply and an application for an environmental authorisation must be submitted. | |
| 26. | Should a species of conservation concern be found or have been | N/A |
| | confirmed to be likely present in the corridor, this exclusion applies under | |
| | the conditions contemplated in paragraph 2.2. | |
| 27. | The relevant specialists must consider the cumulative effects for the | Outlined in the specialist reports |
| | themes identified in paragraph 2.1.2 and provide a discussion on | |
| | possible cumulative impacts, the ability to mitigate such impacts and a | |
| | statement of environmental acceptability of any cumulative impacts | |
| | after mitigation in any report produced. | |
| 28. | Should the cumulative impact not be acceptable after mitigation this | Cumulative Impacts page 79 |
| | exclusion does not apply and an application for an environmental | |
| 20 | The relevant specialists must consider the presence and presentation of | |
| 27. | acological corridors and discuss the possible presence and preservation | STUDIES Page 77 |
| | of such ecological corridors | STODIEST Gge // |
| 30 | The outcome of the relevant site sensitivity verification must be recorded | SUMMARY OF SPECIALIST |
| 00. | by the specialist in the form of a specialist report and collated into a final | STUDIES – Page 77 |
| | site sensitivity verification report that confirms or disputes the | |
| | environmental sensitivity, as identified by the screening tool for each | |
| | environmental theme identified in paragraph 2.1.2. | |
| 31. | The specialist report must be appended to the final site sensitivity | To be updated. |
| | verification report and must be signed by the relevant specialist. | |
| 32. | The final specialist report must include verifiable evidence from the | |
| | specialist's site inspection, including as a minimum: | |
| | a map showing the specialist's GPS track in relation to the proposed | |
| | tootprint | |
| 33. | at least 4 spatially representative sample site descriptions from across the | Project Description Page 15 |
| | Inspected area that include as a minimum precise geographical | and SITE VERIFICATION: |
| | coordinates of the sample site, one in situ photograph of the sample site | Required memes page 27 |
| 34 | a map identifying any great within the corrider in which development is | To be updated |
| 54. | not permitted due to environmental sensitivity, where relevant | to be updated. |
| 35 | A final site sensitivity verification report must be prepared by a registered | CONCLUSION page 80 |
| 00. | Environmental assessment practitioner or a registered environmental | |
| | scientist and signed off by the relevant specialists, all of whom must | |
| | meet the requirements of regulation 12(1) of the EIA Regulations, read in | |
| | the context of this Norm. | |

1. Executive Summary

The Mossel Bay Local Municipality recognises the imperative of sustainable energy practices in alignment with the Exclusion Norms (GN 4558 of 2024). As part of its commitment to environmental stewardship and renewable energy advancement, the municipality has proposed for the development of a PV solar plant and battery energy storage systems to facilitate the Groot Brak Waste Water Treatment Works, Sandhoogte Water Treatment Works and Klein Brak Water Treatment Works. The solar array site is located on Portion 23 of the farm Wolvedans 129, Groot Brak Rivier, Mossel Bay Local Municipality, Western Cape.

The Solar Exclusion Norm is designed to streamline the process for the implementation of solar development projects within the municipality while ensuring adherence to environmental regulations. By exempting Solar PV facilities from the requirement of Environmental Authorisation, the EAP and relevant specialists examined the Agriculture, Aquatic Biodiversity, Animal and Plant Species, Terrestrial Biodiversity, as required in the solar exclusion norms. All required themes have been deemed to be between **Medium to low sensitivity** and **low after mitigation.** Sharples Environmental Services cc have further examined the site and have incorporated the Archaeological and Heritage theme, Civil Aviation, Defence, Landscape/Visual Impact Assessment, Palaeontology and RFI sensitivity themes. The Mossel Bay Municipality aims to facilitate the development of solar energy infrastructure, thus contributing to the transition towards a greener and more sustainable energy hybrid system. The proposed project has applied the mitigation hierarchy by evaluating potential mitigation measures in relation to the criteria of the hierarchy. The specialists have also further assessed the cumulative impacts of the development. The cumulative impact of the proposed project is determined to be of overall low significance.

The adoption of this norm underscores Mossel Bay Local Municipality's proactive approach to promoting renewable energy solutions and reducing carbon emissions. It signals a commitment to harnessing the abundant solar resources available in the region to meet energy demands while minimising environmental impact.

Furthermore, the implementation of the project is expected to stimulate economic growth and job creation through the expansion of the solar energy sector. By providing a conducive regulatory environment for solar development, the proposed adoption of the Solar Exclusion Norm by Mossel Bay Municipality represents a strategic initiative to support sustainable development, mitigate climate change, and capitalise on the economic opportunities presented by renewable energy. Through this measure, the municipality reaffirms its commitment to environmental responsibility and positions itself within the focus on sustainability and the transition towards a cleaner, more resilient energy future.

2. INTRODUCTION

Sharples Environmental Services CC (SES) has been appointed by Element Consulting Engineers, acting on behalf of the Mossel Bay Local Municipality, to conduct the Site Sensitivity Verification Report (SSVR) in preparation for the Solar Exclusion Norm and Exclusion of the Development and Expansion of Solar Photovoltaic Facilities from the Requirement to obtain an Environmental authorisation (GN 4558 of March 2024). The proposed installation aims to enhance the operational capabilities of the Mossel Bay Local Municipality through the adoption of a hybrid energy system, thereby improving energy efficiency, availability, and reliability. This will involve implementing embedded generation and energy storage solutions, including the development of a new solar PV facility and battery energy storage system.

Compliance with the Solar Exclusion Norm with these regulations is necessary to oversee the environmental processes associated with the installation of a PV Solar Plant and Battery Energy Storage Systems at Groot Brak Waste Water Treatment Works, Sandhoogte Water Treatment Works and Klein Brak Water Treatment Works.

There will also be associated infrastructure that is required for the transmission and distribution of the generated electricity. This includes the instillation of an 11 kV underground power cable extension spanning approximately 5.65 km to supply the hybrid system to the Klein Brak Water Treatment Works facility. There will be a second reticulated underground cable to the North of the proposed solar array site towards the Sandhoogte Water Treatment Works, that spans approximately 0.70 km. The designated solar array site is situated on portion 23 of the farm Wolvedans 129, in the Groot Brak Rivier area of the Mossel Bay Local Municipality, within the Garden Route District of the Western Cape.

3. Mitigation Hierarchy

During the investigative process of this proposed project both the EAP and specialists followed the proposed project In line with the mitigation hierarchy (see Figure 1). The overarching goal of this SSVR is to anticipate and provide measures that must be implemented to ensure that any environmental impact that may be associated with the development is avoided, or where such impacts cannot be avoided entirely, are minimised and mitigated appropriately. The mitigation hierarchy was considered during this SSVR planning process. And has been considered within the cumulative effects of the project in managing environmental considerations.



Figure 1. Mitigation hierarchy

| Hierarc | chy level | Description in relation to the proposal | | | | | |
|---------|------------------|--|--|--|--|--|--|
| 1 | Avoid | The proposed development will be located within low to medium sensitivity areas. According to the specialists, the anticipated impact of the proposed development will have a cumulatively low impact as the sensitive features in the landscape would be avoided. | | | | | |
| 2 | Minimise impacts | The recommended mitigation measures of the various specialists reports in addition to the mitigation measures provided in the EMPr will lead to the minimisation of the impacts of the construction phase. | | | | | |
| 3 | Rectify | The rehabilitation measures in the EMPr are provided to return the impacted areas, outside of the development footprint, back to a functional state and the developer will be responsible for rectifying any non-compliances with the conditions of the EA and EMPr. | | | | | |
| 4 | Reduce | A minimum impact approach will be followed during the construction phase of the proposed development. | | | | | |
| 5 | Offset | In June 2023, the Department of Forestry, Fisheries and Environment (DFFE) promulgated the National Biodiversity Offset Guidelines in terms of the National Environmental Management Act. 1998, as amended (Act No. 107 of 1992). Based on the National Biodiversity Offset Guidelines, 2023 (GN 3569 of 2023), an offset is required where the residual impacts are Medium or High. Based on the findings of the specialist assessments (specifically those relating to the ecosystems identified, as per the definition of the beforementioned guidelines), the proposed project is rated medium to low sensitivity overall. Therefore, based on the above, all impacts on the biodiversity component of the proposed infrastructure project can be mitigated to be lower than the threshold proposed for the threshold protect will be required for the | | | | | |
| | | proposed project. | | | | | |

4. Project Description



Figure 2. The site location for the proposed PV Solar Plant, BESS and associated infrastructure, (Google Earth, 2024).

The proposed site is located along the Sandhoogte Road, north from the N2, see Figure 2 for the locality of the proposed site and associated infrastructure. The site development plan integrates the solar array site and its supporting infrastructure in a way that is strategically positioned to ensure that all three areas requiring access to the renewable energy source.are centrally located between all the different network components that need to be integrated. This ensures optimal cable lengths as well as easy access to all equipment for operation and maintenance purposes.

The proposed project is expected to consist of two PV solar array sites (Great Brak 1.34 ha and Klein Brak 1.26 ha Installation of 2028 x 565Wp Mono-crystalline Solar Panels, which convert the solar radiation into direct current). Each of the PV Solar array sites will have a solar MV station. The proposed site has a development area of 1.55 ha for future sustainable projects that is in the northern direction of the proposed site. See image below of the proposed Solar Array Site development as well as the associated distribution infrastructure located on the Groot Brak WWTW site, Figure 3.



Figure 3. Proposed site location and associated infrastructure located on the proposed solar array site and opposite the proposed infrastructure, (Element Consulting Engineers, 2024).



Figure 4. The site locality of Groot Brak WWTW & Sandhoogte WTW localities and plot of land (Indicated in red) where the solar array site will be located on, (Google Earth, 2024).

It is important to note that the 11kV feeder, supplying the Groot Brak WWTW minisub, also feeds the Sandhoogte Booster Pump Station, via an 11kV ring-main unit, located in the same minisubstation. The Sandhoogte WTW plant is supplied via a 200kVA ground-mounted transformer (confirmed on site). The 11kV supply to this transformer is also from the Midbrak Substation, via an 11kV overhead line and two ring-main units.



Figure 5. Proposed Network Configuration (Groot Brak WWTW & Sandhoogte WTW) – (Element Consulting Engineers, 2024).

In summary, it can be concluded that the proposed re-configuration of the 11kV network at the **Sandhoogte WTW** will consist of the following:

1. The existing 200kVA ground-mounted transformer, supplying the total Sandhoogte WTW load, is supplied from the Midbrak Substation via an 11kV overhead line and the Sandhoogte Water RMU. This same supply also T's off before the transformer to supply the JJ Holiday transformer (100kVA).

2. It is recommended that the 200kVA transformer, supplying the Sandhoogte WTW, be disconnected from the current 11kV OHL and RMU supply and be supplied directly via a dedicated circuit breaker from the Renewable Energy Plant's 11kV switchboard.

3. A new section of 11kV (1x 3c x 35mm2 Cu) cable will have to be installed from the 200kVA transformer to the Circuit Breaker Feeder on the Renewable Energy Plant's 11kV switchboard. It is recommended that this section of cable be installed directly underneath the existing 11kV overhead line between Midbrak Substation and the Sandhoogte Water RMU, utilising the same servitude.

4. It is important to note that all alternative supplies to the Sandhoogte WTW transformer will have to be disconnected, in order to ensure that another point-of-utility connection is not accidentally created, which will link back to the hybrid solution's switchboard and create out-of-sync connection between sub-systems within the overall distribution network.

There is currently no back-up generators installed at the Groot Brak WWTW or Sandhoogte WTW, which means that the plants cannot be operated during power outages or interruptions and therefore relies on the retention capacity of the plant. This is not an ideal situation and could lead to environmental disasters or water shortages and hence the urgency for the implementation of this project.

Klein Brak Water Treatment Works:

Klein Brak Water Treatment is located directly south of the N2 highway and approximately 1.0km north-west of the village of Klein Brak in the Mossel Bay municipal area. Access to the facility is obtained from Heyns Street, just off the R102 road on the way to Klein Brak town.

The Klein Brak WTW does not have sufficient land available near the plant for the installation of the PV Solar panels, associated with the proposed hybrid energy solution. It is therefore recommended that the PV panels for the Klein Brak WTW plant, be installed on the same portion of land, which has been identified for the Groot Brak WWTW's PV Solar Array.

The site development plan, indicating the proposed positions for the new equipment, associated with the hybrid energy solution for this plant is indicated in the figure below (Figure 6). The main reason for the chosen positions is its central location between all of the different network components that need to be integrated. This ensures optimal cable lengths as well as easy access to all equipment for operation and maintenance purposes. Furthermore, it should be noted that sufficient free space around the plant is limited, resulting in the area being the most suitable location. This "islanded" section of land available has tarred road section all around, which allows for easy access from all directions for installation, maintenance, rigging of heavy equipment and diesel filling.



Figure 6. The proposed development for Klein Brak WTW distribution infrastructure, (Element Consulting Engineers, 2024).



Figure 7. Proposed site location of the energy distribution for Klein Brak WTW, (Element Consulting Engineers, 2024).

The proposed solar array development will need to facilitate approximately 5.65km of 11 kV cable route to connect to the Klein Brak WTW, see Figure 8 below.



Figure 8. The proposed 11 kV Cable Route for the Klein Brak distribution infrastructure, (Google Earth, 2024).

The planned cable route will cross the N2 highway, along the existing 11kV cable servitude between the Midbrak and Tergniet substations. From the Tergniet substation, it will be installed along the R102 road, to the Klein Brak WTW, where it will terminate at the new 11kV substation.

The proposed cable route will have a 2 meter working corridor to facilitate the construction of the proposed cable route. 11kV, 70mm2, Cu, PILC cable (rated 160 A [ducts], 3 MVA @11kV), which will match the full capacity rating of the MV Station to be installed for the Klein brak PV Solar solution, allowing the maximum amount of PV generation to be exported via this cable to the Klein brak WTW or into the municipal 11kV grid.

Locality center points of the proposed facilities that will benefit from the renewable Energysource:Groot Brak WWTW34° 3'29.30"S; 22°11'12.30"E.Sandhoogte WTW34° 3'12.02"S; 22°11'0.67"EKleinbrak WTW34° 4'59.87"S; 22° 8'33.24"E

5. Scope of the Exclusion

The scope of the work falls within the promulgated solar norms, considering the following factors:

1. Activities have not commenced.

2. The proposed activities are confined to areas labelled as "low" or "medium" environmental sensitivity, assessed by both a screening tool and relevant specialists, covering:

- Plant and Animal species
- Terrestrial and Aquatic Biodiversity
- Agriculture

Additionally, specialist studies have been conducted for the solar array site, included in this report as part of due diligence: 6. Archaeological/Heritage

8. Defence

9. Landscape/Visual Impact Assessment

10. Palaeontology

The following specialist studies have not been conducted but have been assessed by the EAP and comments have been included:

- 1. Civil Aviation
- 2. RFI Theme

The scope of our work aligns with the established solar norms, taking into account key considerations. No activities have commenced, indicating a commitment to thorough planning and preparation. The proposed activities are strategically confined to areas designated as "low" or "medium" environmental sensitivity, assessed through a combination of advanced screening tools and expertise from relevant specialists. While prioritising the protection of plant and animal species, terrestrial and aquatic biodiversity, and agricultural interests, we acknowledge the need for linear infrastructure integral to the solar photovoltaic facility. However, any extension into areas of varying environmental sensitivity is contingent upon strict adherence to the norm conditions. Moreover, the comprehensive due diligence includes specialist studies encompassing archaeological/heritage, landscape/visual impact assessment, palaeontology. This holistic approach ensures that our solar development project is not only environmentally responsible but also compliant with regulatory standards and conducive to sustainable progress.

6. The Screening Tool Report

An Environmental Screening Tool Report was generated using the Department of Forestry, Fisheries, and the Environment (DFFE)'s Web-based Environmental Screening Tool. The report for the solar array site was completed on March 28, 2024, while the assessment for the 11kV cable route and solar distribution infrastructure was finalised on April 3, 2024. Subsequently, on April 11, 2024, a comprehensive report was compiled. This report adheres to Regulation 16(1)(v) of the EIA Regulations of 2014, as amended (GNR No. 326 of 2017), and complies with the guidelines outlined in the National Environmental Management Act (107/1998), specifically concerning the Adoption of the Solar Exclusion Norm and the Exclusion of the Development and Expansion of Solar Photovoltaic Facilities from the Requirement to obtain Environmental Authorisation (GN 4558 of 2024).

The Site Sensitivity Verification Report (SSVR) documents the ground truthing activities conducted to validate the sensitivity ratings identified in the screening report. Additionally, it provides justification for either undertaking or forgoing specific specialist studies recommended by the screening report. These specialist studies are crucial for obtaining environmental authorisation for the proposed solar PV development.

6.1. DESCRIPTION OF THE PROPOSED ACTIVITY

The plot of land that the proposed Solar Array site is located on has an approximate extent of 14.5 ha and is zoned Agricultural One.

| No | Farm Name | Farm/ Erf | Portion | Latitude | Longitude | Property Type | 21-SG Code for the affected site |
|----|-------------------|-----------|---------|----------------|-------------------|---------------|----------------------------------|
| | | no | | | | | |
| | T | r | T | Solar Ar | ray Site | Ĩ | |
| 1 | WOLVEDANS | 129 | 0 | 34°1'42.54S | 22°11'52.59E | Farm | C0510000000012900023 |
| 2 | WOLVEDANS | 129 | 173 | 34°3'11.73S | 22°11'13.95E | Farm Portion | |
| 3 | WOLVEDANS | 129 | 23 | 34°3'21.57S | 22°11'11.37E | Farm Portion | |
| 4 | WOLVEDANS | 129 | 23 | 34°3'14.76S | 22°11'14.45E | Farm Portion | |
| 5 | WOLVEDANS | 129 | 23 | 34°3'22.38S | 22°11'11.4E | Farm Portion | |
| | | | 1 | 11kV cable Rou | te Infrastructure | | |
| 1 | LITTLE BRAK RIVER | 680 | 0 | 34°4'59.12S | 22°8'38.98E | Erven | C0510006000068000000 |
| 2 | TERGNIET | 727 | 0 | 34°3'52.97S | 22°11'12.64E | Erven | C05100090000072700000 |
| 3 | LITTLE BRAK RIVER | 928 | 0 | 34°5'0.67S | 22°9'2.07E | Erven | C0510006000092800000 |
| 4 | REEBOK | 2323 | 0 | 34°3'54.23S | 22°11'9.47E | Erven | C05100080000232300000 |
| 5 | LITTLE BRAK RIVER | 401 | 0 | 34°4'45.41S | 22°8'53.31E | Erven | C0510006000040100000 |
| 6 | LITTLE BRAK RIVER | 402 | 0 | 34°4'41.5S | 22°9'1.61E | Erven | C0510006000040200000 |
| 7 | LITTLE BRAK RIVER | 887 | 0 | 34°4'59.09S | 22°8'36.51E | Erven | |
| 8 | LITTLE BRAK RIVER | 672 | 0 | 34°4'31.42S | 22°9'35.82E | Erven | C0510006000067200000 |
| 9 | LITTLE BRAK RIVER | 401 | 0 | 34°4'46.3S | 22°8'51.71E | Erven | C05100060000040100000 |
| 10 | STEVES FANCY | 268 | 0 | 34°4'53.57S | 22°8'35.26E | Farm | C051000000026800001 |
| 11 | RHEEBOKSFONTEIN | 142 | 0 | 34°4'2.69S | 22°10'10.81E | Farm | C0510000000014200008 |
| 12 | | 331 | 0 | 34°4'4.54S | 22°10'14.91E | Farm | C0510000000033100001 |
| 13 | RHEEBOKSFONTEIN | 142 | 0 | 34°4'9.17S | 22°10'20.01E | Farm | C0510000000014200004 |
| 14 | ZANDHOOGTE | 139 | 0 | 34°3'38.94S | 22°11'23.43E | Farm | C0510000000013900000 |
| 15 | WOLVEDANS | 129 | 0 | 34°1'42.54S | 22°11'52.59E | Farm | C0510000000012900073 |
| 16 | WOLVEDANS | 129 | 115 | 34°3'47.27S | 22°11'13.96E | Farm Portion | C0510000000012900115 |
| 17 | | 331 | 1 | 34°4'4.54S | 22°10'14.91E | Farm Portion | C0510000000033100001 |
| 18 | STEVES FANCY | 268 | 1 | 34°4'53.29S | 22°8'36.24E | Farm Portion | C0510000000026800001 |
| 19 | WOLVEDANS | 129 | 40 | 34°3'36.27S | 22°11'13.13E | Farm Portion | C0510000000012900040 |
| 20 | ZANDHOOGTE | 139 | 0 | 34°3'28.69S | 22°11'22.44E | Farm Portion | C0510000000013900000 |
| 21 | RHEEBOKSFONTEIN | 142 | 14 | 34°3'52.17S | 22°10'55.79E | Farm Portion | C0510000000014200014 |

Table 2: Property Details of Proposed Development Location (as per the DFFE Screening Tool, 2023).

| No | Farm Name | Farm/ Erf | Portion | Latitude | Longitude | Property Type | 21-SG Code for the affected site | | | |
|--|-------------------|-----------|-------------|---------------------------|--------------------|----------------|----------------------------------|--|--|--|
| | | no | | | | | | | | |
| 22 | RHEEBOKSFONTEIN | 142 | 4 | 34°4'8.15S | 22°10'24.27E | Farm Portion | C0510000000014200004 | | | |
| 23 | LITTLE BRAK RIVER | 1065 | 0 | 34°4'27.04S | 22°9'29.11E | Public Place | C05100060000106500000 | | | |
| 24 | REEBOK | 1506 | 0 | 34°4'13.69S | 22°9'58.17E | Public Place | C05100080000150600000 | | | |
| 25 | REEBOK | 1701 | 0 | 34°4'18.76S | 22°9'47.03E | Public Place | C05100080000170900000 | | | |
| 26 | LITTLE BRAK RIVER | 403 | 0 | 34°4'35.06S | 22°9'11.71E | Public Place | C0510006000040300000 | | | |
| The Klein Brak solar distribution infrastructure | | | | | | | | | | |
| 1 | LITTLE BRAK RIVER | 81 | 0 | 34°5'5.79S | 22°8'36.02E | Erven | C0510006000008100000 | | | |
| 2 | LITTLE BRAK RIVER | 81 | 0 | 34°5'5.63S | 22°8'36E | Erven | | | | |
| | | | Groo | <u>t Brak solar distr</u> | ibution infrastruc | ture | | | | |
| 1 | WOLVEDANS | 129 | 0 | 34°1'42.54S | 22°11'52.59E | Farm | C0510000000012900023 | | | |
| 2 | WOLVEDANS | 129 | 40 | 34°3'36.27S | 2°11'13.13E | Farm Portion | C0510000000012900040 | | | |
| | | Northe | rn Cable Ro | ute Distribution | Infrastructure (So | andhoogte WTW) | | | | |
| 1 | WOLVEDANS | 129 | 0 | 34°1'42.54S | 22°11'52.59E | Farm | C0510000000012900171 | | | |
| 2 | | 347 | 0 | 34°3'17.27S | 22°10'53.54E | Farm | C0510000000033000001 | | | |
| 3 | | 347 | 0 | 34°3'18.21S | 22°10'54.05E | Farm Portion | | | | |
| | | | | | | | | | | |
| 4 | WOLVEDANS | 129 | 23 | 34°3'22.38S | 22°11'11.4E | Farm Portion | C0510000000012900023 | | | |
| 5 | | 330 | 1 | 34°3'20.17S | 22°10'53.45E | Farm Portion | C0510000000033000001 | | | |
| 6 | RHEEBOKSFONTEIN | 142 | 5 | 34°3'14.54S | 22°10'57.68E | Farm Portion | C0510000000014200005 | | | |
| 7 | RHEEBOKSFONTEIN | 142 | 19 | 34°3'15.87S | 22°10'55.5E | Farm Portion | C0510000000014200005 | | | |
| 8 | WOLVEDANS | 129 | 23 | 34°3'21.57S | 22°11'11.37E | Farm Portion | C0510000000012900023 | | | |

The proposed Solar Farm Development site and associated infrastructure has the potential to produce renewable energy in a sustainable manner in light of the government's power supply obstacles. In order to achieve the proposed development, the site will need to be cleared of its current fauna and flora and therefore it is required that the appropriate environmental authorisation processes will be followed by the Applicant.

The National Sector Classification Category selected to produce the DFFE Environmental Screening Tool Report, dated 28/03/2024 was:

| Solar site: S | Cable Routes 5.65 | Klein Brak: K | Groot Brak: G | Sandhoogte Cable |
|---------------|-------------------|---------------|---------------|------------------|
| | km: C | | | Route: W |

| Utilities | Electricity | Generation | Renewable | Solar | PV | Distribution | Powerline | Substation |
|----------------|-------------|------------|-----------|-------|----|--------------|-----------|------------|
| Infrastructure | | | | | | And | | |
| | | | | | | Transmission | | |
| S, C, K,G,W | S, C, K, G, | S | S | S | S | C, K, G,W | C,W | K, G |
| | W | | | | | | | |

In response to the findings of the Screening Tool Report, a site visit was conducted by the EAP and appointed specialists to verify the findings thereof.

PLEASE NOTE: Sensitive Species (SS) were identified by the DFFE Screening Tool (2024) and have been censored in this report. Due to the sensitive nature of these species, should authorities need access to this sensitive information they are required to contact the responsible EAP.

6.2. WIND AND SOLAR DEVELOPMENTS

There are nearby wind or solar developments that have been identified by the DFFE Environmental Screening Tool (2024). Within a 30 km radius of the proposed area are as follows:

| No. | EIA Reference No | Classifica | Status of | Distance(km) | | | |
|-----|----------------------|------------|-------------|--------------|--------|-------|------------|
| | | tion | application | Solar Array | 11kV | Klein | Sandhoogte |
| | | | | | Cable | Brak | 11Kv cable |
| | | | | | Route | | route |
| | | | | | 5.65km | | |
| 1 | 12/12/20/2536 | Wind | Approved | 17.1 | 11.6 | 11.4 | 17.1 |
| 2 | 12/12/20/2536/AM3 | Wind | Approved | 17.1 | 11.6 | | 23.1 |
| | | | | | | 11.4 | |
| 3 | 14/12/16/3/3/1/1292/ | Solar PV | Approved | 22.9 | 23 | 28.8 | 17.1 |
| | AM1 | | | | | | |
| 4 | 14/12/16/3/3/1/1292 | Solar PV | Approved | 22.9 | 23 | 28.8 | 17.1 |
| 5 | 12/12/20/2536/AM4 | Wind | Approved | 17.1 | | 11.4 | 23.1 |
| 6 | 12/12/20/1815/1 | Wind | Approved | _ | 23.1 | 23 | 28.5 |

6.3. ENVIRONMENTAL MANAGEMENT FRAMEWORKS

No intersections with EMF areas found by the DFFE Environmental Screening Tool (2024).

6.4. <u>RELEVANT DEVELOPMENT INCENTIVES, RESTRICTIONS, EXCLUSIONS OR PROHIBITIONS</u>

The following development incentives, restrictions, exclusions, or prohibitions apply to the proposed site and are indicated below:

- Strategic Gas Pipeline Corridors-Phase 2: Mossel Bay to Coega
- South African Conservation Areas

6.5. ENVIRONMENTAL SENSITIVITIES

Table 3 provides a summary of the environmental sensitivities that were identified by the DFFE Screening Report (2024).

Table 3: Summary of Specialist Assessments Identified

Solar Array: S

5.65 km Cable Route: C

Klein Brak: K

Sandhoogte Cable Route: W

| Theme | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------------|--------------------------|---------------------|-----------------------|--------------------|
| Agriculture Theme | | C,W | S, K | |
| Animal Species Theme | | s, c, k, w | | |
| Aquatic Biodiversity Theme | | | | S, C, K, W |
| Archaeological and Cultural | | | | S, C, K, W |
| Heritage Theme | | | | |
| Avian Theme | | | | S |
| Civil Aviation (Solar PV) | | | C, K, W | S |
| Theme | | | | |
| Defense Theme | | | | S, C, K, W |
| Landscape (Solar) Theme | S | | | |

| Theme | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--------------------------------|--------------------------|---------------------|-----------------------|--------------------|
| Paleontology Theme | S, C, W | | K | |
| Plant Species Theme | | | C, K, W | S |
| RFI Theme | | S | | |
| Terrestrial Biodiversity Theme | s, c, k, w | | | |

Only the highest sensitivities are indicated. The environmental sensitivities for the proposed development footprint as identified by the screening report, are <u>indicative only</u> and were further verified on site by a suitably qualified person.

6.6. <u>SCREENING TOOL RECOMMENDED SPECIALIST STUDIES:</u>

Based on the selected classification and the environmental sensitivities determined by the Screening Tool, the following list of specialist assessments are recommended for inclusion in the environmental assessment process. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist assessments.

 Table 4: The Screening Tool's Recommended Specialist Assessments for Solar Array Site & all associated infrastructure (Cable Route and Distribution Klein Brak WTW and Groot Brak WWTW).

| No. | Specialist Assessment | Assessment Protocol | Solar Site | Cable Route - klein Brak | Klein Brak Solar distribution Infrastructure | Groot Brak solar distribution Infrastructure | Cable Route - Sandhoogte |
|-----|--|-----------------------------|---------------|-----------------------------------|---|--|-----------------------------|
| | Agricultural Impact Assessment | Wind & Solar | Х | Х | X | X | Х |
| 4 | Landscape/Visual Impact Assessment | General | Х | Х | - | - | Х |
| | Archaeological and Cultural Heritage Impact Assessment | General | Х | Х | X | X | Х |
| 1 | Palaeontology Impact Assessment | General | Х | Х | X | X | Х |
| Į | Terrestrial Biodiversity Impact Assessment | Terrestrial Biodiversity | Х | Х | X | X | Х |
| (| Avian Impact Assessment | Avifaunal biodiversity | - | - | - | - | Х |
| , | Aquatic Biodiversity Impact Assessment | Aquatic Biodiversity | Х | Х | X | Х | Х |
| 3 | Civil Aviation Assessment | Civil Aviation | Х | Х | - | - | Х |
| ç | Defence Assessment | Defence Installations | Х | - | - | - | - |
| | RFI Assessment | General | Х | Х | - | - | Х |
| - | Geotechnical Assessment | General | Х | Х | X | Х | Х |
| | Socio-economic Assessment | General | Х | - | - | - | - |
| | Plant Species Assessment | Plant Species | Х | Х | X | Х | Х |
| | Animal Species Assessment | Animal Species | Х | Х | X | X | Х |

7. SITE VERIFICATION: Required Themes

A site inspection was undertaken on the 29th of February 2024, by Ms. Jessica Gossman (EAPASA Registration: No. 6154), and Ms. Lu-Anne Beets (EAPASA Registration: No. 7962). The images below depict the environmental area and conditions on site on the day for the proposed solar array site.



Figure 9. Proposed location north-western view of the solar array site.



Figure 10. Proposed location north-eastern view of the solar array site.

8. Required themes:

The following are the required themes that needed to be examined in terms of the Exclusion Norms (GN 4558 of 2024): Adoption of the Solar Exclusion Norm and Exclusion of the Development and Expansion of Solar Photovoltaic Facilities from the Requirement to obtain an Environmental Authorisation are as follows:

- 8.1) Agriculture
- 8.2) Animal and Avian species themes
- 8.3) Aquatic Biodiversity
- 8.4) Plant Species

8.5) Terrestrial Biodiversity

8.1. AGRICULTURE

Screening Tool: The report indicates that the agricultural sensitivity rating of the proposed development site is of **high sensitivity** for the solar array site and **medium sensitivity** for the rest of the sites and cable route. An Agriculture assessment was recommended from the DFFE Screening Tool.



Figure 11. Relative Agriculture Theme Sensitivity Map (DFFE, 2024)

Sensitivity Features

| Solar array site | | | | | | | |
|------------------|---|--|--|--|--|--|--|
| Sensitivity | Feature (s) | | | | | | |
| Low | Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low | | | | | | |
| Medium | Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate | | | | | | |
| | Cable Route, and distribution sites | | | | | | |
| High | Land capability;09. Moderate-High/10. Moderate-High | | | | | | |
| Low | Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very | | | | | | |
| | low/05. Low | | | | | | |
| Medium | Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate | | | | | | |

Desktop Observation: From the desktop observation the proposed site can be regarded to be used for cattle grazing (Cape Farm Mapper, 2024). The proposed site shows evidence of being previously cleared. The proposed site is heavily vegetated and not currently used for agriculture.

The classified land capability of the proposed development site ranges between 6 and 4. The DFFE Screening Tool's agricultural land capability data has been obtained through the DAFF 2016 Draft Land Capability dataset. This dataset categorises the country into 15 different classes, which have been sub-categized into 4 classes. The dataset was generated through GIS modelling.

Departmental description of 'land capability': the value of the land capability is determined by the interaction of climate, soil and the terrain for the purpose of intensive long-term use of land for the purposes of rainfed farming (DAFF, 2017). The agricultural sensitivity of a site is determined by the active agricultural practices on site (specifically crop production). Due to the nature of the current state of the site and what is proposed to be a solar farm development, this may impact agriculture practices.

- Visually assessing the area on Google Earth Pro, the area seems to be currently vacant open area that is not used for any agricultural proposes, however historically may have been used for cattle grazing.
- The site is Agriculture 1 (Mossel Bay Municipal Zoning Scheme, 2021), and land transformation will be required should the development be approved.

Observations by the EAP: During the site visit conducted on 29th of February 2024, it was observed that the proposed development area has no agriculture uses and is highly vegetated. The proposed site has signs of historical land clearing that may have been used for cattle grazing.

The proposed cable route traverses areas of varying agricultural sensitivity, predominantly falling within a medium sensitivity zone according to the Department of Forestry, Fisheries, and the Environment (DFFE) Screening tool. While the desktop observation identifies it as within a high sensitivity area for agricultural practices, field observation suggests a mixed scenario, with the majority of the route falling within a medium sensitivity zone, suitable for cattle grazing. Similarly, the Klein Brak and Groot Brak solar distribution infrastructure sites are situated in regions of medium agricultural sensitivity, as per the DFFE Screening tool. Field observations indicate low-moderate land capability, primarily utilized for cattle grazing. Notably, the proposed constructions for both sites are located within managed areas—Klein Brak within its Water Treatment Works (WTW) area and Groot Brak within its Uastewater Treatment Works (WTW) area and Groot Brak within its underscores the controlled and non-agricultural nature of the proposed developments.

Specialist recommendation: The agriculture specialist Johann Lanz concluded that due to the fact that the development will not occupy scarce, viable cropland, the overall negative agricultural impact of the development (loss of future agricultural production potential) is assessed as being of **low significance** and as acceptable.

From an agricultural impact point of view, it is recommended that the proposed development be **approved**.

Conclusion: Due to the evidence provided, it is proposed that the project may be considered from an agriculture perspective as the EAP recommends that the sensitivity from the Screening Tool be changed from high to low sensitivity, and no further action to be taken. The Department of Agriculture will be included in the public consultation period of the proposed project.

8.2. ANIMAL AND AVIAN SPECIES THEMES

Screening Tool: The report indicates that the animal sensitivity rating of the proposed development site is **high sensitivity** for all sites examined. An animal assessment was recommended from the DFFE Screening Tool.



Figure 12. Relative Animal Species Theme Sensitivity Map (DFFE, 2024)



Figure 13. Relative Avian Species Theme Sensitivity Map – Solar array site (DFFE, 2024)

Screening Tool: The report indicates that the Avian sensitivity rating of the proposed development site is a **low sensitivity** for the solar array site. An animal assessment was recommended from the DFFE Screening Tool.

Table 5: Sensitivity Features of animal species including the avian species themes found withinthe DFFE Screening Tool:

| Sensitivity: Solar Array | Feature(s) | Sensitivity: Cable route | Sensitivity: Klein Brak Distribution Infrastructure | Sensitivity: Groot Brak Distribution infrastructure | Sensitivity: Sandhoogte Distribution Infrastructure |
|-----------------------------|---|--------------------------------|--|--|--|
| High | Aves-Neotis denhami | High | High | High | High |
| High | Aves-Circus ranivorus | High | High | High | High |
| Medium | Sensitive species 5 | Medium | Medium | Medium | - |
| Medium | Sensitive species 8 | Medium | Medium | Medium | Medium |
| Medium | Invertebrate- Aneuryphymus montanus | Medium | Medium | Medium | Medium |
| X | Aves- Hydroprogne caspia | High | High | X | Х |
| Х | Aves-Pelecanus onocrotalus | High | Х | Х | X |
| X | Aves- Bradypterus sylvaticus | High | High | X | X |
| Х | Aves- Polemaetus bellicosus | High | High | X | Х |
| Х | Insecta-Aloeides thyra orientis | Medium | Medium | X | X |
| X | Insecta- Lepidochrysops littoralis | Medium | Not found | X | X |

The following descriptions provide insight into the habitat and distribution of the relevant faunal and avifaunal species, indicated by the DFFE screening tool report for all sites:

| Species name | Common name | IUCN Status | Distribution | Preferred habitat | iNaturalist | Likelihood of occurrence |
|-------------------------------|--------------------------|----------------|---|--|--|-----------------------------|
| | | | | | | (Specialist) |
| | | | Aves | | | |
| Aves-Circus ranivorus | African Marsh-Harrier | LC | Mainly resident in the moister regions of southern and eastern Africa, from the Western Cape northwards through eastern South Africa, (Brown, Urban, & Newman, 1982). | Marshes or reedbeds in grasslands and cultivation near wetland | Not identified within proposed Project. | Low |
| Aves-Neotis denhami | Denham's Bustard | VU | The range primarily across sub- Saharan Africa. The Denham's Bustard can be found within cultivated pastures, agriculture croplands and natural vegetation with clear seasonal differences in the use of habitat types. The species avoids dry western and central parts of South Africa. | Grassland and shrubland, dried marshes and farmlands. | Not identified within proposed project. | Low |
| Aves-Polemaetus bellicosus | Martial Eagles | EN | The range primarily across sub- Saharan Africa. Martial Eagles are found in several countries in southern Africa, including South Africa, Namibia, Botswana, Zimbabwe, Mozambique, and Zambia. They inhabit various habitats within these countries, from savannas to mountainous regions. | Savannahs, mountainous regions, woodlands | Not identified within proposed project. | Low |
| Aves-Hydroprogne caspia | Caspian Tern | LC | This species has a cosmopolitan but scattered distribution. Their | Lakes, Ocean Coastal areas | Not identified within | Low |

Table 6. Species of Conservation Concern identified within all of the study areas.

| Species name | Common name | IUCN Status | Distribution | Preferred habite | at | iNaturalist | Likelihood of occurrence (Specialist) |
|--------------------------------|------------------------|----------------|---|--------------------------------------|-------------|--|---|
| | | | breeding habitat is large lakes and ocean coasts in North America (including the Great Lakes), and locally in Europe (mainly around the Baltic Sea and Black Sea), Asia, Africa, and Australasia (Australia and New Zealand). North American birds migrate to southern coasts, the West Indies and northernmost South America. European and Asian birds winter in the Old World tropics. African and Australasian birds are resident or disperse over short distances (del Hoyo et al. 1996). | | | proposed project. | |
| Aves-Pelecanus onocrotalus | Great White Pelican | LC | The Great White Pelican has a wide distribution range, spanning parts of Africa, Europe, Asia, and occasionally reaching into the Middle East. Great White Pelicans are found throughout various regions of Africa, including sub-Saharan Africa, the Nile Basin, and along the coasts of the Mediterranean Sea. They inhabit freshwater lakes, rivers, marshes, and coastal wetlands across the continent. | Wetlands, Marine I marshes | Intertidal, | Not identified within proposed project. | Low |
| Aves-Bradypterus sylvaticus | Knysna Warbler | VN | endemic to South Africa, being restricted to remnant forest | Forest, St Artificial/Terrestrial | hrubland, | Not identified within the | Low |

| Species name | Common name | IUCN Status | Distribution | Preferred habitat | iNaturalist | Likelihood of occurrence (Specialist) |
|------------------|----------------------|----------------|--|---|---------------------------------------|---|
| | | | patches in coastal regions of the Eastern and Western Cape. The population is highly fragmented, with four main isolated subpopulations. These are concentrated upon: the coast between Port St Johns and Dwesa Nature Reserve, the Southern Cape, from Tsitsikamma to Sedgefield, the south slopes of the Langeberg Mountains, near Swellendam, and the east slopes of Table Mountain. It also formerly occurred around Durban. Estimates of a population of hundreds of thousands in 1992 have been revised by the paucity of atlas records, which strongly suggest that it is far rarer, and probably numbers c.2,500 individuals. | | proposed project. | |
| Tringa nebularia | Common Greenshank | LC | This is a subarctic bird, breeding from northern Scotland eastwards across northern Europe and east across the Palearctic. It is a migratory species, wintering in Africa, the Indian subcontinent, and Australasia, usually on fresh water. It breeds on dry ground near marshy areas, laying | Forest, Grassland, Wetlands (inland), Marine Neritic, Marine Intertidal, Marine Coastal/Supratidal, Artificial/Aquatic & Marine | Found within project foodprint. | Specialist didn't record this species findings. However, Avifaunal Desktop Species listed 179 recorded 24/01/2024 in specialist report. |

| Species name | Common name | IUCN Status | Distribution | Preferred habitat | iNaturalist | Likelihood of occurrence (Specialist) |
|-----------------------------|------------------------|----------------|---|---|---|---|
| | | | about four eggs in a ground scrape. | | | |
| Anas undulata | Yellow-billed Duck | LC | Found mainly in South Africa, where it is very common. It also occurs in patches of Botswana, Namibia and Zimbabwe, although it is hard to find in these areas. It generally prefers still waters of streams, lakes, swamps, pans, swamps, marshes and sewerage ponds. It avoids saline or highly acidic water and is largely absent from fast-flowing waters. | Grassland, Wetlands (inland), Marine Neritic, Marine Coastal/Supratidal, Artificial/Aquatic & Marine | Found within project footprint. | Specialist didn't record this species findings. However, Avifaunal Desktop Species listed 277 recorded 24/01/2024 in specialist report. |
| Ciconia microscelis | African Woollyneck | LC | medium-sized stork found throughout most of sub- Saharan Africa. It is a resident breeder building nests on trees located on agricultural fields or wetlands, on natural cliffs, and on cell phone towers. They use a variety of freshwater wetlands including seasonal and perennial reservoirs and marshes, crop lands, irrigation canals and rivers. | Forest, Grassland, Wetlands (inland), Marine Neritic, Marine Intertidal, Artificial/Terrestrial, Artificial/Aquatic & Marine | Found within the project footprint. | No data from specialist. |
| Threskiornis Aethiopicus | African Sacred Ibis | LC | Found in Sub-Saharan Africa, southeastern Iraq, and formerly in Egypt, and occurs in marshy wetlands and mud flats, both inland and on the coast. | Forest, Grassland, Wetlands (inland), Marine Intertidal, Marine Coastal/Supratidal, Artificial/Terrestrial, Artificial/Aquatic & Marine | Found within the project footprint. | Specialist didn't record this species findings. However, Avifaunal Desktop Species listed 198 recorded |
| Species name | Common name | IUCN Status | Distribution | Preferred habitat | iNaturalist | Likelihood of occurrence (Specialist) |
|---------------------|----------------|----------------|--|--|--|---|
| | | | | | | 05/01/2024 in specialist report. |
| | | | Mammals | | | |
| Sensitive Species 5 | N/A | CE | Distributed widely throughout Africa and occupied a range of about 25 344 648 km2; however the known range has more recently been drastically reduced to a mere 2 709 054 km2 – a shocking decline of 89%. Due to human pressures the distribution of <i>Sensitive</i> <i>species 5</i> have been modified greatly. There is a known population of approximately 6 700 adults across 29 subpopulations left in the wild. The two largest meta- populations occur in East Africa and southern Africa. Its presence across the continent has declined to a mere 10% of the historical range. The range in eastern Africa has reduced to 6% of its original extent, so that presently it is distributed in an area of 310 586 km2. (SANBI, 2019). | Shrubs, Grasslands, savannahs, temperate/ hot deserts | Not identified within proposed project. | Low |
| Sensitive Species 8 | N/A | LC | Central, western and southern Africa. The population in South Africa ranges coastally and inland from Umfolozi River System in KwaZulu-Natal to the | Forested and Wooded habitat, shrubland, thicket | Not identified within proposed project. | Low |

| Species name | Common name | IUCN Status | Distribution | Preferred habitat | iNaturalist | Likelihood of occurrence (Specialist) |
|--------------------------|--|----------------|---|--|--|--|
| Bathyergus suillus | Cape Dune Mole-rat | LC | Eastern Cape to as far as George in the Western Cape. Historically the sensitive species 8 occurred in Hluhluwe-iMfolozi and Mkhuze areas, but they currently appear to be absent from these areas (Venter et al. 2016). The sensitive species 8 distribution is restricted to the coastal provinces in South Africa, but the species has been introduced into captive- breeding systems around the country. (Venter et al. 2016). The Cape dune mole-rat is found only in South Africa, where it is found along the southern and western shores | Desert, Artificial/Terrestrial | Found within the project footprint. | Specialist noted the species in the mammals desktop species |
| | | | and Port Elizabeth. Its natural habitat is sandy shorelines and river banks dominated by veldt grassland, sedges, and herbs. | | | information. |
| | | | Invertebrates | | - | |
| Aneuryphymus montanus | Yellow- winged Agile Grasshopper | VU | This species is only known from six localities in the Cape region of South Africa. Its estimated extent of occurrence (EOO) is ca 170,000 km ² , while its area of occupancy (AOO) is probably between 100 and 1,000 km ² . | Fynbos – with preference to south-facing rocky slopes | Not identified within proposed project. | Low |

| Species name | Common name | IUCN Status | Distribution | Preferred habitat | iNaturalist | Likelihood of occurrence (Specialist) |
|--|-------------------------------------|----------------|--|--|--|---|
| Insecta- Lepidochrysops littoralis | Coast Blue butterfly | EN | This species is endemic to the Western Cape Province in South Africa, occurring from the De Hoop Nature Reserve near Bredasdorp in the west to a few kilometres west of Mossel Bay in the east. | Shrubland, Marine Coastal/ Supratidal | Not identified within proposed project. | No data recorded from specialist. |
| Insecta-Aloeides thyra orientis | Aloeides thyra/Thyra's copper | EN | The Thyra copper (Aloeides thyra) is a butterfly species endemic to South Africa. Its distribution is primarily concentrated in the eastern parts of the country, particularly in the provinces of Mpumalanga, KwaZulu-Natal, and Limpopo. Within these provinces, it inhabits grassy areas, open savannahs, and other suitable habitats where its larval host plants, such as species of Lotononis and Indigofera, grow abundantly. | Grassland, Savanahs | Not identified within proposed project. | No data recorded from specialist. |
| Hyperolius marmoratus | Painted Reed Frog | LC | Associated in with emergent vegetation at the margins of swamps, rivers and lakes in all types of savannah, grassland and bush land, as well as many human-modified habitats, including cultivated land, towns and gardens. It spreads rapidly into recently created waterbodies. | Forest, Savanna, Shrubland, Grassland, Wetlands (inland), Artificial/Terrestrial, Artificial/Aquatic & Marine | Found within the project footprint. | No data recorded from specialist |

| Species name | Common name | IUCN Status | Distribution | Preferred habitat | iNaturalist | Likelihood of occurrence (Specialist) |
|---------------------|---------------------|----------------|---|---|---|---|
| Cyrtacanthacridinae | bird Grasshopper | N/A | species of locusts, short-horned grasshoppers that undergo phase polymorphism and are among the most important pests of sub-Saharan Africa; | prairies, fields, pastures, cropland, gardens, and open woodlands. | Found within the project footprint. | No data recorded from specialist. |
| Asota speciosa | Specious Tiger | | The species is widespread in sub-Saharan Africa, such as in Sierra Leone, Togo, Nigeria, Cameroon, Mozambique and South Africa. | The species is widespread in sub-Saharan Africa, such as in Sierra Leone, Togo, Nigeria, Cameroon, Mozambique and South Africa. The larvae feed on certain latex-rich plants, mainly Ficus species (fig trees). | Found within the project footprint. | No data recorded from specialist. |

Desktop observation: The proposed site is located within high animal species theme and low Avi-faunal sensitivity. Based on the information further included by iNaturalist there is a further eleven (11) sensitive animal species documented within the proposed project area needed to be evaluated by the specialist.

Observation by the EAP: Based on the vegetative state of the proposed site, little visibility was found on all animal species on site. However, bird species were observed, and a specialist was appointed to verify the screening tool findings for both animal species and avian species found within the solar array site and cable routes.

An animal species compliance statement was conducted by a suitably qualified SACNASP registered individual, Dr J. Visser from Blue Skies Research. In order to confirm the animal sensitivity and avifaunal species present on site.

The Cable Route site presents a challenge as it is situated within a high sensitivity rating, with limited visibility on site suggesting a need for specialist verification of animal species presence. An appropriately registered SACNASP Professional, Fauna specialist was appointed to confirm findings and determine further actions regarding this theme. Both the Klein Brak and Groot Brak solar distribution infrastructure sites are located within areas of medium sensitivity and transformed land, indicating limited habitat suitability for animal species. Given the transformed nature of these sites, the likelihood of animal presence is deemed low, suggesting minimal habitat support for fauna.

Specialist recommendation: Dr J. Visser from Blue Skies Research conducted a faunal species compliance statement, compiled on the 1 March 2024. Based on the specialist outcomes three mammal species were observed on site and classified as "least concern" in accordance with the IUCN. The Four-striped Grass Mouse (*Rhabdomys pumilio*) is by far the most abundant mammal species on the site, given the thick and tangled nature of the shrubland and grassland habitats which provide suitable cover. Other rodent species which are also present include the Cape Porcupine (*Hystrix africaeaustralis*) and Hairy-footed Gerbil (*Gerbillurus paeba*). Overall, the site appears degenerative in mammal diversity.



Figure 14. Recorded mammal species located on the proposed site, (Blue Skies Research, 2024).

The specialist verified that only 20 bird species were recorded within the study area (see Figure 15) all of which are currently classified as "Least concern" by the IUCN. All avifauna on the site constitute common species which are frequently encountered in a peri-urban grassland and shrubland setting, and overall avifaunal diversity on the site appears relatively impaired.

Seven butterfly species were recorded within the study area, all of which are currently classified as "Least Concern" by the IUCN. The specialist had also identified Three grasshopper species within the study area, two of which are currently not assessed and one classified as "Least Concern" by the IUCN. The Lamenting Grasshopper (*Eyprepocnemis plorans*) is the most abundant species on the site and occurs in all Shrubland and Grassland habitats. Individuals of the Common Stick Grasshopper (*Acrida acuminata*) and Slender Green-winged Grasshopper (*Aiolopus thalassinus*) were also noted.



Figure 15. Recorded avifaunal species recorded on the proposed site, (Blue Skies Research, 2024).

The specialist included that due to the current negative ecological impacts over the proposed 11kV cable routes along the small and linear spatial extent and placement in a peri-urban setting, the faunal integrity of these footprints is expected to be **low to very low**.

Planned development activities along with associated impacts are expected to lead to the loss of only a relatively small area of already modified and secondary habitats during the construction phase of both the PV solar plant and 11kV cable routes with no additional impacts on the receiving environment expected during the operational phase. From a broader conservation perspective, this loss of habitat is acceptable given that this should not compromise biodiversity targets on either a local, regional or national scale.

Conclusion:

During the desktop study the specialist identified 7 Mammal SCCs, 16 Avi-faunal SCCs. Considering the modified and secondary nature of habitats on the site along with its spatially limited nature (4.7 hectares) and a high level of daily disturbances (noise and vibration from surrounding roads, the Groot-Brak rivier WWTW and agricultural areas), the study area does not support subpopulations of any of the considered mammal, avifaunal or invertebrate SCC, or offer any suitable habitat for significant permanent subpopulations of these species. To this end, all SCC are retrieved as having either a medium or low likelihood of occurring on the site and are therefore not further considered during this assessment.

Overall, terrestrial faunal and avifaunal diversity and abundances appears relatively low and is comprised of relatively common species of "Least Concern" (IUCN, 2021). This impaired faunal diversity is likely a result of the modified and relatively isolated nature of the site. The site existed in an open state from clearing practices that took place before at least 2015 (nine years ago), with the subsequent recovery to a predominantly and secondary shrubland and grassland phase. Furthermore, the site is situated among busy roads to the south and east, the Groot-Brakrivier WWTW to the south, and agricultural farmlands to the west and further to the

north and east which render daily disturbances (through noise and vibration) on the site itself and also isolates it from surrounding natural areas in the broader landscape.

Taken together, and along with the compromised biodiversity patterns, there appears to be very few intact predator-prey dynamics on the site, with ecosystem dynamics also appearing compromised. To this end, the study area does not appear to function as an important ecological link and faunal dispersal corridor in the study area landscape, rendering it of a lower sensitivity in a biodiversity and ecological context.

Because all habitats on the site do not constitute suitable habitat for any of the SCC considered, and further exist in a modified, secondary and isolated state, these habitats are retrieved as having a "Very low" SEI, allowing for development activities of medium to high impact without restoration activities being required to this end. This renders the entire site as less sensitive from a faunal perspective.

The results from the specialist report confirm the site sensitivity of the proposed project footprint to be **"Low"** rather than "High" as identified in the DFFE Screening Tool Report suggests. This follows from the modified and secondary nature of the on-site habitats which offers little in the way of preferred habitat for any terrestrial faunal or avifaunal SCC, harbours a relatively impaired terrestrial faunal and avifaunal community and does not provide a highly functional link in providing ecosystem services to the broader landscape.

Taken together, the relatively limited spatial extent of the proposed project footprints (both the PV solar plant and 11kV cable routes) along with the limited impact of these developments on the receiving environment are therefore **acceptable** from a faunal conservation perspective. Also considering the socio-economic benefits of sustainable energy generation in the Western Cape, these developments are therefore **supported from a faunal biodiversity perspective.**

Due to the evidence provided, it is proposed that the project may be considered from an Animal and Avi-faunal perspective as the EAP recommends that the sensitivity from the Screening Tool be changed from high to low sensitivity, and no further action to be taken.

8.3. AQUATIC BIODIVERSITY

Screening Tool: The report indicates that the aquatic biodiversity sensitivity rating of the proposed development site is **low sensitivity**. An Aquatic assessment was recommended from the DFFE Screening Tool.



Figure 16. Relative Aquatic Biodiversity Theme Sensitivity Map, (DFFE, 2024).

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|-----------------|
| Low | Low Sensitivity |



Figure 17. Locality of Aquatic and Critical Biodiversity Areas within the proposed solar array site, (CFM, 2024).



Figure 18. Locality of Aquatic and Critical Biodiversity Areas, (CFM, 2024).

Desktop Observation: No aquatic features have been identified within the site boundaries in accordance with the Western Cape Government spatial data tool, Cape Farm Mapper, 2024. The proposed site is located within Sub-Quaternary Catchment Prioritised for Wetland Rehabilitation (307-765).

Observation by the EAP:: The Cable Route is mapped within a low aquatic sensitivity, with no direct presence of aquatic Critical Biodiversity Areas (CBAs) or wetlands, although a nearby mapped CBA: Aquatic 1, CBA Wetland 2 is noted within 16 meters from the proposed site. Despite this proximity, the site is not directly within any rivers or wetlands of concern, located approximately 13.8 meters from a mapped National Environmental Management Protected Areas (NEMPA) near the Klein Brak Water Treatment Works (WTW). Similarly, the Klein Brak and Groot Brak solar distribution infrastructure sites are mapped within low aquatic sensitivity, with no direct presence of aquatic CBAs or wetlands. Although the Klein Brak site is approximately 6 meters from a NFEPA wetland and the Groot Brak site is about 30 meters from a NFEPA wetland, both are situated on transformed land, alleviating concerns regarding impacts on these areas.



Figure 19. Klein Brak Distribution location and associated 11kV cable route, (CFM, 2024).

Specialist recommendation: Debbie Fordham of Upstream Consulting compiled the aquatic biodiversity compliance statement on the 18th of March 2024. It was determined that there are seven aquatic features within the 500m radius study area, with six of these features being artificial in nature. Within the site, there are two artificial wetlands. HGM1 is a small, excavated depression previously used for livestock drinking water. HGM2 is a seep wetland formed by road stormwater runoff and/ or a leaking pipeline. HGM1 and HGM2 artificial wetlands will be impacted by the proposed project. However, these are artificial features and have very limited biodiversity importance. The other features are at **no risk of being impacted by the project**.



Figure 20. Aquatic habitat identified, and delineated into hydrogeomorphic (HGM) units, within 500m of the proposed site, (Upstream Consulting, 2024).

It was therefore confirmed that the site sensitivity is '**Low'** for the aquatic biodiversity theme and that a Compliance Statement be submitted.

The property falls within quaternary catchment K10F of the Breede-Gouritz water management area. The main river in this catchment is the Klein Brak River, however, the site is not connected to the drainage network. The site does not fall within a sub-quaternary catchment (SQC) that has been categorised as a Freshwater Ecosystem Priority Area (FEPA) or a Strategic Water Source Area (SWSA).

Conclusion: Based on the specialist findings, the aquatic verification study was undertaken using desktop data analysis, site assessment, GIS mapping and scientific knowledge. It is agreed that there are no natural aquatic habitats within, nor surrounding, the proposed site. Therefore, the site has a **Low sensitivity**, and the project will not impact aquatic biodiversity. The Compliance Statement for the Aquatic Biodiversity theme concludes that the project does not require further assessment and should be deemed as **acceptable**.

Due to the evidence provided, it is proposed that the project may be considered from an Aquatic perspective as the EAP recommends that the sensitivity from the Screening Tool is correct at a low sensitivity rating, and no further action to be taken.

8.4. PLANT SPECIES

The **Screening Tool** indicated that the plant species theme is of **low sensitivity** for the solar array site and Groot Brak solar distribution infrastructure site and **medium sensitivity** for both cable routes North to Sandhoogte and to the Klein Brak site. The tool suggests that a Plant Species Assessment be conducted.



Figure 21. Plant Species Theme Map – Solar Array Site, (DFFE, 2024).

Sensitivity Features

| Sensitivity | Feature(s) |
|-------------|-----------------|
| low | Low sensitivity |

No further information was provided from the screening tool for both the solar array site and Groot Brak solar distribution infrastructure site.



Figure 22. Plant Species Theme Map – Transmission Line (DFFE, 2024)

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|--------------------|
| Medium | Medium sensitivity |

For the proposed Cable Routes & The Klein Brak solar distribution infrastructure.

| Sensitivity | Feature(s) | Red List Status | Habitat | iNaturalist | Likelihood of occurrence (Specialist) |
|-------------|----------------------------|--------------------|---|--|---|
| Medium | Lampranthus fergusoniae | Vulnerable | Fynbos, Strandveld, Thicket / Limestone dunes. | Not found within proposed project | Low-medium (iNat records <1 km east of Kleinbrak WTW) |
| Medium | Lampranthus pauciflorus | Endangered | Afrotemperate Forest, Strandveld, Fynbos and Thicket. | Not found within proposed project | Low |
| Medium | Ruschia Ieptocalyx | Endangered | Renosterveld, Fynbos and Thicket | Not found within proposed project | Low |
| Medium | Lebeckia gracilis | Endangered | Strandveld, Fynbos, Thicket. | Not found within proposed project | Low |
| Medium | Leucospermum praecox | Vulnerable | Fynbos and Thicket. | Not found within proposed project | Low (iNat records <1 km east of Kleinbrak WTW) |

| Sensitivity | Feature(s) | Red List Status | Habitat | iNaturalist | Likelihood of occurrence |
|-------------|--------------------------------------|--------------------------|---|--|--|
| Medium | Wahlenbergia polyantha | Vulnerable | Strandveld, Fynbos and Thicket. | Not found within proposed | Low |
| Medium | Selago villicaulis | Vulnerable | Thicket | Not found within proposed project | Recorded on site - Powerline |
| Medium | Erica unicolor subsp. mutica | Endangered | Fynbos, Thicket | Not found within proposed project | Low |
| Medium | Erica glandulosa subsp. fourcadei | Vulnerable | Strandveld, Fynbos, Thicket. | Not found within proposed project | Low |
| Medium | Hermannia Iavandulifolia | Vulnerable | Strandveld, Renosterveld, Thicket. | Not found within proposed project | Only one SCC was recorded in the north- eastern corner of the site, namely Hermannia lavandulifolia - Powerline |
| Medium | Sensitive species 153 | Endangered | Fynbos, Thicket. | Not found within proposed project | Low |
| Medium | Sensitive species 268 | Endangered | Renosterveld, Fynbos, Thicket . | Not found within proposed project | Low |
| Medium | Duvalia immaculata | Endangered | Renosterveld, Thicket. | Not found within proposed project | Low |
| Medium | Cotula myriophylloides | Critically Endangered | Fynbos, Estuarine Functional Zone. | Not found within proposed project | Low |
| Medium | Agathosma eriantha | Inerable | Renosterveld, Strandveld, Fynbos, Thicket. | Not found within proposed site | Low |
| Medium | Agathosma muirii | Vulnerable | Fynbos, Thicket. | Not found within proposed site | Medium (iNat records <1 km southeast of Kleinbrak WTW) |
| Medium | Euchaetis albertiniana | Endangered | Fynbos, Thicket. | Not found within | Low-medium (doubtful |

| Sensitivity | Feature(s) | Red List Status | Habitat | iNaturalist | Likelihood of occurrence (Specialist) |
|-------------|---------------------------|--------------------------|---|---|--|
| | | | | proposed site | iNat records from area) |
| Medium | Muraltia knysnaensis | Endangered | Fynbos, Thicket. | Not found within proposed site | Low (doubtful iNat records from area) |
| Medium | Polygala pubiflora | Vulnerable | Fynbos, Renosterveld, Thicket | Not found within proposed site | Low |
| Medium | Nanobubon hypogaeum | Endangered | Fynbos, Thicket. | Not found within proposed site | Low |
| Medium | Sensitive species 516 | Endangered | Fynbos, Renosterveld, Thicket | Not found within proposed site | Low |
| Medium | Sensitive species 800 | Vulnerable | Fynbos, Renosterveld, Thicket | Not found within proposed site | Low |
| Medium | Sensitive species 500 | Endangered | Strandeveld, Fynbos, Thicket | Not found within proposed site | Low |
| Medium | Sensitive species 654 | Vulnerable | Grassland, Strandveld, Fynbos, Thicket | Not found within proposed site | Low |
| Medium | Agathosma microcarpa | Vulnerable | Renosterveld, Fynbos, Thicket. | Not found within proposed site | Low |
| Medium | Zostera capensis | Vulnerable | Marine, Freshwater aquaculture | Not found within proposed site | Low |
| Medium | Freesia fergusoniae | Vulnerable | Fynbos and Renosterveld | Not found within proposed site | No data identified from specialist |
| Medium | Sensitive species 633 | Critically Endangered | Fynbos, Renosterveld | Not found within proposed site | No data identified from specialist |
| Medium | Sensitive species 1024 | Endangered | Renosterveld, Fynbos | Not found within proposed site | No data provided by specialist |

| Sensitivity | Feature(s) | Red List Status | Habitat | iNaturalist | Likelihood of occurrence (Specialist) | | | | | |
|------------------------------|---|--------------------|--|---|---|--|--|--|--|--|
| Medium | Diosma passerinoides | Vulnerable | Renosterveld, Fynbos | Not found within proposed site | No data provided by specialist | | | | | |
| List of plan tool report. | List of plant species found on iNaturalist, but not documented by specialist and screening tool report. | | | | | | | | | |
| - | Melia azedarach | Not evaluated | - | Found within proposed site | No data provided by specialist | | | | | |
| - | Plantago Ianceolata | Least concern | Dry meadows, rain forests | Found within proposed site | No data provided by specialist | | | | | |
| - | Metalasia acuta | Least concern | Renosterveld, fynbos | Found within proposed site | Recorded on site – project footprint | | | | | |
| - | Persicaria Iapathifolia | Not evaluated | - | Found within proposed site | Recorded on site – Solar site | | | | | |
| - | Genus Schoenoplectus | Not evaluated | Wetlands and marshes | Found within proposed site | No data provided by specialist | | | | | |
| - | Agave americana | Not evaluated | Woodlands, riparian areas and woodlands | Found within proposed site | Recorded on site – project footprint | | | | | |
| - | Genus Oenothera | Not evaluated | Forests | Found within proposed site | No data provided by specialist | | | | | |
| - | Rhamnus prinoides | Least concern | Forests, wetlands and grasslands | Found within proposed site | No data provided by specialist | | | | | |
| - | Berkheya heterophylla | Least concern | Grasslands and wetlands | Found within proposed site | Recorded on site – cable routes | | | | | |
| - | Agathosma apiculata | Least concern | Thicket, Fynbos, coastal dunes | Found within proposed site | Recorded on site – cable routes | | | | | |
| - | Trichocephalus stipularis | Least concern | Fynbos | Found within proposed site | Recorded on site – cable routes | | | | | |

| Sensitivity | Feature(s) | Red List Status | Habitat | iNaturalist | Likelihood of occurrence (Specialist) |
|-------------|------------------------------|--------------------|---------------------------------------|-------------------------------------|---|
| - | Pittosporum viridiflorum | Least concern | Forest, woodlands | Found within proposed site | Recorded on site – cable routes |
| - | Colpoon compressum | Least concern | Coastal Fynbos | Found within proposed site | Recorded on site – cable routes |
| - | Solanum africanum | Not evaluated | Coastal dunes | Found within proposed site | Recorded on site – cable routes |
| - | Hermannia salviifolia | Least concern | Shrub lands | Found within proposed site | No data provided by specialist |
| - | Acacia mearnsii | Not evaluated | Grasslands, woodlands, wetlands | Found within proposed site | Recorded on site – solar routes |
| - | Vachellia kosiensis | Least conern | Forest, wetlands | Found within proposed site | No data provided by specialist |
| - | Pseudodictamnus africanus | Not evaluated | Woodlands, grasslandsand fynbos | Found within proposed site | Recorded on site – cable routes |
| - | Megathyrsus maximus | Not evaluated | grasslands | Found within proposed site | Recorded on site – cable routes |
| - | Cestrum Iaevigatum | Not evaluated | Forest, grasslands, wetlands | Found within proposed site | Recorded on site – cable routes |
| - | Genus Malva | Not evaluated | Shrublands | Found within proposed site | No data provided by specialist |
| - | Lycium tenue | Least concern | shrublands | Found within proposed site | Recorded on site – cable routes |
| - | Genus Eucalyptus | Not evaluated | Forests | Found within proposed site | No data provided by specialist |
| _ | Opuntia monacantha | Not evaluated | Shrublands | Found in proposed site | No data provided by specialist |

| Sensitivity | Feature(s) | Red List Status | Habitat | iNaturalist | Likelihood of occurrence (Specialist) |
|-------------|-----------------------|--------------------|------------------------|-------------------------------------|---|
| - | Hypoestes aristata | Least concern | Shrubland and wetlands | Found within proposed site | Recorded on site – cable routes |
| - | Euclea crispa | Least conern | Woodlands, forests | Found in proposed site | No data provided by specialist |
| - | Carpobrotus muirii | Near Threatened | Fynbos, thicket | Found within proposed site | No data provided by specialist |

Desktop observation: The desktop study suggests that there are low sensitivity plant features within the proposed site location for the solar array site. However, with the information provided a plant specialist was consulted to verify the plant species on site.

Observation by EAP: Although the site shows a significant amount of vegetation from the site visit, the proposed site needed to be verified of the type of vegetation present and to avoid/ analyse should SCCs be present during the site investigation, even though the screening tool shows no presence of sensitive species on site. It is also important to note that the proposed site is within Hartenbos Dune Thicket classified as endangered vegetation and Garden Route Granite Fynbos classified as critically endangered.

The EAPs desktop observation of the linear and distribution infrastructure for the Cable Route suggests that the desktop observation indicates a plant sensitivity ranging from low to medium, with potential presence of sensitive plant species on site requiring verification by a SACNASP registered professional. Similarly, for the Klein Brak solar distribution infrastructure, the site is noted as having medium sensitivity, yet Google satellite imagery suggests minimal presence of plant species, primarily grassland. The Groot Brak site's sensitivity data is not provided, but visual observation indicates the presence of tree species on transformed land, with limited plant species. In all cases, a specialist verification was required to confirm plant species presence and assess sensitivity, particularly considering the transformed nature of the sites.

Specialist recommendation: Specialist Mark Berry, of Mark Berry Environmental Consultants conducted a Botanical impact statement for the proposed site and complied the report on the 14th of March 2024. The vegetation cover within the site can be described as a shrubby grassland, with a few scattered emergent shrub and tree species. Some parts are shrubbier than others. Denser strips of tall shrubs and trees were encountered along the western and southern boundaries of the site, as well as on the slope above the site on the northern side. The relatively low number of indigenous species recorded shows that the site was subject to a long period of cultivation. Historical Google Earth photographs indicate that it has been lying fallow for at least 20 years. Its chances of reverting back to the original vegetation is therefore slim. The dominant species are grasses (e.g. Cynodon dactylon) and a few pioneer shrubs, such as *Helichrysum rutilans*, *Senecio rosmarinifolius* and *Nidorella ivifolia*. The denser scrub/thicket patches are populated by Acacia cyclops (rooikrans), Gymnosporia buxifolia, Grewia occidentalis, *Searsia lucida and Cynodon dactylon* weeds.

The following indigenous shrub and tree species were recorded on site, namely Helichrysum rutilans (dominant), Senecio rosmarinifolius (dominant), Pseudognaphalium undulatum,

Nidorella ivifolia (dominant in damp spots), Athanasia trifurcata, Metalasia acuta, Osteospermum moniliferum, Searsia lucida, S. pallens, S. glauca, S. crenata, Gymnosporia buxifolia, Grewia occidentalis, Gnidia nodiflora, Passerina sp, Cliffortia linearifolia, Anthospermum aethiopicum, Buddleja saligna, Ruschia tenella, Carpobrotus edulis, Hermannia lavandulifolia, Pelargonium capitatum, Rubus rigidus, Chironia baccifera and Selago sp. Most of these species are pioneers that thrive in disturbed areas. Hemicryptophytes recorded include Pteridium aquilinum (dominant in damp spots), Cheilanthes viridis, Typha capensis, Schoenoplectus cf paludicola and the weedy grass Cynodon dactylon. americana (garingboom, 3) and Persicaria lapathifolia (spotted knotweed). Acacia cyclops appears to be the most problematic. As indicated above, most of these species are Categories 1b, 2 and 3 invaders in the Western Cape. In terms of the National Environmental Management: Biodiversity Act (NEMBA) (Act 10 of 2004) Alien and Invasive Species List (2016), Category 1b invasive species require compulsory control as part of an invasive species control programme. Further in terms of the above Act, the harbouring of black wattle (Category 2 invader) on a property is prohibited without a permit.

Only one Species of Conservation Concern (SCC) was recorded on site, namely *Hermannia lavandulifolia* (VU). The latter is very common in the Mossel Bay area. All the other recorded species are widespread and common in the region.



Figure 23. Botanical attributes locality of SCC within proposed development area, (Mark Berry Environmental Consultants, 2024)

Specialist Mark Berry, of Mark Berry Environmental Consultants conducted a Botanical Impact Assessment for the proposed cable infrastructure powerlines (Sandhoogte and Klein brak) and complied the report on the 6th of September 2024.

During the investigation of the cable routes, the following indigenous shrub and tree species were recorded in the dune thicket and adjacent regrowth areas, namely Osteospermum moniliferum, Senecio rosmarinifolius, S. ilicifolius, S. hastatus, S. angulatus, Helichrysum patulum, H. cymosum, Seriphium plumosum, Oedera genistifolia, Tarchonanthus littoralis, Nidorella ivifolia, Pseudognaphalium undulatum, Berkheya heterophylla, Chrysocoma ciliata, Schotia afra, Vachellia karroo, Indigofera nigromontana, Sideroxylon inerme, Searsia pterota, S. glauca, S. crenata, S. lucida, Olea europaea, Carissa bispinosa, Gymnosporia buxifolia, Putterlickia pyracantha, Mystroxylon aethiopicum, Lauridia tetragona, Pterocelastrus tricuspidatus, Pittosporum viridiflorum, Euclea undulata, E. crispa, Lycium tenue, L. ferocissimum, Solanum africanum, Capparis sepiaria, Azima tetracantha, Diospyros dichrophylla, Tecomaria capensis, Cotyledon orbiculata, Carpobrotus edulis, C. cf muirii, Ruschia tenella, Drosanthemum sp, Delosperma litorale, Tetragonia fruticosa, Aloe arborescens, A. maculata, Crassula expansa, C. ovata, C. capitella ssp. thyrsiflora, Euphorbia mauritanica, E. burmannii, E. clandestina, Clutia daphnoides, Grewia occidentalis, Hermannia holosericea, H. lavandulifolia, H. salviifolia, Colpoon compressum, Pelargonium peltatum, P. capitatum, Clausena anisata, Salvia aurea, Leonotis leonurus, L. ocymifolia, Pseudodictamnus africanus, Solanum linnaeanum, Anthospermum aethiopicum, Rhoicissus digitata, Cynanchum obtusifolium, C. viminale, Asparagus aethiopicus, A. asparagoides, Hypoestes aristata, Selago villicaulis and Chaenostoma caeruleum. Tecomaria capensis, which is indigenous to the eastern parts of South Africa, is probably introduced (planted).

Only a few hemicryptophytes and geophytes were recorded, including Megathyrsus maximus, Ehrharta sp, Oxalis pes-caprae, Albuca canadensis and Chasmanthe aethiopica. There is a high possibility of more spring flowering bulbs present. Species recorded exclusively inside the strandveld patch between the N2 and R102 include Euchaetis burchellii, Passerina corymbosa, Agathosma apiculata, Trichocephalus stipularis, Carpobrotus acinaciformis and Thamnochortus insignis. Floristic affinity with Hartenbos Dune Thicket/Groot Brak Dune Strandveld is strong with a large number of important taxa recorded, including Schotia afra, Sideroxylon inerme, Carissa bispinosa, Putterlickia pyracantha, Mystroxylon aethiopicum, Pterocelastrus tricuspidatus, Aloe arborescens, Pelargonium peltatum, Clausena anisata, Asparagus aethiopicus and the herb Hypoestes aristata.

Indigenous species recorded along the Sandhoogte WTW powerline route (mainly inside the contour 'hedges' in the upper part) include Erica quadrangularis, Athanasia trifurcata, Senecio rosmarinifolius, Metalasia acuta, Helichrysum cymosum, Seriphium plumosum, Carpobrotus edulis, Lampranthus elegans, Gymnosporia buxifolia, Searsia pallens, S. lucida, Grewia occidentalis, Diospyros dichrophylla, Cynodon dactylon (dominant groundcover) and Bobartia robusta. Most of these are pioneer species commonly associated with regrowth. Floristic affinity is difficult to determine, but the presence of Erica quadrangularis, Athanasia trifurcata, Metalasia acuta, Lampranthus elegans and Searsia pallens suggest it will be either fynbos or renosterveld. None of the recorded species here are important in Garden Route Granite Fynbos. The substrate is also wrong for the latter.

Three Species of Conservation Concern (SCCs) were recorded along the powerline routes namely Hermannia lavandulifolia (VU; Worcester to Plettenberg Bay), Selago villicaulis (VU; Still Bay to Plettenberg Bay) and Carpobrotus cf muirii (NT; De Hoop to Mossel Bay). Hermannia lavandulifolia and Carpobrotus cf muirii are still common and frequently encountered in the Mossel Bay area. Selago villicaulis seems less common with only a few iNat records from the area. According to the online Red List of South African Plants, these species are threatened by habitat loss to crop cultivation, coastal developments and alien plant infestation.

The specialist also noted that Sideroxylon inerme (milkwood) and Pittosporum viridiflorum (cheesewood) are protected tree species in terms of the National Forests Act (Act 84 of 1998). The removal of milkwood and cheesewood trees requires a permit from the Department of Forestry.

Alien species recorded along the powerline routes include Acacia saligna (port jackson, category 1b), A. mearnsii (black wattle, 2), A. cyclops (rooikrans, 1b), Lantana camara (lantana, 1b), Verbena bonariensis (purple top, 1b), Pinus radiata (radiata pine, 1b), Eucalyptus sp (gum), Schinus terebinthifolia (Brazilian pepper tree, 3), Agave americana (sisal, 3), Myoporum insulare (manitoka, 3), Psidium guajava (guava), Opuntia ficus-indica (prickly pear, 1b), Datura stramonium (olieboom, 1b), Ricinus communis (castor-oil plant, 2), Cestrum laevigatum (inkberry, 1b), Echium plantagineum (Patterson's curse, 1b), Helminthotheca echioides (ox tongue), Malva arborea (tree mallow), Tropaeolum majus (kappertjie) and Cenchrus clandestinus (kikuyu, 1b in protected areas).

The high presence of invasive aliens is indicative of the degraded state of the powerline routes. As indicated above, the majority these species are Categories 1b and 2 invaders in the Western Cape. In terms of the National Environmental Management: Biodiversity Act (NEMBA) (Act 10 of 2004). Alien and Invasive Species List (2016), Category 1b invasive species require compulsory control as part of an invasive species control programme. Further in terms of the above Act, the harbouring of black wattle (Category 2 invader) on a property is prohibited without a permit.

The botanical attributes of the proposed powerline routes are presented in the images below (Please see **Error! Reference source not found.** To **Error! Reference source not found.**).



Figure 24. Botanical attributes of the western section of Klein brak WTW powerline route, (Mark Berry Environmental Consultants, 2024).



Figure 25. Botanical attributes of the middle section of Klein brak WTW powerline rout, (Mark Berry Environmental Consultants, 2024).



Figure 26. Botanical attributes of the eastern section of Klein brak WTW powerline route, (Mark Berry Environmental Consultants, 2024).

Conclusion: The vegetation covering the site comprises fallow land and does not resemble any specific vegetation type, such as Hartenbos Dune Thicket or Garden Route Granite Fynbos. It can be described as a shrubby grassland. The dominant species are grasses (e.g. *Cynodon dactylon*) and a few pioneer shrubs, such as *Helichrysum rutilans*, *Senecio rosmarinifolius* and *Nidorella ivifolia*. Due to the severity of past agricultural activities (cultivation), it is unlikely that it will revert to fynbos or thicket in the long term. Only one SCC was recorded on site, namely *Hermannia lavandulifolia* (VU). It is fortunately still very common in the Mossel Bay area. The probability of other SCC to occur on the site also seems low. The site therefore does not present any notable botanical constraints within the proposed solar array site.

The specialist further assessed the area and concluded the proposed powerline routes run through a mixture of transformed/cultivated and regrowth areas, as well as some good quality Hartenbos Dune Thicket and Groot Brak Dune Strandveld. Both these vegetation types are currently listed as threatened. The Klein brak WTW powerline route follows a municipal reserve on the southern side of the R102 for most of the way with significant regrowth and dune thicket in places. The Sandhoogte WTW powerline route runs through a cultivated area. Three SCC could be affected along the Klein brak WTW powerline route, namely Hermannia lavandulifolia (VU), Selago villicaulis (VU) and Carpobrotus cf muirii (NT). H. lavandulifolia and

C. cf muirii are still common and frequently encountered in the Mossel Bay area, while S. villicaulis seems less common. In addition to these, a high number of milkwood and cheesewood trees are also present. Both are protected in terms of the National Forests Act (Act 84 of 1998) and a permit is needed for their removal.

Despite the above constraints, potential for mitigation is very high. Among other, it is recommended that all trenching in sensitive areas be undertaken by hand. An effort must be made to avoid good quality indigenous vegetation and protected tree species as far as possible. The feasibility of rehabilitation after construction is also good. All in all, the impact on both terrestrial biodiversity and plant species is expected to be of **low significance**, with mitigation.

It is therefore recommended that the project be considered for **approval**, but subject to the proposed mitigation measures needed to be listed within the EMPr.

Due to the degraded (transformed) state of the site, the impact on both terrestrial biodiversity and plant species is expected to be of **low significance**. Despite the site's position inside the biodiversity network, it is highly compromised by past agricultural activities and invasive aliens. It is therefore recommended that the proposed development be considered for **approval**.

Due to the evidence provided, it is proposed that the project may be considered from a plant species perspective as the EAP recommends that the sensitivity from the Screening Tool be changed from a medium to low sensitivity, and no further action to be taken. However, the relevant permits will need to be obtained.

8.5. TERRESTRIAL BIODIVERSITY

The Screening Tool suggests that the Terrestrial Biodiversity Theme has a **Very High Sensitivity** and that a Terrestrial Biodiversity Assessment will be undertaken for all the sites examined.



Figure 27. Terrestrial Biodiversity Sensitivity Theme – (DFFE, 2024)

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|--------------------|
| Very High | ESA 1 |
| Very High | CBA 1: Terrestrial |

| Sensitivity | Feature(s) |
|-------------|--------------------------------|
| Very High | CBA 2: Terrestrial |
| Very High | EN_Hartenbos Dune Thicket |
| Very High | CR_Garden Route Granite Fynbos |

Desktop Observation:



Figure 28. Critical Biodiversity Areas & Ecological Support Areas – Solar Array Site, (CFM, 2024).

The proposed site located within the Ecological Support Areas (2) Restored from other land use. The proposed site within the northern area is also mapped within Critical Biodiversity Area Terrestrial.



Figure 29. Critical Biodiversity Areas & Ecological Support Areas (CFM, 2024).



Figure 30. National Biodiversity Assessment: Vegetation Map – Solar array site (CFM, 2024).



Figure 31. National Biodiversity Assessment: Vegetation Map (CFM, 2024)

According to the National Vegetation Map 2018 (Figure 30), the dominant indigenous vegetation type for the site is mapped as Garden Route Granite Fynbos, located in the northern region of the proposed site. The vegetation type is classified as ecological threat status **Critically Endangered**. Garden route Granite Fynbos is characterised by Moderately undulating plains and undulating hills on the coastal forelands. Proteoid and graminoid fynbos are dominant with ericaceous fynbos in seeps. In the west, most remnants of this type are dominated by proteas. Eastwards graminoid and ericaceous fynbos are dominant on the flat plateaus, with proteas confined to the steep slopes.

A portion of the site in the southern direction is characterised by Hartenbos Dune Thicket, the vegetation type is considered to be **endangered** in accordance with Revised National List of Ecosystems that are Threatened and in Need of Protection (Government Notice No. 2747 of 18 November 2022). The vegetation in Hartenbos Dune Thicket is diverse and well-adapted to the sandy, coastal environment. It often includes a variety of shrubs, bushes, and small trees. Common species found in these thicket habitats might include the Cape Myrtle (Euclea racemosa), Wild Olive (Olea europaea subsp. africana), Coast Silver Oak (Brachylaena discolor), and various types of succulents and grasses.

The linear and distribution infrastructure for The Cable Route, Klein Brak solar distribution infrastructure, and Groot Brak solar distribution infrastructure sites are all situated within areas of mapped very high terrestrial significance, specifically within the endangered Hartenbos Dune Thicket. The Cable Route site falls within fragments of CBA 2: Terrestrial (Degraded) areas and CBA 1 areas, with the majority of the pipeline situated in an endangered ecological threat status. Similarly, both the Klein Brak and Groot Brak solar distribution infrastructure sites are within CBAs 1 and 2 for terrestrial features, with the latter also mapped within ESA: terrestrial 1. Each site required verification by a terrestrial specialist due to their ecological significance and endangered status.

Observation by the EAP: The proposed solar array site is largely vegetated within the southern area of the proposed site, along the boundary. However, based on satellite imagery and a

further view, the proposed site looks like it has been historically cleared and does not resemble the type of vegetation found within the respective vegetation types mapped. Based on the findings from the desktop study a Terrestrial Assessment was required by an appropriate SACNASP registered specialist.

Specialist Recommendation: Based on the complied report by Dr Jacobus Visser of Blue Skies Research on the 14th of March 2024, the proposed site the northern part of the site is mapped as a terrestrial CBA1 with the larger southern section overlapping a terrestrial ESA1. Notwithstanding these designations, and following the ground-truthing phase, the following conclusions may be drawn. The site harbours modified, and secondary habitats retrieved as having a "Very low" SEI. The site harbours an impaired terrestrial faunal and avifaunal diversity. The site displays compromised biodiversity and ecological characteristics and ecosystem dynamics. The site is small and does not serve as an important or highly functional ecological corridor in the broader study area landscape. The specialist concluded that the study area fails to meet the criteria of either a CBA1 or ESA1.

Botanist Mark Berry, reported on the terrestrial biodiversity and verified the following. The site features a shrubby grassland with scattered emergent shrubs and trees, with denser vegetation found along the western and southern boundaries as well as on the northern slope. Historical records suggest the site has been fallow for at least 20 years, making it unlikely to revert to its original state. Dominant species include grasses like Cynodon dactylon and pioneer shrubs such as Helichrysum rutilans and Senecio rosmarinifolius. Acacia cyclops, Gymnosporia buxifolia, Grewia occidentalis, and Searsia lucida populate denser scrub patches. Outside the site, slightly higher species diversity is observed, including Olea europaea ssp. cuspidata and various other species. A watercourse runs from the northeast, likely artificial, with Typha capensis and Nidorella ivifolia present. Additionally, a small impoundment in the southwestern corner contains grasses, Schoenoplectus cf paludicola, and the weed Persicaria lapathifolia, with no other notable disturbances recorded on site besides evidence of past farming and invasive alien species.

Based on the Botanical Impact Assessment conducted by Mark Berry on the 6th of September 2024, the following information was gathered for the terrestrial biodiversity for the cable routes, The proposed powerline routes run through a mixture of transformed/cultivated and regrowth areas, as well as some good quality dune thicket and strandveld. The Klein brak WTW powerline route follows a municipal reserve on the southern side of the R102 for most of the way with significant regrowth and dune thicket in places. Some of the passages through the dune thicket are already disturbed, such as the thicket at the western end of the route and the one just south of the N2. The Sandhoogte WTW powerline route runs through a cultivated area. Only a few narrow strips ('hedges') of indigenous growth remain where the route crosses a road reserve and near the northern (upper) end of this route, which are the result of contoured cultivation. The crossing of the N2 and the R102 is also of little or no botanical interest as the crossing points are highly degraded or covered by typical roadside regrowth.

The most prominent vegetation type recorded along the Klein brak WTW powerline route is dune thicket. It is about 4-5 m tall, impenetrable and comprises typical thicket species, such as Sideroxylon inerme, Searsia pterota, Olea europaea, Schotia afra, Azima tetracantha and Mystroxylon aethiopicum. One of the thicket patches is dominated by Pittosporum viridiflorum at the 'expense' of Sideroxylon inerme. Both are protected tree species. Notable indigenous regrowth was also recorded between the thicket patches, but these could not be allocated to a specific vegetation type due to the young age of the regrowth. Common species in the regrowth include Osteospermum moniliferum, Seriphium plumosum, Carpobrotus edulis, Salvia aurea, Leonotis ocymifolia and Tetragonia fruticosa. The regrowth inside the municipal reserve (on the residential or southern side of fence line) is of a better quality and more diverse than the regrowth inside the road reserve. The vegetation here is probably not subject to regular bush-cutting or mowing activities associated with road maintenance.

A patch of Groot Brak Dune Strandveld was also noted along the Klein brak WTW powerline route, between the N2 and R102 (Figure 5-4). This vegetation type is distinguished from dune thicket by its slightly more open and lower structure, as well as a notable presence of fynbos/strandveld elements such as Thamnochortus insignis, Agathosma apiculata, Euchaetis burchellii and Trichocephalus stipularis. This poorly mapped unit was also recorded by the author in a few other places to the east and west of this site. In a recent study on strandveld types along the southern Cape coastline, the strandveld in this area has been remapped as Southeastern Strandveld (Cowling R.M., 2023).

The section of the Klein brak WTW powerline route north of the N2, which is located inside the fenced-off Groot brak WWTW, is quite degraded/modified with only a few common species present, including Osteospermum moniliferum, Senecio rosmarinifolius Carpobrotus edulis, Mesembryanthemum aitonis, Searsia pallens, Grewia occidentalis, Tecomaria capensis and Oxalis pes-caprae. The N2 embankment is mainly covered by Grewia occidentalis. Disturbances noted along the cable routes include agricultural activities (Sandhoogte WTW powerline route), road infrastructure and maintenance, overhead powerlines, an electrical substation, construction activities (at Groot brak WWTW) and alien infestation. Some gardening activities were also noted in a few places where neighbours created their own gardens inside the municipal reserve.

Conclusion:

: Based on the information concluded by the specialist Mark Berry, the powerline routes intercept a mixture of transformed/ cultivated and regrowth areas, as well as good quality Hartenbos Dune Thicket and Groot Brak Dune Strandveld. However, both of the vegetation types are regarded as threatened. The Klein brak WTW powerline route follows a municipal reserve on the southern side of the R102 for most of the way with significant regrowth and dune thicket in places. The Sandhoogte WTW powerline route runs through a cultivated area.

In accordance with both botanical and terrestrial biodiversity specialists for the Solar Array site, the study area is not in a natural condition and will likely not be required to meet biodiversity targets. Furthermore, the site will likely not be essential in supporting the functioning of surrounding CBAs, is not vital in delivering ecosystem services and does not perform a range of biodiversity and ecological infrastructure functions.

It is recommended that all trenching in sensitive areas be undertaken by hand. An effort must be made to avoid good quality indigenous vegetation and protected tree species as far as possible. The feasibility of rehabilitation after construction is also good. All in all, the impact on the terrestrial biodiversity is expected to be of **low significance**, with mitigation. It is therefore recommended that the project be considered for **approval**, but subject to the proposed mitigation measures listed within the EMPr.

To this end, this further indicates that the site is of a **lower sensitivity** and is therefore developable from a terrestrial and faunal sensitivity perspective.

Due to the evidence provided, it is proposed that the project may be considered from a Terrestrial Biodiversity perspective as the EAP recommends that the sensitivity from the Screening Tool be changed from very high to low sensitivity, and no further action to be taken.

9. Conclusion of the required themes:

Agriculture: The proposed development site shows high sensitivity for the solar array and medium sensitivity for other areas. Agriculture assessment recommended by the DFFE Screening Tool. Desktop observation suggests previous cattle grazing and no current agricultural use. Agriculture specialist concluded low significance of negative impact on agriculture due to the development.

Due to the evidence provided, it is proposed that the project may be considered from an agriculture perspective as the EAP recommends that the sensitivity from the DFFE Screening Tool be changed from high to low sensitivity, and no further action to be taken. and that the Department of Agriculture will be included in the public consultation period of the proposed project.

<u>Animal and Avian Species:</u> High sensitivity rating for animal species and low sensitivity for avian species. On-site observations noted limited visibility of animal species but presence of bird species. Specialist verified presence of mammal and bird species, mostly common and of low concern. Limited habitat suitability for animal species due to transformed land.

It is proposed that the project may be considered from an Animal and Avi-faunal perspective as the EAP recommends that the sensitivity from the DFFE Screening Tool be changed from high to low sensitivity, and no further action to be taken.

<u>Aquatic Biodiversity</u>: Low sensitivity rating according to the DFFE Screening Tool. No natural aquatic habitats within or surrounding the proposed site. Specialist confirmed low sensitivity and identified artificial wetlands with limited biodiversity importance.

Based on the evidence provided, it is proposed that the project may be considered from an Aquatic perspective as the EAP recommends that the sensitivity from the DFFE Screening Tool is correct at a low sensitivity rating, and no further action to be taken.

Plant Species: Low sensitivity for the solar array and Groot Brak solar distribution infrastructure sites, medium for the cable route and Klein Brak solar distribution infrastructure site. Proposed site includes Hartenbos Dune Thicket and Garden Route Granite Fynbos, both endangered vegetation types. Specialist identified various plant species, with dominance of grasses and pioneer shrubs. Some invasive species present, but overall low botanical constraints due to site's degraded state.

Based on the evidence provided, it is proposed that the project may be considered from a plant species perspective as the EAP recommends that the sensitivity from the DFFE Screening Tool be changed from a medium to low sensitivity, and no further action to be taken. However, the relevant permits will be obtained from the regulatory bodies le the permits for the Milkwoods and Cheese wood trees observed on site.

Terrestrial Biodiversity: Very high sensitivity according to the Screening Tool. Proposed site overlaps with Ecological Support Areas and Critical Biodiversity Areas. Vegetation types include Garden Route Granite Fynbos and Hartenbos Dune Thicket, both endangered. Specialist findings indicate modified and secondary habitats with compromised biodiversity. Conclusion suggests the site is of lower sensitivity and developable from a terrestrial and faunal sensitivity perspective. Overall, while the project has impacts on various environmental themes, the findings suggest that with appropriate measures, it can proceed without significant adverse effects on the environment.

Based on the overall evidence provided, it is proposed that the project may be considered from a Terrestrial Biodiversity perspective as the EAP recommends that the sensitivity from the DFFE Screening Tool be changed from very high to low sensitivity, and no further action to be taken.

Other relative Screening Tool Themes:

Based on the screening tool and requirements for the proposed project, Sharples Environmental Services cc has further conducted their assessment in due diligence. The following additional themes have been assessed:

- 9.1) Archaeological and Cultural Heritage
- 9.2) Civil Aviation (Solar PV)
- 9.3) Defence
- 9.4) Landscape (Solar)/ Visual Solar Array
- 9.5) Palaeontology
- 9.6) RFI Theme Solar array site

9.1. ARCHAEOLOGICAL AND CULTURAL HERITAGE

The DFFE Screening Tool: The report indicates the site's Archaeological and Cultural Heritage area is of a **low sensitivity** for all of the proposed site locations. The proposed sites are not within a heritage site and or archaeological significant area of concern. The screening tool suggest that an Archaeological and Cultural Heritage Impact Assessment to be completed.



Figure 32. Relative Archaeological and Cultural Heritage Sensitivity Map, (DFFE, 2024).

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|-----------------|
| Low | Low sensitivity |

Observation by the EAP: Based on Section 38 of the National Heritage Resources Act (Act No 25 of 1999), if a development of a portion of land with an extent greater than 5 000 m² is proposed, the developer must inform the responsible heritage resources authority and furnish it with details regarding the location, nature, and extent of the proposed development.

Specialist recommendation: Specialist Dr Peter Nilssen conducted a heritage statement and concluded that the proposed Solar Energy Facility (SEF) and battery energy storage system (BESS) will mainly impact low-potential surficial deposits with minimal effect on significant palaeontological resources. The socio-economic benefits of the project outweigh its negligible impact on heritage, supporting **full approval** without the need for a Heritage Impact Assessment.

Conclusion: A **Notice of Intent to Develop** (NID) will be submitted to the Heritage Western Cape for consideration.

Due to the evidence provided, it is proposed that the project may be considered from an Archaeological and Cultural Heritage perspective as the EAP recommends that the sensitivity from the Screening Tool be maintained at low sensitivity, and no further action to be taken.

9.2. <u>CIVIL AVIATION (SOLAR PV)</u>

The **DFFE Environmental Screening Tool** indicates that the civil aviation (solar PV) is of a **low sensitivity** for the solar array site. The cable route, and both the Klein Brak and Groot Brak solar distribution infrastructures have a **medium sensitivity**.



Figure 33. Civil Aviation Sensitivity Map – Solar array Site, (DFFE, 2024).

Sensitivity Features

| Sensitivity | Feature(s) |
|-------------|--|
| Low | No major or other types of civil aviation aerodromes |



Figure 34. Civil Aviation Sensitivity Map – Linear and distribution infrastructure, (DFFE, 2024).

| Sensitivity | Feature(s) | Cable Route - Klein brak | Klein Brak Solar Distribution | Groot Brak Solar Distribution | Cable Route - Sandhoogte |
|-------------|--|-----------------------------------|-------------------------------------|-------------------------------------|-----------------------------|
| Medium | Between 15 and 35 km from a civil aviation radar | Х | Х | Х | X |
| Medium | m Between 15 and 35 km from a major civil aviation aerodrome | | Х | Х | x |
| Medium | Between 8 and 15 km of other civil aviation aerodrome | Х | Х | - | - |

Desktop Observation:

For the Solar array site no significant impacts have been identified within the solar array site and therefore no further information is needed to be submitted. And forthe linear and distribution infrastructureThe Mossel Bay Aerodrome FAMO Heli - Air Aviation is approximately 20.84 kms away from the proposed site in the South-western direction, approximately 19 kms away from George Airport in a north-eastern direction and 17km away from the Mossel Bay weather Doppler Radar in the South-western direction. After careful observation the site does not appear to pose a risk to the airports landing/departure pass. In accordance with the requirements of the DFFE Screening Tool an assessment will not be undertaken to evaluate this theme.

Observation by the EAP: Regarding the cable routes for the Locality Desktop show medium sensitivity throughout the site, with proposed routes situated at varying distances from key aviation and radar installations. For instance, the proposed cable routes for Klein Brak and Groot Brak solar distribution infrastructures are approximately 11.2km and 16km away, respectively, from the Mossel Bay Aerdrome FAMO site in the southwestern direction. Despite

proximity, underground installation mitigates interference risks with the airport's operations and the Weather Doppler Radar. Similarly, George Airport, located northeast, remains unaffected by the proposed infrastructure. Overall, the observations conclude that the proposed projects should not impact aviation-related themes or pose risks to airport operations.

Conclusion:

Due to the evidence provided, it is proposed that the project may be considered from a Civil Aviation perspective as the EAP recommends that the sensitivity from the Screening Tool be maintained at low sensitivity.Based on the information provided the Civil Aviation Authority (CAA) will be included in the public consultation period. no further action to be taken.

9.3. <u>DEFENCE</u>

The **Screening Tool** suggest that the defence theme is of **low sensitivity** for all of the proposed site locations. It has been recommended by the DFFE Screening Tool (2024) that the solar array site be assessed.



Figure 35. Defence Theme Sensitivity Map, (DFFE, 2024).

Sensitivity Feature

| Sensitivity | Feature |
|-------------|-----------------|
| Low | Low Sensitivity |

Desktop observation of the site: No impacts on existing Defence areas were noted on the sites, as such.

Due to the evidence provided, it is proposed that the project may be considered from a defence perspective as the EAP recommends that the sensitivity from the Screening Tool be maintained at low sensitivity.

9.4. <u>LANDSCAPE (SOLAR)/ VISUAL – SOLAR ARRAY</u>

The DFFE Environmental Screening Tool indicates that the Landscape (solar) is of a very high sensitivity.



| Figure 36. Landscape Theme Sensitivity Map – Solar Al | ray Site, | (DFFE, 202 | 24). |
|---|-----------|------------|------|
|---|-----------|------------|------|

Sensitivity Features

| Sensitivity | Feature(s) |
|-------------|---|
| High | Between 1 and 2 km of the coast |
| High | Between 500 and 1000 m of a town or village |
| High | Slope between 1:4 and 1:10 |
| Low | Slope less than 1:10 |
| Medium | Between a and 2 km of a town or village |
| Very High | Within 500 m of a town or village |
| Very High | Mountain tops and high ridges |
| Very High | Slope more than 1:4 |

Desktop observation: The proposed site is located approximately 2 km away from the ocean in the southernly direction. The proposed site is approximately 735 meters away from the residential area of Tergniet in the Southern direction. In line with the engineering report, a preliminary topographical analysis was performed with existing municipal GIS information available and concluded that the slope of the land under discussion is suitable for the proposed development. The site is defined by a single gentle side slope to the south of approximately 7 - 9%.



Figure 37. The solar array site slopes mapped using a 5 m corridor (CFM, 2024).

Based on the image above the proposed site shows evidence of slopped areas classified mainly within the 10-30 % slope class and has characteristics of the slope class between 3 – 10% along the southwestern boundary and corner of the south eastern corner of the proposed site.

Observation by the EAP: The proposed site is characterised by undulating hills within the site area, and surroundings. The site is poorly visible from the surrounding towns and visual receptors.

Specialist recommendation: The visual impact assessment was conducted by Megan Anderson of Megan Anderson Landscape Architect. The finds from the study concluded that the proposed development will partially fit into the surroundings of the industrial and terraced farmland although it will be clearly noticeable from a few areas. The visual intrusion of the WWTW PV Solar development is therefore **moderate**, it will partially fit into its surroundings but will be clearly noticeable. The Groot Brak WWTW PV Solar Plant will result in a **medium** visual impact, being visible from residential areas and tourist roads.

The specialist recommended the following mitigation measures:

• Create an earth/sand berm (long earth mound) on the southern and western borders of the site, approximately 1 - 1,5m high, within the fenced area of the site and plant this with indigenous trees typical of the surrounding area, that will get to a height of 3 - 5 meters. The selection of the plant species should be made in consultation with the botanist.

• Create more space between the Groot Brak and Klein Brak solar PV panels such that an earth berm planted with trees can be established here, thereby providing screening of the upper panels from the south.

• Areas cleared under the panels should be revegetated with lawn so that the stark earth colour from site clearing is softened by green shades

• Structures and fencing on the site should be painted recessive colours such as charcoal grey and the building materials should also be non - reflective and dark grey colours.
The proposed mitigation measures haved been included in the EMPr for implementation.

Conclusion: The affected residential areas are at least 1km from the site and N2 and R102 tourist routes are at least 500m from the site. The distance mitigates the visibility. The Groot Brak WWTW proposed PV Solar Plant will result in a medium to low visual impact, being visible from residential areas and commuter and tourist roads in the surrounding municipal areas. Mitigation measures will reduce the potential impacts and if these mitigation measures are implemented, the significance of the visual impacts will be medium - low The Scenic Resources and Landscape Character of the area will be little impacted as the development has a relatively small footprint and it's scale is in keeping with other rural and residential blocks. We are of the opinion that if the mitigation measures are enforced, that the proposed development will have a **medium to low visual impact**.

Due to the evidence provided, it is proposed that the project may be considered from a Visual Impact perspective as the EAP recommends that the sensitivity from the DFFE Screening Tool be changed from Very High to medium - low sensitivity.

9.5. PALAEONTOLOGY

The **DFFE Screening Tool** suggest the palaeontology theme is to be assessed as it has appeared in the screening tool specialist assessment list for further assessment, and the site is regarded as **very high** for all site locations.



Figure 38. Palaeontology Theme Sensitivity Map, (DFFE, 2024).

Sensitivity Features

| Sensitivity | Feature(s) |
|-------------|---|
| Medium | Features with a Medium paleontological sensitivity |
| Very High | Features with a Very High paleontological sensitivity |



| Colour | Sensitivity | Required Action |
|---------------|-------------|---|
| RED | VERY HIGH | field assessment and protocol for finds is required |
| ORANGE/YELLOW | HIGH | desktop study is required and based on the outcome of the desktop study, a field assessment is likely |
| GREEN | MODERATE | desktop study is required |

Figure 39. Palaeontology Sensitivity Map (SAHRIS, 2024).

Desktop observation: From the Palaeosensitivity Map provided by the South African Heritage Resource Agency, the site is of very high palaeontology value/ conern. A paleo specialist has been consulted to verify this information as the site has elements of very high sensitivity as indicated from the DFFE Screening Tool, 2024 for the following sites: Solar array site and cable route, Groot Brak solar distribution infrastructure.

It is proposed that a Palaeontological Assessment specialist will verify the site's sensitivity, with a necessary Notice of Intent (NID) submission to the Heritage Western Cape (HWC) for consideration. Similarly, the Klein Brak and Groot Brak solar distribution infrastructure sites, though within areas of very high paleontological significance, are expected to lack signs of paleontological importance due to their transformed open land status.

Observation by the EAP: Based on the desktop observation, and the strong likelihood of paleontological findings to be present, it is important to verify the information by the specialist Dr Peter Nilssen.

Specialist recommendation: The palaeontological significance of the Kirkwood Formation, primarily characterised by petrified wood, fossilised plant impressions, and limited dinosaur remains, particularly in the northern Algoa Basin, is of very high sensitivity. However, in the Mossel Bay Basin, where the proposed Solar Energy Facility (SEF) is to be installed, the formation's **sensitivity is likely lower** due to soft, easily weathered muds lacking significant fossil preservation. The SEF construction mainly affects superficial deposits with **low fossil potential**, necessitating minimal additional palaeontological investigation. Nonetheless, precautionary measures are advised, such as incorporating the paleo find instructions if found for the discovery of fossil wood in the Environmental Management Plan (EMP).

Conclusion: The specialist verified that the site is of **low sensitivity** and A **NID** will be submitted to the HWC for consideration.

Based on the overall evidence provided, it is proposed that the project may be considered from a palaeontological perspective as the EAP recommends that the sensitivity from the DFFE Screening Tool be changed from very high to low sensitivity, and no further action to be taken.

9.6. <u>RFI THEME – SOLAR ARRAY SITE</u>

The **Screening Tool** indicated that the RFI theme is of **high sensitivity**. The tool suggests that a specialist Assessment is required for the solar array site.



Figure 40. RFI Sensitivity Theme Map – Solar array site, (DFFE, 2024).

| Sensitivity | Feature(S) |
|-------------|---|
| High | Between 18 and 30 km from a Weather Radar installation and within the |
| | radar's line of sight |
| Medium | Within 5 km of a Sentech High Power Terrestrial Broadcasting Facility |

Desktop observation: The site has RFI sensitivity identified throughout the map. In accordance with the DFFE Screening tool there is a Weather Doppler Radar installation is between 18 and 30 km from the proposed site development located within the Southwestern direction.

Conclusion: It is the opinion of the EAP that the RFI theme is of low sensitivity, the South African Radar Interest Group (SARIG) will be included in the consultation process. Based on the overall evidence provided, it is proposed that the project may be considered from a RFI perspective as the EAP recommends that the sensitivity from the DFFE Screening Tool be changed from very high to low sensitivity, and no further action to be taken.

Conclusion of the additional themes:

Archaeological and Cultural Heritage: The proposed solar energy facility (SEF) and battery energy storage system (BESS) are situated outside of any designated heritage or archaeological significant areas. While the screening tool suggests the need for an Archaeological and Cultural Heritage Impact Assessment, observations on-site affirm the low sensitivity of the area. Specialist analysis indicates minimal impact on heritage resources, emphasizing the socio-economic benefits of the project. Consequently, a Notice of Intent to Develop will be submitted for consideration, as per regulatory requirements.

Based on the overall evidence provided, it is proposed that the project may be considered from an Archaeological and Cultural Heritage perspective as the EAP recommends that the sensitivity from the DFFE Screening Tool be maintained at a low sensitivity, and no further action to be taken.

<u>Civil Aviation (Solar PV)</u>: The solar array site poses no significant impact on civil aviation operations or radar installations, according to desktop observations. Despite moderate sensitivity along the cable route for distribution infrastructures, mitigation measures such as underground installation mitigate potential risks. Therefore, no further studies are deemed necessary, and the Civil Aviation Authority will be included in the consultation process.

Based on the overall evidence provided, it is proposed that the project may be considered from a Civil Aviation perspective as the EAP recommends that the sensitivity from the DFFE Screening Tool be maintained at a low sensitivity, and no further action to be taken.

Defence: The proposed sites show low sensitivity to defence themes, with no impacts identified during desktop observations. As a result, no further action is required concerning defence considerations.

Due to the evidence provided, it is proposed that the project may be considered from a defence perspective as the EAP recommends that the sensitivity from the Screening Tool be maintained at low sensitivity.

Landscape (Solar)/ Visual – Solar Array: The Landscape sensitivity of the solar project is assessed as very high, with potential visual impacts noted. However, mitigation measures such as earth berms, vegetative screening, and non-reflective structures are proposed to reduce visual intrusion. Despite moderate visual impacts, the project's scale and distance from residential areas mitigate significant concerns, indicating a medium to low visual impact upon implementation of mitigation measures.

Due to the evidence provided, it is proposed that the project may be considered from a Visual Impact perspective as the EAP recommends that the sensitivity from the DFFE Screening Tool be changed from Very High to medium - low sensitivity.

Palaeontology: While the DFFE Screening Tool identifies high sensitivity in palaeontology, onsite observations suggest a lower sensitivity, primarily due to the nature of deposits in the Mossel Bay Basin. Specialist assessment confirms the minimal impact on paleontological resources, recommending precautionary measures in the Environmental Management Plan. Consequently, a Notice of Intent will be submitted for consideration, acknowledging the low sensitivity of the site. Based on the overall evidence provided, it is proposed that the project may be considered from a palaeontological perspective as the EAP recommends that the sensitivity from the DFFE Screening Tool be changed from very high to low sensitivity, and no further action to be taken.

<u>RFI Theme – Solar Array Site:</u> Despite the screening tool indicating high sensitivity to Radio Frequency Interference (RFI), on-site assessments suggest a lower sensitivity. The presence of a Weather Doppler Radar installation nearby is noted, but the impact on RFI is deemed low. The South African Radar Interest Group (SARIG) will be engaged in the consultation process to address any concerns.

Based on the overall evidence provided, it is proposed that the project may be considered from a RFI perspective as the EAP recommends that the sensitivity from the DFFE Screening Tool be changed from very high to low sensitivity, and no further action to be taken.

10. SUMMARY OF SPECIALIST STUDIES

Required themes in terms of the Exclusion Norms (GN 4558 of 2024) from the Requirement to obtain an Environmental Authorisation and additional studies that have been examined in terms of the screening tool:

| <u>Required themes</u> : | | | | | |
|--------------------------|--|----------------------|-----------------------------------|--|--|
| | Theme | Assessment Report | Specialist sensitivity outcome | | |
| 1. | Agriculture Theme | YES | Low | | |
| 2. | Aquatic Biodiversity Theme | YES | Low | | |
| 3. | Terrestrial Biodiversity Theme | YES | Low | | |
| 4. | Animal Species Theme | YES | Low | | |
| 5. | Plant Species Theme | YES | Medium/Low | | |
| | Additional themes | | | | |
| 6. | Archaeological and Cultural Heritage Theme | Yes | Low | | |
| 7. | Civil Aviation (Solar PV) Theme | NO | N/A | | |
| 8. | Defense Theme | NO | N/A | | |
| 9. | Landscape/ Visual Impact Assessment | YES | Medium/Low | | |
| 10. | Paleontology Theme | YES | Low | | |
| 11. | Avian Theme | YES | Low | | |
| 12. | RFI Theme | NO | N/A | | |

Based on the ground-truthing and evidence discussed in this report, the EAP proposes that the following specialist inputs will be suitable in addressing the site sensitivities.

| Required themes | | | |
|-----------------|---|----------------------|--|
| | Theme | Assessment Report | Protocol |
| 1. | Agricultural Impact Assessment | YES | https://screening.environment.gov.za/Scr eeningDownloads/AssessmentProtocols/G azetted WindAndSolar Agriculture Assess ment Protocols.pdf |
| 2. | Landscape/Visual Impact Assessment | YES | https://screening.environment.gov.za/Scr eeningDownloads/AssessmentProtocols/G azetted General Requirement Assessme nt Protocols.pdf |
| 3. | Archaeological and Cultural Heritage Impact Assessment | YES | https://screening.environment.gov.za/Scr eeningDownloads/AssessmentProtocols/G azetted General Requirement Assessme nt_Protocols.pdf |
| 4. | Palaeontology Impact Assessment | YES | https://screening.environment.gov.za/Scr eeningDownloads/AssessmentProtocols/G azetted General Requirement Assessme nt Protocols.pdf |
| 5. | Terrestrial Biodiversity Impact Assessment | YES | https://screening.environment.gov.za/Scr eeningDownloads/AssessmentProtocols/G azetted_Terrestrial_Biodiversity_Assessment Protocols.pdf |
| 6. | Aquatic Biodiversity Impact Assessment | YES | https://screening.environment.gov.za/Scr eeningDownloads/AssessmentProtocols/G azetted Aquatic Biodiversity Assessment Protocols.pdf |
| 7. | Civil Aviation Assessment | NO | https://screening.environment.gov.za/Scr eeningDownloads/AssessmentProtocols/G azetted Civil Aviation Installations Assess ment Protocols.pdf |
| 8. | Defense Assessment | NO | https://screening.environment.gov.za/Scr eeningDownloads/AssessmentProtocols/G azetted Defence Installations Assessmen t_Protocols.pdf |
| 9. | RFI Assessment | NO | https://screening.environment.gov.za/Scr eeningDownloads/AssessmentProtocols/G azetted General Requirement Assessme nt_Protocols.pdf |

| | Required themes | | | |
|-----|---------------------------|----------------------|---|--|
| | Theme | Assessment Report | Protocol | |
| 10. | Geotechnical Assessment | Ю | https://screening.environment.gov.za/Scr eeningDownloads/AssessmentProtocols/G azetted General Requirement Assessme nt Protocols.pdf | |
| 11. | Socio-Economic Assessment | NO | https://screening.environment.gov.za/Scr eeningDownloads/AssessmentProtocols/G azetted General Requirement Assessme nt Protocols.pdf | |
| 12. | Plant Species Assessment | YES | https://screening.environment.gov.za/Scr eeningDownloads/AssessmentProtocols/G azetted Plant Species Assessment Proto cols.pdf | |
| 13. | Animal Species Assessment | YES | https://screening.environment.gov.za/Scr eeningDownloads/AssessmentProtocols/G azetted Animal Species Assessment Prot ocols.pdf | |

10.1. NO-GO ALTERNATIVE

No no-go alternatives have been examined for the proposed project. Based on the overall assessments from the specialists the proposed project is located within medium-low areas and is deemed acceptable for construction. Furthermore, it is required from the EAP and specialists that the project remain within the proposed development footprint and not go outside of these areas.

10.2. CUMULATIVE IMPACTS

Botanical: Based on Mark Berry assessment of the proposed projects solar array site he has concluded that the cumulative botanical impact of the project is expected to be equivalent to the impact on terrestrial biodiversity described above. In this instance, the loss of biodiversity and resultant cumulative impact is considered small (acceptable) due to the degraded (transformed) state of the site. The specialist further noted that for the cable route infrastructure the cumulative botanical impacts of the project is expected to be equivalent to the impact on terrestrial biodiversity and plant species described above, i.e. the continued erosion of Hartenbos Dune Thicket, Groot Brak Dune Strandveld and the biodiversity network as a result of infrastructure development. In this instance, the loss of biodiversity and resultant cumulative impact will be of low significance (with mitigation) due to the current state of the affected habitat, nature of the project and the potential for rehabilitation. There should be no residual impact.

Agricultural: Agricultural land throughout South Africa is under inevitable pressure from various non-agricultural land uses, including urban expansion. The cumulative impact of agricultural land loss is significant. However, the agricultural priority should be to conserve future agricultural production, not simply agriculturally zoned land. As has been shown above, the

site has limited current agricultural production and limited capacity for future agricultural production. Therefore, it is a site which can be used for non-agricultural purposes without a high loss of agricultural production potential. The cumulative agricultural impact of the proposed development is therefore assessed as being of low significance and therefore as acceptable. The development will have an acceptable negative impact on the agricultural production capability of the area, and it is therefore recommended, from a cumulative agricultural impact perspective, that the development be approved.

Heritage: There is no significant heritage resources associated with the development footprint; it does not meaningfully contribute to the already altered cultural landscape of the area. For the same reason there will be negligible to no cumulative impact on the heritage value of the area.

11.CONCLUSION

Sharples Environmental Services cc have been appointed by Element Consulting Engineerson behalf of Mossel Bay Local Municipality to streamline the environmental process in accordance with the Solar Exclusion Norm and Exclusion of the Development and Expansion of Solar Photovoltaic Facilities from the Requirement to obtain an Environmental authorisation (GN 4558 of March 2024) (Thereafter Referred to as the Solar Exclusion Norm), to oversee the environmental processes associated with the proposed project.

The project's objective is to establish a PV Solar Plant and Battery Energy Storage System, located on portion 23 of the farm Wolvedans 129, Groot Brak Rivier located within the Mossel Bay Local Municipality. Providing renewable energy for three key facilities: Groot Brak Waste Water Treatment Works, Sandhoogte, and Klein Brak Water Treatment Works These facilities will operate on a hybrid energy system, strategically addressing current energy constraints in South Africa while promoting holistic and sustainable service delivery and job creation in the area.

The primary goal of this report was to conduct the Site Sensitivity Verification for the proposed project, ensuring alignment with the National Environmental Management Act. This involved identifying environmental components and integrating the mitigation hierarchy, and to address cumulative impacts within the study area.

Specialist studies have been undertaken, covering Agriculture, Aquatic Biodiversity, Terrestrial Biodiversity, and Animal and Plant species. The specialist discovered one common plant SCC found on site. The specialist verified that due to the degraded (transformed) state of the site, the impact on both terrestrial biodiversity and plant species is expected to be of low significance. Despite the site's position inside the biodiversity network, it is highly compromised by past agricultural activities and invasive aliens. It is therefore recommended that the proposed development be considered for approval. The outcomes indicate that the site's previous agricultural use and invasive species presence.

In addition to these studies, Sharples Environmental Services cc conducted due diligence, exploring alternative themes such as Archaeological and Heritage, Civil Aviation, Defence, and Landscape/Visual Impact Assessment, that fall within the DFFE generated Screening Tool report. While these themes were found to have **Low Sensitivity overall**, visual impact assessment emerged as a focal point, with mitigations incorporated into the Environmental Management Programme provided by the specialist concluded **Low-medium Sensitivity** after mitigation.

Throughout the environmental process, thorough consultation with relevant stakeholders has been prioritised to ensure compliance with the National Environmental Management Act. This inclusive approach addresses cumulative impacts and promotes environmental governance. Ultimately, the proposed project represents a significant opportunity to positively impact the Mossel Bay community, advancing sustainable development and ensuring uninterrupted service delivery. By embracing renewable energy and environmental stewardship, it aims to enhance the well-being of residents and foster long-term community resilience.

An Application for Environmental Authorisation in terms of the EIA Regulations of 2014, as amended (GNR 326 of 2017; GNR 517 of 2021) is therefore lodged in accordance with Condition of the Solar Exclusion Norm (GN 4558 of 2024).